A less competent oesophago-gastric junction is associated with oesophageal acid hypersensitivity even in healthy controls
Lottrup, Christian; Krarup, Anne Petas Swane; Ejstrud, Per; McMahon, Barry P.; Drewes, Asbjørn

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P0001 ALTERATIONS OF THE NO-CGMP PATHWAY IN THIOACETAMIDE-INDUCED LIVER FIBROSIS/ Cirrhosis in Rats
D. Schaffner1, A. Lazaro1, I. Merfort1, P. Hasselblatt1, P. Deibert1, W. Kreisel2
1Faculty Of Medicine, University of Freiburg, Freiburg/Germany
2Department Of Pharmacological Biology And Biotechnology, University of Freiburg, Freiburg/Germany

Contact E-mail Address: Denise.schaffner@uniklinik-freiburg.de

Introduction: Liver cirrhosis is associated with an imbalance between vasodilation and vasoconstriction in the sinusoids. Therefore the investigation of the nitric oxide - cyclic guanoin monophosphate (NO-CGMP) pathway, a key regulator of vascular smooth muscle tone, is essential.

Aims & Methods: The rat model of thioacetamide (TAA) was used to induce liver fibrosis/cirrhosis and alterations of the NO-CGMP pathway and subsequent liver damage were assessed. 25 male Wistar rats were studied (11 untreated controls and 14 TAA treated animals 0.03 g TAA/100 ml drinking water for 16 weeks). TAA dosage was adjusted weekly based on body weight changes. Hepatic gene expression of endothelial and inducible NO synthase (eNOS and iNOS), phosphodiesterase type 5 (PDE5) soluble guanylate cyclase (sGCa1 and b1), gCa3 and sGCh1 was determined by qRT-PCR. Serum cGMP concentrations were measured by ELISA using blood samples taken from the carotid artery. Likewise liver damage was assessed by liver chemistry (i.e. alanine- and aspartate-aminotransferases (ALT, AST), alkaline phosphatase (AP), albumin and bilirubin). The degree of fibrosis was estimated by histological criteria (i.e. Desmet scores). PDE5-expression was determined by immunohistochemistry. Kruskal-Wallis test was used for statistical analysis of group differences.

Results: 43% (6/14) of TAA-treated rats developed liver fibrosis (Desmet score of 1–3) while 57% (8/14) developed liver cirrhosis (Desmet score of 4). No major differences in ALAT, ASAT, and AP serum concentrations were observed in either group. However, bilirubin was significantly elevated in TAA-treated rats, while albumin concentrations were significantly reduced. Gene expression analysis revealed significantly increased expression of cGMP (1.5 fold), PDE5 (2.5 fold) and sGCh1 (2.1 fold) in fibrotic livers compared to controls. CGMP concentrations in fibrotic animals were slightly decreased (-34%). Significantly elevated expression of eNOS (2.26 fold), PDE5 (1.1 fold), sGCa1 (1.70 fold) and sGCh1 (3.6 fold) was observed in cirrhotic livers compared to controls, while CGMP concentrations were significantly decreased (-40%). Inos expression was only detected in fibrotic and cirrhotic livers, but absent in controls. Immunohistochemistry revealed markedly increased PDE5-expression in cirrhotic livers, which was predominantly localized in hepatic stellate cells.

Conclusion: The analysis of the animal model of TAA-induced liver fibrosis/ cirrhosis revealed alterations of the NO-CGMP pathway, characterized by reduced concentrations of cGMP, a key mediator of vasodilation, due to increased PDE5-expression. These changes reinforce the hypothesis that sinusoids remain in a contractile state in cirrhotic livers, thereby contributing to portal hypertension. Thus, administration of PDE5-inhibitors, possibly combined with aCGMP-activated agents, should be further studied in clinical trials as a promising therapeutic approach to target portal hypertension.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Conclusion: In chronic hepatitis C SerpinB3 is involved in monocyte activation, leading to the release of cDC163. These results support the relevance of these two molecules in serum of patients with more severe liver fibrosis and metabolic alterations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0004 THE PROTECTIVE EFFECTS OF GROUP 3 INNATE LYMPHOCYTES ON HEPATITIS B VIRUS RELATED LIVER FIBROSIS COULD BE IMPAIRED BY TH17 CELLS

S. Wang, W. Ma, L. Cheng, W. Jiang
Gastroenterology, Zhongshan Hospital Fudan University, Shanghai/China

Contact E-mail Address: 15212110012@fudan.edu.cn

Introduction: Th17 cells have been proved to contribute to hepatitis B virus (HBV) related liver fibrosis. Group 3 innate lymphocytes (ILC3s), which have similar profiles of transcription factor and cytokines to that of Th17 cells, were also suggested to be involved in the progression of liver fibrosis.

Aims & Methods: The study was designed to explore the functions of ILC3s and the relationships between ILC3s and Th17 cells in liver fibrosis. Peripheral blood samples were collected from 60 patients with chronic hepatitis B (CHB), and 50 patients with HBV related liver cirrhosis (LC) as well as 30 healthy controls (HC). The percentages and cytokines secretion of ILC3s and Th17 cells were detected by flow cytometry. Peripheral blood mononuclear cells (PBMCs) and PBMCs without ILC3s were used in the culture from naive C57BL/6 mice in vitro, were transferred into Rag1−/− mice with carbon tetrachloride (CCL4) related liver fibrosis. In addition, ILC3s in Rag1−/− mice were depleted by injecting with anti-CD90.2 antibody.

Results: Compared with HC, the percentage of ILC3s increased in CHB group. The anti-inflammation cytokines secreted by ILC3s such as IL-22 increased, whereas pro-inflammation cytokines of ILC3s such as IL-17A, TNF-α, INF-γ decreased in CHB patients. However, ILC3s decreased in LC patients with reduced cytokine secretion. Th17 cells frequencies significantly increased both in CHB and LC groups compared with HC. PBMCs without ILC3s, which were collected from CHB and LC patients, promoted the proliferation and activation of HSCs because of less IL-22 secretion. Similarly, compared with wild type mice, ILC3s in spleens and livers of C57BL/6 mice with liver fibrosis increased sequentially at time point of week 2 and week 4 following drug injection. Intriguingly, at week 6, ILC3s decreased compared with previous. However, Th17 cells increased gradually with CCL4 administration, even at week 6. Transferring Th17 cells into Rag1−/− mice increased liver fibrosis. By contrast, the ILC3s in spleens and livers decreased significantly, and the degree of mice liver fibrosis become more severe than control. Furthermore, ILC3s depletion correlated with reduced expression of IL-22 and more severe liver fibrosis. Transferring purified liver ILC3s into recipient mice decreased liver fibrosis and reverse liver fibrosis.

Conclusion: Our study has uncovered the protective role of ILC3s in liver fibrosis, which is through secrete IL-22 to reduce proliferation and activation of HSCs. However, the protective functions of ILC3s could be impaired by Th17 cells.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0005 EFFECTS OF INTERNAL AND EXTERNAL BILIARY DRAINAGE ON THE EXPRESSION OF INTESTINAL BILE ACID RECEPTOR AND TLR4/NO2 IN MICE WITH OBSTRUCTIVE JAUNDICE

S. Li1, S. Shen2, T. Zhang3, W. Li3
1Gastroenterology-hepatology, People’s Liberation Army General Hospital (PLAGH), Beijing/China
2The General Hospital of the Chinese People’s Liberation Army, Beijing/China
3Gastroenterology And Hepatology, The General Hospital of the Chinese People’s Liberation Army, Beijing/China

Contact E-mail Address: zhangtt246@sina.com

Introduction: Internal biliary drainage has been confirmed better than external drainage in alleviating the damage of intestinal mucosa barrier caused by obstructive jaundice, whereas the relevant evidence is still unclear.

Aims & Methods: We aimed to investigate the potential relation between the expressions of bile acid receptor and TLR4/NO2 in intestinal mucosa and its influence on the intestinal mucosal barrier with obstructive jaundice. In this study, we mainly study the expression between FXR and TLR4, TGR5 and NO2. Sixty male adult Kunming mice were randomly assigned to four groups: SH (sham operation), OJ (obstructive jaundice), ID (internal drainage), ED (external drainage) (n = 15 in each group). On the 7th day from the first operation, the OJ and SH mice were executed and specimens of blood and ileal tissue of groups were collected. ED and ID were reordered on day 8 for biliary drainage procedure. Blood was drawn from heart for liver function test. The terminal ileum specimen was collected for test of histology using haematoxylin-eosin (HE) staining. Western blot (WB) and real-time polymerase chain reaction (RT-PCR) were used to detect the expression of protein and mRNA of FXR,TGR5, TLR4 and NO2 in intestinal mucosa.

Results: We have successfully established the animal models. The histopathological examination revealed notable inflammatory infiltration and hyperplasia disruption at terminal ileum in OJ mice; significant alleviation of above injuries by ID while little improvement by ED. FXR-TLR4: After biliary obstruction, the expression of protein and mRNA of FXR were significantly increased, while the expression of protein and mRNA of TLR4 were significantly decreased compared with SH group’s (P<0.05). After ED, compared with OJ group’s expression of protein of FXR was decreased while TLR4 were increased. The mRNA of both FXR and TLR4 were increased. After ID, the expression of protein and mRNA of FXR were significantly decreased compared with OJ group’s but were still lower than that in SH group and were both better than ED group’s. And the expression of protein and mRNA of TLR4 were significantly increased compared with OJ group’s (P<0.001), but were still lower than that in SH group and were both better than ED group’s. The trend of TLR4 expression was almost the same between vehicle group and no gavage group. After gavage with FXR agonist, the differences of TLR4 expression of four groups disappeared (P>0.05). TGR5-NO2: IDC and WB suggested that after OJ surgery, the protein expression of both TGR5 and NO2 decreased obviously compared to that of SH mice; then the level of TGR5 and NO2 protein fell remarkably after ID surgery close to SH level while in ED group there was only a slightly reduction form OJ level and still with a high expression of TGR5 and NO2 protein. Detection of RT-PCR found that TGR5 mRNA and NO2 mRNA level in OJ group increased several times as that of the SH group; after ID surgery, the expression of TGR5 mRNA significantly reduced, NO2 mRNA level also fell down consistently, but the effect was not observed in ED mice.

Conclusion: The expression of intestinal FXR and TLR4, TGR5 and NO2 could be one of the critical mechanism why internal drainage is better than external drainage in restore intestinal barrier function of obstructive jaundice mice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0006 ALTERED SMALL INTESTINAL MICROBIOTA TOWARD FAMILY LACTOBACILLACEAE IN MIR-21 KNOCKOUT MICE

A. Santos1, M. B. Alonso2, P. M. Rodrigues3, R. S. Ramiro3, I. Gordo3, R. E. Castro3, C. M. Rodrigues3
1Instituto Gulbenkian de Ciência, Oeiras/Portugal
2Research Institute for Medicines (iMed/Lisboa), Faculty of Pharmacy, Universidade de Lisboa, Lisbon/Portugal
3Universidade de Lisboa, Lisbon/Portugal

Contact E-mail Address: afasantos@iul.isboa.pt

Introduction: Alterations in the gut microbiota have been correlated to a wide variety of diseases, including liver diseases. Used as probiotics, several strains of Lactobacillus have been associated not only to modulation of intestinal tight junctions but also to amelioration of liver fibrosis. Common bile duct ligation (BDL) results in acute cholestatic injury and secondary biliary fibrosis, associated with early increased intestinal permeability and disturbed bile acid homeostasis. We have demonstrated that the oncocgenic microRNA-21 (miR-21) is upregulated in BDL mouse liver, mediating liver fibrosis. We aimed to investigate the role of miR-21 in the response of the small intestinal microbiota to BDL that may explain miR-21 effects in acute liver injury and fibrosis.

Aims & Methods: Three-month-old C57BL/6 wildtype (WT) and miR-21 whole body knockout (KO) mice were submitted to sham or BDL surgeries. After three days, mice were sacrificed and small intestines in the lumen were carefully removed and preserved. mRNA expression was analysed by qRT-PCR. Bacterial DNA was purified from the small intestinal lumen samples and analysed by next generation sequencing – metagenome analysis. Liver tissue and serum were also collected for biochemical analysis of hepatic damage and fibrosis.

Results: TNF-α and IL-1β mRNA levels increased in the small intestine of BDL-mir-21 KO mice compared with WT. TLR-4 and TGF-β mRNA expression was increased in both sham- and BDL-mir-21 KO mice which is in accordance with the higher LPS in blood plasma observed. Zona occludens (ZO-1) and occludin mRNA levels were decreased in WT mice after BDL. Strikingly, mir-21 KO reverted mRNA of tight junction proteins to control levels. BDL-mir-21 KO mice showed decreased circulating levels of hepatic enzymes, concomitant with decreased fibrogenic gene expression in the liver, in comparison with WT mice, suggesting that miR-21 contributes to BDL-induced liver injury and fibrosis. Further, mir-21 KO not only show a decreased small intestine permeability through a ZO-1 and occludin pathway, as it is associated with development of beneficial strains of Lactobacillaceae that may also contribute to liver protection.

Conclusion: These data suggest that miR-21 depletion is associated with increased intestinal tight junction markers in the small intestine and better immune response to bacterial dysbiosis provoked by the BDL surgery, thus halting liver injury and promoting gut microbiota homeostasis. (Supported by PTDIC/BIM-MEC/09572014, FCT)

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0007 THE EMERGING ROLE OF ZBP-89 IN SENSITIZING HEPATIC CANCER STEM CELLS TO SORAFENIB**


1Department Of Surgery, The Chinese University of Hong Kong, Hong Kong; Hong Kong Pre
2Guangdong Key Laboratory For Research And Development Of Natural Drugs, Guangdong Provincial Medical School, Zhanjiang; Pre
3CUHK Shenzhen Research Institute (SZRI), Shenzhen/Pre

**Contact E-mail Address:** nwang@surgery.cuhk.edu.hk

**Introduction:** Sorafenib is the only approved systemic therapy for advanced hepatocellular carcinoma (HCC). However, the application of Sorafenib in therapy has faced increasing challenges due to drug resistance. Drug resistance is known to be associated with cancer stem cells (CSC). The transcription factor ZBP-89 was reported to be involved in cell growth and apoptosis in tumor and acts as a potential tumor suppressor in HCC. It has been shown that high levels of ZBP-89 expression were statistically associated with better survival of HCC patients. Unfortunately, the mechanism of ZBP-89 in modulating sensitivity of Sorafenib in CSC remains unknown.

**Aims & Methods:** In this study, we investigated the mechanism of Sorafenib resistance in HCC cancer stem cells, and how ZBP-89 reduced drug resistance. The sensitivity of Huh7 and Hep3B parental and sphere-forming cells to Sorafenib was measured by MTT assay. We then examined the expression pattern of Notch1 and liver CSC markers in Huh7 and Hep3B CSC after the treatment with Sorafenib. MTT assay was also used to measure the effect of ZBP-89 overexpression on the sensitivity of Sorafenib in sphere-forming cells. The levels of ZBP-89 and CD44 were measured using q-PCR in human tissue samples. The regulatory effects of ZBP-89 on CSC phenotype were explored in-vitro including drug resistance. The immunoblotting sphere formation assay, soft agar formation assay and colony formation assay. Gene expression and protein interaction in stemness signaling pathways were analyzed.

**Results:** We found that sphere-forming HCC cells had significantly higher resistance to Sorafenib, compared with their parental cells. The expression of Notch1 and EpCAM was increased along with the low dose of Sorafenib, suggesting that the activation of Notch1 pathway was associated with the drug resistance in liver CSC. Studies further indicated that ZBP-89 overexpression was able to improve the sensitivity of Sorafenib in sphere-forming HCC cells. Furthermore, we found that ZBP-89 expression was negatively correlated with CSC marker CD44 in human HCC tissue samples. In vitro study indicated that tumor sphere formation was impaired by the transfection of ZBP-89, suggesting that ZBP-89 was involved in suppression of CSC phenotype. Detailed investigation against control cells showed that overexpression of ZBP-89 resulted in reduced expression of CSC markers EpCAM, CD133, Sox2 and c-myc at both mRNA and protein levels. In addition, the overexpression of ZBP-89 or silencing of Notch1 reduced the number of colonies formed by sphere-forming HCC cells, demonstrating opposite effects of these two proteins. Mechanistic studies revealed that ZBP-89 was able to repress the expression of Notch1 and reported that ZBP-89 overexpression was able to improve the sensitivity of Sorafenib in HCC.

**Conclusion:** Sphere-forming HCC cells, which contained high levels of Notch1 and EpCAM, were resistant to Sorafenib. The overexpression of ZBP-89 was found to result in the loss of CSC phenotype and improve the sensitivity of Sorafenib in CSC through its interaction with activated Notch1. In conclusion, we believe that targeting ZBP-89 is likely to be a new therapeutic strategy to overcome resistance to Sorafenib in HCC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0008 PROTECTIVE EFFECT OF AKKERMANSIA MUCINIPHILA AGAINST IMMUNE-MEDIATED LIVER INJURY IN A MOUSE MODEL**

**W. Wu**, D. Shi**, D. Fang**, X. He**, L. Li**

1State Key Laboratory for Diagnosis and Treatment of Infectious Diseases, The First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China; Hangzhou/Pre
2Department of Gastronenterology, Sir Run Run Shaw Hospital, Zhejiang University Medical School, Hangzhou, China; Hangzhou/Pre

**Contact E-mail Address:** wwr725@zju.edu.cn

**Introduction:** Accumulating evidence indicates that gut microbiota participates in the pathogenesis and progression of liver diseases. The severity of immune-mediated liver injury is associated with different microbiotic communities. Akkermansia muciniphila can regulate immunological and metabolic functions. However, little is known about its effects on gut microbiota structure and function.

**Aims & Methods:** This study investigated the effect of *A. muciniphila* on immune-mediated hepatitis and potential underlying mechanisms. Twenty-two C57BL/6 mice were assigned to three groups (N = 7–8 per group) and continuously administered *A. muciniphila* MUC-011 or vehicle intraperitoneally for 2 weeks. Groups were sacrificed 1 day or 7 days after treatment. Mouse livers were isolated, and the liver tissue was homogenized. Liver injury and immune responses were determined by biochemical and histological analyses. Differences were considered significant when *P* < 0.05.

**Results:** We found that oral administration of *A. muciniphila* (Akk) decreased serum ALT and AST and alleviated liver histopathological damage induced by Con A. Serum levels of pro-inflammatory cytokines (IL-2, IFN-γ, IL-12p70, MCP-1, MIP-1α) were significantly lower in the Akk group. Histological analysis revealed that Akk significantly decreased hepatic cell apoptosis; Bel-2 expression increased, but Bax and DR5 decreased. Further investigation showed that Akk enhanced Ocludin and Tight junction protein, two proteins related to strengthened intestinal barriers. Fecal 16s rDNA sequence analysis indicated that Akk increased microbial diversity. The community structure of the Akk group clustered distinctly from that of the Control and Normal groups. Relative abundance of Firmicutes increased, and Bacteroidetes abundance decreased. Correlation analysis showed that injury-related factors (IL-12p70, IFN-γ, DR5) were negatively associated with specific genera (*Ruminococcaceae_UCG-009, Lachnospiraceae_UCG-001*, Akkermansia), which were enriched in mice pretreated with Akk.

**Conclusion:** Our results suggested that *A. muciniphila* (Muc) (ATCC BAA-835) had beneficial effects on immune-mediated liver injury by alleviating inflammation and hepatocellular death. These effects may be driven by the protective profile of the intestinal community induced by the bacteria. The results provide a new perspective on the immune function of gut microbiota in host diseases.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
P0010 FAECALIBACTERIUM ASSOCIATED WITH GUT-PERMEABILITY IN NONALCOHOLIC FATTY LIVER DISEASE
T. Kessoku1, K. Imajo1, Y. Honda1, T. Katoh1, Y. Ogawa1, W. Tomono1, T. Higurashi1, M. Yoneya1, M. Shimakawa1, Y. Tanaka1, T. Kawahara1, S. Sato1, H. Usuda1, K. Wada1, A. Nakajima1
1Yokohama City University School of Medicine, Yokohama/Japan
2Biofermin Pharmaceutical Co., Ltd., Kobe/Japan
3Shimane University Graduate School of Medicine, Shimane/Japan
Contact E-mail Address: takamo0027@gmail.com
Introduction: Despite evidence that the microbiota is involved in the pathogenesis of obesity, the microbiota of patients with nonalcoholic fatty liver disease (NAFLD) has not been well characterized. NAFLD is considered a hepatic manifestation of metabolic syndrome and is particularly associated with insulin resistance, obesity, and gut-derived endotoxin.
Aims & Methods: The aim of our study is to assess if there are any differences in the microbiota of patients with biopsy-proven NAFLD and healthy controls (HC). In addition, peripheral blood endotoxin (ET) and gut-permeability was analyzed in NAFLD (mild fibrosis vs severe fibrosis) and HC patients. A total of 201 patients were enrolled in this study: 68 HC and 134 biopsy-proven NAFLD (77 mild fibrosis and 56 severe fibrosis). One stool sample was collected from each participant. All NAFLD patients included in this study underwent percutaneous liver biopsy. Healthy controls were volunteers. The composition of gut bacterial communities was determined by 16S rDNA sequencing. In addition, peripheral blood ET was determined using endotoxin activity assay (EAA). Gut-permeability was assessed by Lactulose mannitol ratio (LMR). Trial registration: This trial has been registered in the University Hospital Medical Information Network (UMIN) Clinical Trials Registry as UMIN00002709.
Results: Among those taxa with greater than 1% representation in any of the disease groups, it was significantly decrease in Bacteroidetes at phylum level in NAFLD compared with HC. At genus level, Faecalibacterium prausnitzii (F.P) was significantly decreased in NAFLD compared with HC. F.P is significantly decreased in NAFLD with severe fibrosis compared with those with mild fibrosis patients. In addition, endotoxin levels were increased in NAFLD with severe fibrosis than those with mild fibrosis. Furthermore, occupation ratio of F.P was negatively correlated with blood ET levels (R²=0.32) in NAFLD. Additionally, it showed a significant correlation among three items of F.B, EAA and LMR (F.B vs EAA: P < 0.0001, LMR vs EAA: P < 0.0001, LMR vs F.B; P < 0.0025).
Conclusion: Our study indicated that the change of the gut microbiota and pathologic connection were suggested in acknowledgment of the decrease on the biomarker of NAFLD in LEESe analysis. More biomarkers at genus level (Lachnospira, S24-7, etc.) were identified in pairwise comparison of one mouse model with the Control.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0012 PREVALENCE OF METABOLIC SYNDROME AND LIVER STEATOSIS IN A PROSPECTIVE MULTICENTER STUDY OF PATIENTS REFERRED FOR HYPERFERRITINEMIA
1Gastroenterology, Mendaro Hospital, Mendaro/Spain
2Clinical Epidemiology, Donostia University Hospital, Donostia/Spain
3Gastroenterology, Mondragon Hospital, Mondragon/Spain
4Radiology, Oñate Donostia, Donostia/Spain
5Hematology, Galduko Hospital, Galduko/Spain
6Hematology, Hospital de Cruces, Barakaldo/Spain
Contact E-mail Address: agustin castiella@yahoo.es
Introduction: Approximately 25% of adult population in western countries have metabolic syndrome (MS). Hyperferritinemia (HF) is frequently present in patients with MS (dysmetabolic hyperferritinemia). Liver steatosis is often suspected in patients with HF.
Aims & Methods: To study the prevalence of hepatic steatosis defined by MRI in these patients. A prospective study of 312 consecutive with HF (>200 μg/L women; 300 μg/L men) and/or TSI > 45%, confirmed in two determinations, was conducted from December 2010 to April 2013. The MS was defined by the presence of three of the following factors: waist circumference ≥94 cm men/≥80 cm women; Triglycerides ≥150 mg/dL or treatment for this dyslipidemia; HDL < 40 mg/dL women/ < 50 mg/dL men or treatment for this dyslipidemia; glucose ≥100 mg/dL or Type 2 diabetes; hypertension: blood pressure ≥130 mmHg/≥85 mmHg or treatment for arterial hypertension (1). LIC was determined by MRI 1.5 Tesla system (SIR method) (2). We systematically performed T1-weighted in-phase and opposed-phase imaging to determine the presence or not of liver steatosis.
Results: 312 patients (272 men/40 women) were included. Mean age 55 (SD 13.5); Mean ferritin 729, 6 (SD 449.6); mean TSI 40, 8 (SD 15.8); 276 patients have all the required criteria to determine the MS presence: 115/240 men (48%) and 20/36 women (55%). Magnitude of patients with MS (49%); 141 without MS (NMS) (51%). In 286 patients a MR study for the presence of liver steatosis was performed: 196 no steatosis; 90 liver steatosis. 251 patients with MS criteria and MR for steatosis; NMS group (128): no steatosis 103; steatosis 25; MS group (123): no steatosis 72, steatosis 51 (total: no steatosis 175, steatosis 70). When we study if the presence of liver steatosis was more frequent in the MS group, the results obtained were statistically significant, p=0.000.
Conclusion: Nearly 50% of the patients referred for hyperferritinemia to the hospitals of our city, had MS; the patients with MS had more frequently liver steatosis than the patients without MS.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P0013 LIVER IRON CONCENTRATION IN PATIENTS REFERRED FOR HYPERFERRITINEMIA. MULTICENTRE ANALYSIS OF THE DIFFERENT GROUPS ACCORDING TO THE METABOLIC SYNDROME TRANSFERRIN SATURATION RATIO
A. Castiella Eguzki1, E. Zapata1, I. Urretaa, L. Zubiaure1, P. Otauzaa, J. M. Alustiza2, M. D. De Juan3, E. Salvador4, G. Letamendia, B. Arrizabalaga1, A. Iribarren1, L. Mendibil1, J.I. Emparanza2
1Gastroenterology, Mendaro Hospital, Mendaro/Spain
2Clinical Epidemiology, Donostia University Hospital, Donostia/Spain
3Gastroenterology, Mondragon Hospital, Mondragon/Spain
4Radiology, Oñate Donostia, Donostia/Spain
5Hematology, Galduko Hospital, Galduko/Spain
6Hematology, Hospital de Cruces, Barakaldo/Spain
Contact E-mail Address: agustin castiella@yahoo.es
Introduction: In a previous study from our group (1), in a secondary hospital, we did not find differences in the liver iron concentration (LIC) of the different groups, and we can not predict liver iron overload for hyperferritinemia (HF)
patients with HFE mutations and (transferrin saturation index (TSI) values above 0.12). But we did not have C282Y/C282Y patients in this series.

**Aims & Methods:** To study the relevance of HFE mutations and TSI in determining LIC for HF patients attending the outpatient clinic at 6 hospitals in the Basque Country. Prospective study of 312 consecutive patients with HF. Olynyk et al. (2) described three different groups according to HFE mutations and TSI: Group A: no predisposing mutations (PM) for HH and TSI > 45; Group B: PM for HH: C282Y/C282Y; C282Y/H63D, H63D/H63D, and TSI > 45; Group C: no PM for HH and normal TSI; Group D: PM and normal TSI. In the Basque Country, hereditary hemochromatosis (HH) predisposing mutations differ, with relevance of the H63D/H63D mutation. The LIC was measured by MRI.

**Results:** In all the patients HFE study was available: C282Y/C282Y 14 (4.49%); C282Y/H63D/H63D 47 (15.06%); H63D/H63D 99 (31.73%); wt/wt 98 (31.41%); C282Y/S65/S65 1 (0.32%); H63D/S65/S65 2 (0.64%); C282Y/wt 16 (5.13%); S65C/wt 10 (3.21%). LIC was obtained from all the patients by MR. Mean age: 55 ± 13.3, 272 men and 40 women. Group A: 54; Group B: 32 Group C: 160; Group D: 86. The mean LIC index: in Group A: 70.71 ± 27.89, group B: 70.53 ± 56.67, group C: 35.23 ± 22.62. Group D: 42.67 ± 22.98. We compared the LIC mean values of the 4 groups (bonferroni) with significant differences (p = 0.0000).

**Conclusion:** The LIC in different groups of patients referred for HF are significantly different with different predisposition to HH.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0015 INTERLEUKIN-25 PROTECTS AGAINST HIGH-FAT DIET-INDUCED HEPATIC STEATOsis IN MICE BY INHIBING IL-25 AND M2 KUPFFER CELL PRODUCTION**

A. Wang, 1, X. Zheng, 2, B. Li, 1, H. Xiao, 1, J. Hong, 1, X. Zhu 1

1Gastroenterology And Hepatology, The First Affiliated Hospital of Nanchang University, Nanchang/China
2Pharmacy, The First Affiliated Hospital of Nanchang University, Nanchang/China

**Introduction:** Alternatively activated anti-inflammatory macrophage (also termed M2 Kupffer cell) is important for prevention of the development of steatosis and liver injury in non-alcoholic fatty liver disease (NAFLD). Our previous studies demonstrated that interleukin (IL)-25 is downregulated in NAFLD mice and exogenous IL-25 protected against NAFLD by inducing M2 Kupffer cells.

**Aims & Methods:** We aimed to explore the intracellular signaling pathways of IL-25 to regulate macrophage polarization and direct effects of IL-25 on Kupffer cells.

**Results:** Exogenous IL-25 induced expression of type 2 cytokine and alternative activation of Kupffer cell in vivo. It could also promote hepatic macrophages to differentiate into M2 Kupffer cells in vitro. Interestingly, IL-25 recovered the expression of IL-25 mRNA in the liver of NAFLD mice. Furthermore, IL-25 could induce the expression of IL-25 in cultured hepatocytes by activation of STAT6, rather than MZF1, API or NF-κB. STAT6 was sufficient and necessary for IL-25 expression. Deletion and site-directed mutagenesis of the IL-25 promoter revealed that IL-25 transcriptional activation depended primarily on a putative STAT-Binding sequence between nucleotides –682–674 upstream of the start site. STAT6 binding to this sequence increased in response to IL-25 treatment in vitro and in vivo. Finally, IL-25 induced M2a Kupffer cells could ameliorate HFD-induced hepatic steatosis by reducing M1 macrophages and restoring M2 Kupffer cell compositions. Moreover, IL-25 inhibited LPS-induced hepatic steatosis by reducing M1 Kupffer cell activation.

**Conclusion:** Our results elucidate the molecular mechanisms of IL-25 during amelioration of hepatic steatosis and provide the scientific basis of direct IL-25 treatment or macrophage transfusion therapy for NAFLD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**P0016 LONG-TERM BENEFIT OF STATINS USED FOR TREATMENT OF NON-ALCOHOLIC STEATOHEPATITIS (NASH)**

A. Suceveanu 1, A. P. Suceveanu 1, I. R. Parepa 2, D. Catrinu3, F. Voinea 4, L. Mazila 5

1Gastroenterology, Oralius University, Constanta/Romania
2Cardiology, Oralius University, Constanta/Romania
3Internal Medicine, Oralius University, Constanta/Romania

**Introduction:** NASH is considered an important risk factor for liver fibrosis. Although literature data indicates that statins may be beneficial when given for fibrosis accompanying NASH using the scales of FibroMax, 120 patients with NASH and metabolic syndrome were followed-up for a period of 3 years. We excluded patients taking a series of drugs, with genetic metabolic disorders or impaired intestinal absorption (celiac disease) or alcoholics. Steatosis, fibrosis...
and NASH were quantified by using the FibroMax scales at baseline and after three years of statin treatment. Patients were randomized in two groups: the active group of 60 patients receiving low-dose hydrophilic statin (rosuvastatin 10 mg/day) and the witness group. After three years of statins, our active group was stratified as follows: S0–27%, S1–46%, S2–25%, respectively S3–2% of patients, respectively F0–38%, F1–32%, F2–8%, F3–2%; F4–0% of patients. NashTest also proved a positive evolution under statin treatment, compared with placebo. After three years of statins, our active group was stratified as follows: S0–29%, S1–41%, S2–30%, F0–31%, F1–28%, F2–13% and F3–8% of patients in active group, compared with the witness group. After three years of statins, our active group was stratified as follows: S0–27%, S1–46%, S2–25%, respectively S3–2% of patients, respectively F0–38%, F1–32%, F2–8%, F3–2%; F4–0% of patients. 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complex and pathological changes in the liver, determined by the test
Starnage (r = 0.76; p < 0.0001). The dependence obtained is confirmed by
the equation of simple linear regression.
Conclusion: In patients with AO, there is a direct relationship between the
presence of pathological changes in the liver and the initial manifestations of ather-
oseclerosis. The results obtained make it possible to evaluate the individual risk of
atherosclerosis in this category of patients. Clinical significance of the results is
the need for a more thorough examination of patients with AO and suspicion of
liver pathology to assess the development of not only the disease of the liver itself,
but also cardiovascular complications.
Disclosure of Interest: All authors have declared no conflicts of interest.
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P0020 OVEREXPRESSION OF HEPASSOCIN IN DIABETIC
PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE MAY
FACILITATE INCREASED HEPATIC LIPID ACCUMULATION
S. Abd-Elsalam1, S. Khodier2, S. Aboul Sait3, G. Abdelnoorem3
1Tropical Medicine Department, Tanta university, Tanta/Egypt
2Internal Medicine Department, Tanta university, Tanta/Egypt
3Clinical Pathology Department, Tanta university, Tanta/Egypt

Contact E-mail Address: sherif_tropical@yahoo.com

Introduction: Insulin resistance is the main pathogenic determinant of both
NAFLD and diabetes, and it can facilitate triglyceride accumulation in the liver
(1). Overexpression of hepassocin (HPS) increased hepatic lipid accumulation and
NAFLD activity scores (NAS), whereas deletion of HPS improved high fat diet-
duced hepatic steatosis and decreased NAS in mice.

Aims & Methods: The aim of this study was to explore the relationship between
hepassocin and diabetic patients with or without NAFLD. The study included 80
patients that were divided into 4 groups: Group I: included 20 patients who
were diagnosed as diabetes mellitus type 2, Group II: included 20 patients who
were diagnosed as non alcoholic fatty liver disease, Group III: included 20 patients
who were diagnosed as diabetes type 2 and non alcoholic fatty liver disease, Group IV
(control group): included 20 healthy person who were matched in age and sex with patients group.

Results: There was stastically significant decrease in mean value of serum hepass-
ocin of group 1 and IV on comparing with group II and group III. For group III
there was statistically significant increase in mean value of serum hepassocin on
comparing with other groups. There was a significant serum hepassocin up reg-
ulation in patients with type 2 diabetes and non alcoholic fatty liver diseased patients
(Group 3) mostly than diabetic patients (Group 1) and even than non alcoholic fatty liver disease (Group 2).

Conclusion: The present study provides evidence that overexpression of HPS may
facilitate increased hepatic lipid accumulation with NAFLD and Type 2 Diabetes
mellitus.

Disclosure of Interest: All authors have declared no conflicts of interest.
References
cell proliferation of the human hepatic cells L02 and hepatocarcinoma

P0021 MESENTERIC ADIPOSE TISSUE PROTECTS AGAINST
NON-ALCOHOLIC FATTY LIVER DISEASE BY IMPROVING
INTESTINAL BARRIER
Z. Wu1, J. Tan1, F. Zhang1, J. Xu1, Y. Song1, Y. L. Liu2
1Department Of Gastroenterology, Peking University People's Hospital, Beijing/China
2Department Of Gastroenterology, Peking University People's Hospital, Beijing/China

Contact E-mail Address: jerry1989@hsc.pku.edu.cn

Introduction: Visceral adipose tissue (VAT) and gut are thought to be the two
main sources of damage factors promoting non-alcoholic fatty liver disease
(NAFLD). As one part of VAT, mesenteric adipose tissue (MAT) may be
unique in VAT for it can affect liver directly via portal vein. However, the
relationship of MAT status with different stages of NAFLD is not clear, as
well as the role of inflamed MAT in NAFLD.

Aims & Methods: Mice fed with high fat diet or normal diet were sacrificed in
time gradients (4w, 8w, 12w). Then, MAT in high fat diet feeding mice was
removed or not at 8th week and mice were sacrificed at 12th week.

Results: Mice have developed hepatic steatosis at 8th week and progressed to
steatohepatitis by 12th week. Among four parts (mesenteric, epididymal, perire-
nal and retroperitoneal) of VAT, merely MAT became inflamed (mRNA
expression of TNF-a increased, P < 0.01 and IL-10 decreased, P < 0.05) by
8th week, which happened to coincide with the presence of hepatic steatosis.
Removal of inflamed MAT significantly worsened liver pathology, as well as
resulted in hepatic inflammation (mRNA expression of MCP-1 increased,
P < 0.01 and IL-10 decreased, P < 0.01) and lipid accumulation (mRNA expres-
sion of ACC1 increased, P < 0.01 and PPAR-e decreased, P < 0.01). Meanwhile, intestinal permeability was higher in the MAT removal group than that in the
Sham group, which was supported by higher lipopolysaccharide (P < 0.05) in
serum and lower mRNA expression of ZO-1 (P < 0.01) and occludin (P < 0.05)
in small intestine.

Conclusion: These results suggest MAT inflammation arises at the early stage of
NAFLD. Removal of inflamed MAT promotes the development of NAFLD and
injures the intestinal barrier. Thus, we propose that MAT inflammation seems to
be a compensatory response, on the fact that inflamed MAT protects the liver
from the gut-derived damage factors via confining them within MAT, rather than
aggravates NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0022 DIAGNOSTIC ACCURACY OF SHEAR WAVE ULTRASOUND
ELASTOGRAPHY FOR EARLY DETECTION OF NON ALCOHOLIC
STEATOHEPATITIS AMONG PATIENTS WITH TYPE 2 DIABETES
MELLITUS
A. Gameel1, E. M. Elhaddidy, A. A. Mousa, M. M. Elrakhawy
1Internal Medicine, Mansoura University, Mansoura/Egypt
2Tropical Medicine Department, Tanta university, Tanta/Egypt

Contact E-mail Address: asnaagameel165@gmail.com

Introduction: Non alcoholic fatty liver disease (NAFLD) is a broad term describ-
ing simple steatosis, non alcoholic steatohepatitis (NASH), NASH cirrhosis and
NASH-induced hepatocellular carcinoma (1). Incidence increased in patients
type 2 DM. At a level of 8.45 kPa by shear wave elastography, we can differntiate
simple steatosis from steatohepatitis (Area Under Curve 0.936, senstivity 90%,
Specificity 90%, positive predictive value 81%, negative predictive value 94%).

Results: Correlation between results of stiffness by elastography and NAS by
biopsy revealed that: There was a significant positive association between average
stiffness by elastography and definitive NASH (NAS 5 and 6) in patients with
(type 2 DM. At a level of 8.45 kPa by shear wave elastography, we can differntiate
simple steatosis from steatohepatitis (Area Under Curve 0.936, senstivity 90%,
Specificity 90%, positive predictive value 81%, negative predictive value 94%).

Conclusion: Shear wave ultrasonic elastography is a promising non invasive
technique to differentiante simple steatosis from steatohepatitis in patients with
(type 2 DM.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: all authors have declared no conflicts of interest.

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Disclosure of Interest: all authors have declared no conflicts of interest.

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Disclosure of Interest: all authors have declared no conflicts of interest.
P0028 ALTERATIONS IN GUT VASCULAR BARRIER IN EXPERIMENTAL PORTAL HYPERTENSION
M. Soroush1, I. Spadoni2, M. Roccigno3, R. Wiess1
1Department For Clinical Research, University of Bern, Bern, Switzerland
2Istituto Europeo di Oncologia, Milan, Italy
3Department Of Gastroenterology, University Clinic for Visceral Surgery and Medicine, Bern, Switzerland
Contact E-mail Address: marcel.soroush@dkfz.unibe.ch
Introduction: Pathological bacterial translocation (PBT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality several-fold. Factors known to contribute to PBT in LC are among others an increased intestinal permeability.
Aims & Methods: A clear role of translocation for luminal intestinal bacteria is yet to be defined but we hypothesize that the recently described gut vascular barrier (GVB) is impaired in experimental portal hypertension leading to protein loss and increased accessibility of the vascular compartment for translocating bacteria.
For this purpose two different models of experimental portal hypertension, namely partial portal vein ligation (PPVL) and bile duct ligation (BDL) were used in mice subjected to standardized gnotobiotic conditions (sdMDM2).
A novel in vivo confocal endomicroscopy technique was established in order to detect early intestinal vascular leakage. FITC-dextran (70 kDa) was injected intravenously and confocal probe was placed in the intestinal lumen (terminal ileum) to visualize villus-capillaries. Leakage was measured over time (10 minutes) as a ratio between the mean fluorescent intensity inside the vessel (lumina proper) and inside the vessel. Immunofluorescence (IF) stains of the intestinal diaphragms marker plasmalemma vesicle-associated protein-1 (PV-1) were performed for GVB analysis.
Results: Confocal endomicroscopy data revealed an earlier and significantly increased leakage of 70kDa through the intestinal vasculature in both BDL and PPVL mice. FITC-70kDa-dextran did only leak in BDL and PPVL but not in control (sham operated) mice. Interestingly GVB stains showed increased expression of PV1 in intestinal vessels (CD34+) of BDL but not PPVL mice.
Conclusion: Portal hypertension per se has an impact on the GVB increasing FITC-70kDa-dextran leakage from intestinal capillaries to the lamina propria in both BDL and PPVL. However, the IF showed only in BDL an increased PV1 expression indicative of a wider opening of the intestinal diaphragms than in PPVL. Therefore, different mechanisms appear to be involved in alterations of the gut-vascular barrier in pre-hepatic portal hypertension and biliary cirrhosis.
Disclosure of Interest: All authors have declared no conflicts of interest.
Reference
with that of the control group, demonstrating that P3K/AKT signal pathway was partially responsible for development of pathological angiogenesis. However, the treatment with celecoxib strongly decreased the protein expression of VEGF, CD31, P3K and AKT in the spleen of cirrhotic rats.

**Conclusion:** The present study indicates that COX-2 contributes to splenomegaly by facilitating angiogenesis, fibrosis and inflammation in the spleen. Moreover, inhibition of COX-2 by celecoxib could ameliorate portal hypertension and splenomegaly.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0030** **EPITHELIAL BARRIER DESTABILIZATION AND REGULATION OF P53 – A POSSIBLE BACTERIAL DEFENSE MECHANISM IN SPONTANEOUS BACTERIAL PERITONITIS**

M. Haderer 1, L. Wächter 2, E. Aschenbrenner 1, K. Polllinger 1, J. Mundorff 1, S. Thilo 1, M. Müller-Schilling 3

1. Internal Medicine 1, University Hospital Regensburg, Regensburg/Germany
2. Internal medicine 1, Regensburg/Germany
3. Department For Internal Medicine 1, University Hospital Regensburg, Regensburg/Germany

**Contact E-mail Address:** marika.haderer@ukr.de

**Introduction:** Spontaneous bacterial peritonitis (SBP) is a life-threatening complication in advancing liver cirrhosis. Translocation of intestinal bacteria or bacterial products from the gut to mesenteric lymph nodes is crucial for SBP, with Escherichia coli (E. coli), Klebsiella pneumoniae being the most common germs. Small intestinal bacterial overgrowth and a altered microbiota are so far known as risk factors for SBP. However, the exact mechanisms of bacterial translocation need to be identified as they are supposed to contribute to the development of early recognition systems and initiation of antibiotics.

**Aims & Methods:** With regard to the development of early recognition systems, pathomechanisms and signaling pathways of bacterial translocation in SPB were explored. These insights might lead to an initiation of antibiotics on time and reduced mortality in SBP.

Monolayers of human intestinal epithelial cell lines Caco-2 (p53 mutant) and HCT-116 (p53 wildtype) were cocultured with E. coli with different MOI (MOI 0, 1, 5 and 10) for 2–4 hours post confluence. Experiments with heat inactivated E. coli were performed as controls. Effects of microbial metabolic products were tested by using the supernatant of an overnight culture. qPCR and Western Blot analysis were performed to analyze changes in mRNA and protein levels of Occludin and E-cadherin. Two different models of experimental LC – namely partial portal vein ligation (PPVL) and sham-operated mice – were used to test the effect of microbial metabolic products. Effects of microbial metabolic products were performed as controls. Enterochromaffin cells (ECC) were treated with microbial metabolic products and changes in mRNA and protein levels of Occludin and E-cadherin were assessed. With regard to the development of early recognition systems, pathomechanisms and signaling pathways of bacterial translocation in SPB were explored. These insights might lead to an initiation of antibiotics on time and reduced mortality in SBP.

**Monolayers of human intestinal epithelial cell lines Caco-2 (p53 mutant) and HCT-116 (p53 wildtype) were cocultured with E. coli with different MOI (MOI 0, 1, 5 and 10) for 2–4 hours post confluence. Experiments with heat inactivated E. coli were performed as controls. Effects of microbial metabolic products were tested by using the supernatant of an overnight culture. qPCR and Western Blot analysis were performed to analyze changes in mRNA and protein levels of Occludin and E-cadherin. Two different models of experimental LC – namely partial portal vein ligation (PPVL) and sham-operated mice – were used to test the effect of microbial metabolic products. Effects of microbial metabolic products were performed as controls. Enterochromaffin cells (ECC) were treated with microbial metabolic products and changes in mRNA and protein levels of Occludin and E-cadherin were assessed.

**Conclusion:** By using an *in vitro* model, we demonstrate destabilizing effects of E. coli on intestinal cell junctions, p53 and p73. As far as these effects are dependent on incubation time, microbial concentration and living bacteria, these effects might represent a mechanism by which bacteria can affect the epithelial immune responses and therefore to promote bacterial translocation in SBP.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0031** **INTESTINAL EPITHELIAL BARRIER IN EXPERIMENTAL LIVER CIRRHOsis - A ROLE FOR BILE SALTS IN THE MUCUS LAYER**

M. Sorribas Olivera 1, Y. Nose 2, A. Albillos 3, R. Wiest 3

1. Department For Clinical Research, University of Bern, Bern/Switzerland
2. Universidad de Alcalá, Alcalá de Henares/Spain
3. Department Of Gastroenterology, University Clinic for Visceral Surgery and Medicine, Bern/Switzerland

**Contact E-mail Address:** reiner.wiest@insel.ch

**Introduction:** Pathological bacterial translocation (BPT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality severalfold. Factors known to contribute to BPT in LC are among others an increased intestinal epithelial permeability.

**Aims & Methods:** Since mucus represents one of the major components of this barrier we hypothesize that i) gut mucus is altered in LC and ii) bile could be a modulator of its production. Two different models of experimental LC – namely bile duct ligation (BDL) and the chronic treatment with carbon tetrachloride (CC4) – as well as partial portal vein ligation (PPVL) and sham-operated mice were used. Finally the farnesoid X receptor (FXR) agonist obeticholic acid (OCA) and the FXR agonist obeticholic acid (OCA) and control animals. FXR agonist obeticholic acid (OCA) and control animals. Mucus thickness measurement on gut explants and PAS (Periodic acid-Schiff) staining to visualize and count goblet cells (GC) were utilized.

**Results:** We have observed a significant reduction in mucus thickness in ileum and colon in BDL 0.38±0.04 μm vs BDL 1.03±0.07 μm (p<0.01) in control (Control 154.38±12.51 μm 100 μm of villus±0.07 vs BDL 0.29 GC/100 μm of villus±0.04 of mice following BDL but not PPVL. With regard to the development of early recognition systems, pathomechanisms and signaling pathways of bacterial translocation in SPB were explored. These insights might lead to an initiation of antibiotics on time and reduced mortality in SBP.

**Conclusion:** By using an *in vitro* model, we demonstrate destabilizing effects of E. coli on intestinal cell junctions, p53 and p73. As far as these effects are dependent on incubation time, microbial concentration and living bacteria, these effects might represent a mechanism by which bacteria can affect the epithelial immune responses and therefore to promote bacterial translocation in SBP.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0032** **CAPSACIN AND SULFORAPANE PREVENT THE ADVANCEMENT OF LIVER FIBROSIS IN AN EXPERIMENTAL MODEL OF LIVER CIRRHOSis**

E. J. Mendivil 1, A. Sandoval-Rodriguez 1, A. Domínguez-Rosas 2, L. Zapita-Ramos 3, J. Armendariz-Borunda 3

1. Molecular Biology And Genomics, University of Guadalajara, Guadalajara, Mexico
2. University of Guadalajara, Guadalajara/México

**Contact E-mail Address:** edgar.mendivil@live.com

**Introduction:** Liver fibrosis is the excessive accumulation of extracellular matrix (ECM) following a chronic liver injury. It is characterised by an increase in gene expression of proinflammatory molecules such as TGF-b1, IL-1b, IL-6 and TNF-a, as well as an excess synthesis of ECM components such as COL-1. Capsaicin (CAP) is a pungent compound found in chilli peppers which has shown anticancerogenic, antiinflammatory and antifibrotic properties. Moreover, sulforaphane (SFN) is an isothiocyanate which is in cruciferous such as broccoli and it has exhibit an antioxidiant effect in several in vitro and in vivo models.

**Aims & Methods:** The objective of this project was to evaluate the antifibrogenic and antiinflammatory effects of a daily supplementation with CAP and SFN in a rat model of liver fibrosis due to carbon tetrachloride (CCL4) intoxication. 35 male Wistar rats were included (n=7/group); animals were administrated intraperitoneally 5 times per week during 8 weeks with a mix of CCL4/molar (1.5/week 1, 1.1/week 2 and 1.3 week 3–8). Healthy and CCL4-fibrotic controls received only supplementation vehicle (Tween 2% in PBS). Treated groups receive SFN 5ug/kg, or CAP 2mg/kg, or both supplements daily by oral gavage since the beginning of CCL4-intoxication regimen until sacrification. Masson staining and PCR was performed in liver samples. Hepatic enzymes were analysed in serum.

**Results:** Groups treated with CAP and SFN showed a decrease of >30points in percentage of liver fibrosis according to Masson staining (p<0.05), hepatic function improve since AST and ALT serum levels diminish (p<0.01) also a lower gene expression of TGF-b1, COL-1, TNF-a, IL-1b and IL-6 was detected in treated animals when compared with fibrotic controls (p<0.01).

**Conclusion:** Thus, CAP and SFN seem to exert a hepatoprotective effect in this model of chronic-induced liver damage. These findings suggest that dietary sources of CAP and SFN might be included in dietetic guidelines for the prevention of liver fibrosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0033** **DIAGNOSIS OF GASTRIC VARIcES BY ENDOscopIC ULTRASONOGRAPHY USING COLOR DOPPLER**

T. Sato

Gastroenterology, Sapporo Kosei Hospital Dept. of Gastroenterology, Sapporo, Japan

**Contact E-mail Address:** taka.sato@ja-hokkaidoukouseiren.or.jp

**Introduction:** Gastric variceal bleeding is common complication, and it is associated with higher morbidity and mortality rates than hemorrhage from esophageal varices. Oesophagogastroduodenoscopy is usually the initial investigation in the portal hypertension for the purpose of the distinction between gastric varices and gastric folds. The aim of this study was to investigate endoscopic color Doppler ultrasonography (ECDUS) findings of gastric varices.

**Aims & Methods:** Two hundred-fifteen patients with gastric varices were evaluated with ECDUS. To begin with, identification of gastric varices was performed with B-mode scanning and then, color flow mapping was done. On B-mode scanning, submucosal gastric varices, and para-gastric collateral veins were obtained as hypoechoic vessels within gastric wall or in the tissue and spaces exterior to the adventitia of gastric wall. ECDUS provides a color display of blood flow and evaluates the flow pattern using fast Fourier transform (FFT) analysis. FFT analysis can indicate the flow pattern and calculate the velocity of blood flow. We monitored the color flow images of gastric varices, and para-gastric or peri-gastric collateral veins. Endoscopic findings of gastric varices were evaluated according to the grading system outlined in The General Rules for...

Results: The color flow images of gastric varices and peri-gastric veins were delineated in all 215 patients with ECDUS. Evaluation of blood flow velocity in the 215 gastric varices revealed velocities of 7.7–35.7 cm/s (mean, 18.2 ± 6.0 cm/s). Mean velocity of large, coil-shaped (F3) type gastric varices was 23.7 ± 6.2 cm/s (n = 52), while the mean velocity of enlarged tortuous (F2) type gastric varices was 16.7 ± 5.0 cm/s (n = 163). The velocities of F3 type gastric varices were significantly higher than those of F2 type (P < 0.0001). Next, we evaluated the wall thickness to submucosal gastric varices. Two hundred-fifteen of the gastric varices were 1.0–2.2 mm (1.6 ± 0.4 mm) in gastric wall thickness. Mean thickness of red color (RC) or erosion positive varices was 1.2 ± 0.2 mm (n = 42), while the mean thickness of RC or erosion negative varices was 1.7 ± 0.3 mm (n = 173). The thickness of RC or erosion positive varices was significantly thinner than that of the negative cases (P < 0.0001). Seven cases of the 215 patients had the current history of gastric variceal bleeding, and the other three cases had experienced variceal rupture on follow up (bleeding cases, n = 10), and mean thickness of these bleeding cases were 1.2 ± 0.2 mm.

Conclusion: ECDUS is a useful modality for the diagnosis of hemodynamics of gastric varices and may allow the stratification of patients into low, high risk for hemorrhage.

Disclosure of Interest: All authors have declared no conflicts of interest.
HEPTEM 57 (50–59), p = 0.05). This finding, together with a decreased concentration of endothelial-MP carrying TM (TM-MP/L: 232 (190–287) vs 377 (218–493), p = 0.002) and endothelial-Pc receptor (EPCR/CD65E-MP/L: 16 (14–25) vs 37 (24–70), p < 0.001), demonstrated a local greater endothelial damage in cirrhotics.

Conclusion: In cirrhotics, venous hypercoagulability and portal site specific endothelial damage, associated with hampered antithrombotic properties, may be important local risk factors in the pathogenesis of PVT along with the documented venous stasis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0037 RIFAXIMINA IS ASSOCIATED WITH REDUCTIONS IN EMERGENCY DEPARTMENT RESOURCE USE IN UK PATIENTS WITH HEPATIC ENECEPHALOPATHY: REAL-WORLD EVIDENCE FROM THE IMPRESS STUDY
M. Hudson1, P. Di Maggio2, R. Cipelli3, R. Aspinall4
1Freeman Hospital, The Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle Upon Tyne/United Kingdom
2Medical, Norgine UK, Harefield/United Kingdom
3pH Associates, Marlow/United Kingdom
4Queen Alexandra Hospital, Portsmouth Hospitals NHS Trust, Portsmouth/United Kingdom

Contact E-mail Address: pdimaggio@norgine.com

Introduction: In clinical trials rifaximin-α (RFX) has been shown to reduce recurrence of episodes of overt hepatic encephalopathy (HE) and HE-related hospitalisations. UK real-world data confirmed reductions in hospital admissions and length of stay with RFX use; however, data on use of emergency department (ED; A&E in UK) resources are still scarce. This study assessed the impact of RFX on utilisation of ED resources.

Aims & Methods: Patients from 11 UK hospitals who were prescribed RFX for HE between July-2008 and May-2014 were included in this retrospective observational study. Patient records were reviewed; details of demographic and clinical characteristics, and all-cause ED attendances and admissions were collected in the 6 and 12 months pre- and post-RFX initiation. The analysis included only patients who were alive at the end of the study periods.

Results: Of the 145 patients included, 114 (79%) were alive at 6 months and 102 (70%) at 12 months post-RFX initiation. At RFX start, mean age was 61 years, 63% were male; 67% had alcohol-related liver disease; for patients with available MELD score (70%), the mean was 16; 78% were on lactulose. Use of ED resources in the 6 and 12 months pre- and post-RFX initiation is shown in Table 1. Six patients developed adverse events, none serious.

Conclusion: In UK clinical practice, treatment with RFX for HE is well-tolerated and associated with significant reductions in ED attendances, with or without admission, both within 6 and 12 months of RFX initiation.

Disclosure of Interest: M. Hudson: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine P. Di Maggio: Employee of Norgine R. Cipelli: Consultant for Norgine; employee of pH Associates which was commissioned by Norgine to provide support with study design and management, data analysis and scientific editorial services R. Aspinall: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine

Table 1: All-cause ED attendances and admissions, pre- and post-RFX initiation

<table>
<thead>
<tr>
<th>Resource use parameter*</th>
<th>n0</th>
<th>Pre-RFX initiation</th>
<th>Post-RFX initiation</th>
<th>P†</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED attendances with or without admission</td>
<td>81</td>
<td>264</td>
<td>118</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances with or without admission/patient</td>
<td>81</td>
<td>2.3 (0.3)</td>
<td>1.0 (0.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ED attendances without admission</td>
<td>61</td>
<td>118</td>
<td>60</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances without admission/patient</td>
<td>61</td>
<td>1.0 (0.2)</td>
<td>0.5 (0.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Admissions via ED</td>
<td>74</td>
<td>146</td>
<td>58</td>
<td>–</td>
</tr>
<tr>
<td>Admissions via ED/patient</td>
<td>74</td>
<td>1.3 (0.2)</td>
<td>0.5 (0.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Bed days/patient admitted via ED</td>
<td>74</td>
<td>18.2 (2.6)</td>
<td>7.2 (2.0)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Data are presented for all surviving patients at the end of the 6 months (n = 114) or 12 months (n = 102) as mean (standard error of the mean, SEM) per patient

†Paired t-test

P0038 PREDICTING FACTORS FOR HOSPITAL READMISSION AFTER THE FIRST EPISODE OF HEPATIC ENECEPHALOPATHY
M. Silva1, A. Peixoto2, H. Cardoso2, S. Lopes2, G. Macedo2
1Gastroenterology, Hospital São João, Oporto/Portugal
2Centro Hospitalar São João, Porto Medical School, Porto/Portugal

Contact E-mail Address: marcoacostasilva87@gmail.com

Introduction: Hepatic encephalopathy (HE) is a frequent complication of liver cirrhosis, with necessity of hospital admission in many cases. The economic burden of HE is substantial. After ascites, HE is the second most common reason for hospitalization of cirrhotic patients. HE is also the most common, possibly preventable, cause for readmission.

Aims & Methods: We aimed to assess the factors associated with the increased likelihood of hospital readmission for HE after the onset episode.

We completed a retrospective Retrospective analysis of admissions for HE of patients with liver cirrhosis, between October 2010 and October 2015. Only the onset episode was included. Patients were followed for 1 year or until readmission for HE. All patients were discharged under lactulose therapy. Descriptive statistics, uni and multivariate analysis, logistic regression, and ROC curves analysis were performed using IBM SPSS Statistics 22 with p < 0.05 deemed to be statistically significant.

Results: In this study 119 patients were included: 78% men with a mean age of 59 ± 13 years: 88% had hepatocellular carcinoma, and 45% had Child-Pugh C. The most frequent cirrhosis etiologies were alcoholic disease (60%) and HCV infection (12%). The precipitating factors, for the onset episode, more frequently detected were diuretic overdose (36%) and infection (31%). All patients were treated with standard therapy, with an adequate lactulose dose. The readmission rate after the first episode of HE was 72% (75% men). The estimated average time to relapse was 18 weeks. The most frequent causes of readmission were also diuretics overdose (31%) and infection (30%). The patients who were readmitted had a higher MELD score than patients without recurrence (13.9 vs. 11.6 points; p = 0.015). This association was verified in the multivariate analysis (OR = 1.1, p = 0.044).

Conclusion: In this cohort, there was a high rate of readmission for HE after the inaugural episode, which carries a great impact on individual health and high socio-economic costs. A higher MELD score was independently associated with a high probability of readmission for HE.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
SAFETY, EFFICACY AND RISK OF COMPLICATIONS FOR CIRRHOTIC HCV PATIENTS WITH THROMBOCYTOPENIA AND HYPOALBUMINEMIA TREATED WITH OMBITASVIR/ PARITAPREVIR/R+DASABUVIR/R+RIBAVIRIN – A REAL-LIFE COHORT

C. Ester1, L. Gheorghe2, I. Ciacob1, C. Cijevschi3, A. Trifan3, I. Iacoi4, I. Costea5, R. T. M. Cirescu5, C. Bruco5, R. D. G. Vrănoiu6, R. A. Iacob1, C. Gheorghe1, M. Diculescu1
1Department Of Gastroenterology, Fundeni Clinical Institute, Bucharest/Romania
2Department Of Gastroenterology And Hepatology, University of Medicine and Pharmacy Victor Babes Timisoara, Timisoara/Romania
3Department Of Gastroenterology And Hepatology, University of Medicine and Pharmacy Timisoara, Timisoara/Romania
4Oradea Regional Hospital, Oradea/Romania
5Dept. Of Gastroenterology, University Hospital Timisoara, Timisoara/Romania
6Matei Bals Clinical Institute, Bucharest/Romania
7EMF Craiova, Craiova/Romania
8Third Medical Clinic, Fabricio Turism, Cluj Napoca/Romania
9Institute of Gastroenterology and Hepatology, Carol Davila University of Medicine and Pharmacy, Bucharest/Romania
101st Dept. Of Gastroenterology & Endoscopy, PetCenter of Gastroenterology and Hepatology, Bucharest/Romania

Contact E-mail Address: carmen.ghidu@gmail.com

Introduction: The regulations for prescribing interferon-free treatment for patients infected with hepatitis C virus in Romania comprised only patients with F3/F4 fibrosis so the risk of hepatic decompensation and complications was higher compared to other cohorts. In previous interferon-based regimens, thrombocytopenia and hypalbuminemia were markers for portal hypertension and hepatic synthetic dysfunction, respectively, have been shown to reduce the like- lihood of sustained virological response and to increase the rates of serious adverse events.

Aims & Methods: The aim of this study was to evaluate the impact of thrombocyto- penia and hypalbuminemia on treatment outcome and disease complica- tions. We included in this study 855 HCV-infected cirrhotic patients treated withombitasvir/paritaprevir/r-dasabuvir/r-ribavirin for 12 weeks in 10 university hospi- tals in Romania. The following groups were studied: 151 patients (17.7%) with albumin <3.5 g/dl, 239 (28%) with thrombocytopenia (a cutoff of 10000/mmc was used) and 71 patients (8.3%) with both hypalbuminemia and thrombocy- topenia before initiating antiviral treatment. Safety (as AE >5% and SAE), efficacy, change in HCV RNA undetectable and week 12 post-therapy and complica- tion rate were evaluated using Pearson’s correlation, multivariate analysis and Chi-Square test.

Results: Main patient characteristics were: 100% genotype 1 b, a median age of 63 yo, 466 women (54.57%), high rate of previous interferon-based-treatment (36.1%). End-of-treatment and sustained virological response rate were both >99% and there was no correlation with the presence of thrombocytopenia or hypalbuminemia. The rate of adverse events in the whole cohort was 17.5% at 2 weeks reaching 18% at the end of treatment with only 0.8% severe adverse events with no statistical association with the presence of thrombocytopenia and hypalbuminemia. The multivariate analysis showed significant association of thrombocytopenia (<10000/mmc) with higher (>1) degree of oesophageal varices (p = 0.011), one of upper digestive hemorrhage during treatment (p = 0.002). Low albumin (<3.5 g/dl) also correlated with higher (>1) degree of oesophageal varices (p = 0.001) and onset of upper digestive hemorrhage during treatment (p = 0.002).

Conclusion: The efficacy and safety of theombitasvir/paritaprevir/r-dasabuvir/r-ribavirin (as recommended by national regulations) was not different in cirrhotic patients with hypalbuminemia and thrombocytopenia, but complica- tions rate was higher so close follow-up and proflatic measures should be recommended, especially if previously exposed to interferon containing regimens.

Disclosure of Interest: All authors have declared no conflicts of interest.

BACTERIAL INFECTION IN PATIENTS WITH DECOMPENSATED CIRRHOSIS - A PREDICTOR OF LONG-TERM MORTALITY INDEPENDENT OF DISEASE SEVERITY

Gastroenterology, Centro Hospitalar de Vila Nova de Gaia e Espinho, Vila Nova de Gaia/Portugal

Contact E-mail Address: mafa1da_m_p sousa@hotmail.com

Introduction: Bacterial infections are common in cirrhotic patients and the pro-inflammatory response superimposed on the hemodynamic dysfunction of portal hypertension predisposes to the development of complications. Some authors suggest that the occurrence of infection should be considered a separate clinical stage, since it alters the natural history of cirrhosis.

Aims & Methods: Retrospective assessment of patients with cirrhosis hospitalized for first episode of decompensation between 2011–2015. The aim was to evaluate the prognostic significance of bacterial infections regardless of the severity of the underlying liver disease.

Methods: Four patients (85% male, mean age 59 years, mean MELD 15, 72% alcoholic cirrhosis) were included with a total of 197 hospitalizations. Hospitals admissions were more frequent due to variceal haemorrhage (42%) and encepha- lopathy (37%). The incidence of bacterial infection was 23%: 41% respiratory, 31% spontaneous bacterial peritonitis and 24% urinary. Of these, 51% were nosocomial and in 20% an infectious agent was isolated. The survival rates at 30 days, 3 months, 6 months and 1 year were 65%, 55%, 34% and 27% in patients with infection and 97%, 90%, 85% and 78% in those without infection (p < 0.001). In the multivariate analysis, survival was independently associated with MELD (hazard ratio (HR) 1.073, p = 0.012), age (HR 1, 032, p = 0.012) and infection (HR 3, 821, p < 0.001). Bacterial infection remained an independent predictor of mortality, even when excluding patients with in-hospital mortality and during hospital stays (HR 3,093, p < 0.001) and in-hospital stay (HR 1,465, p < 0.001).

Conclusion: Patients with cirrhosis exposed to a bacterial infection are at increased risk of death. This risk remains in the long term when we exclude patients with in-hospital mortality and at 30 days and regardless of the severity of the underlying disease (MELD).

Disclosure of Interest: All authors have declared no conflicts of interest.
A proportionally greater elevation in liver transplant candidacy in patients with NAFLD and portal vein thrombosis

M. Basaranoglu
Gastroenterology, Bismilam Vakif University, Istanbul/Turkey

Contact E-mail Address: metin_basaranoglu@yahoo.com

Introduction: NASH progresses to cirrhosis and its complications including hepatocellular carcinoma. It is possible that risk factors for NAFLD-associated cirrhosis may differ in Eastern countries from those in the West. Thus, we aimed to document the characteristics of patients with NAFLD-associated cirrhosis from Turkey, an European country sharing 97% of its borders with Asia. Relative to other Eastern Europeans, the Turkish population exhibits a higher rate of obesity that may impact that to in the West.

Aims & Methods: To characterize non-alcoholic fatty liver disease (NAFLD) presentation with esophageal varices. METHODS: We have kept the records of patients at our hepatology unit and affiliated liver center. Data were collected for esophageal varices at the advanced endoscopy unit. A cohort of patients with esophageal varices from 2003 to 2014 was reviewed. Eligible patients were ≥18 years of age and have had esophageal varices diagnosed by upper gastrointestinal endoscopy examination. They had regular clinical follow-up and endoscopic examinations at our clinic. Efficacy data were based on the last evaluation. Transplanted cases were excluded. The main inclusion criterion was the presence of esophageal varices with or without gastric varices. Only 258 patients with esophageal varices had high-risk varices had reliable data and were included in this study. Each patient was evaluated for fundal varices, PVT, cirrhosis, HCC, and mortality. After the first evaluation, patients were divided into 4 groups: Those with hepatitis B, hepatitis C, NAFLD and others related to autoimmune hepatitis, Wilson Disease, primary biliary cirrhosis, etc.

Results: Primary end-point of the study was to use this cohort of patients with esophageal varices to evaluate the relationship between this disease and several etiologies, including NAFLD, hepatitis B, hepatitis C, or other liver-related diseases. We started to draw this comparison in terms of PVT, HCC, survival and mortality. Of the 258 patients with esophageal varices, NAFLD in 39.0% (101 patients), hepatitis B virus in 29.1% (75 patients) and HCV in 11.2% (29 patients). The mean age of NAFLD was 56.4 ± 16.0 years and 62% of these patients were men. Moreover, 47.5% had PVT, 5.0% had HCC, and 45.5% had fundic varicose veins. The mortality rate was 47.5% during follow-up, but increased to 80% in the presence of HCC. PVT was observed in 47.5% of patients with NAFLD, 29.3% of patients with hepatitis B, 17.2% of patients with hepatitis C, 23.3% of patients with other liver-related diseases (P < 0.0001). Of the 111 patients (43%) that died during the study period, 72 patients (64.9%) had no PVT (P = 0.057). HCC was: 5.0% in patients with NAFLD, 26.7% in patients with hepatitis B, 34.5% in patients with hepatitis C, and 5.7% in other diseases (P < 0.0001). Of the 38 patients with HCC, 13% had PVT. Moreover, HCC increased the mortality rate in almost all the groups. Of the patients, 50.0% with NAFLD, 33.3% with hepatitis B, 26.3% with hepatitis C, and 58.3% with other diseases were alive at the end of the 5-year period with a significant difference according to the Kaplan-Meier log Rank test (P < 0.004). Risk for mortality, measured by risk ratio (RR), did not change per gender (RR: male/ female = 43.3%/42.5%, P > 0.05) or with the occurrence of cirrhosis (RR: 44.8%/28.6%, P > 0.05). However, it changed with the emergence of fundic varices (RR: 49.0%/24.3%, P = 0.024 in favor of fundic varices development) and HCC (RR: 78.9%/38.6%, P = 0.0001 in favor of HCC development).

Conclusion: Data revealed a proportionally greater rise in liver transplant candidacy due to NAFLD-associated cirrhosis with portal vein thrombosis. The mortality rate of patients with NAFLD-associated cirrhosis did not differ from that in patients with virally caused cirrhosis. We confirmed that NAFLD was the third leading cause of HCC on the transplantation waiting list. Older patients in patients with virally caused cirrhosis. We confirmed that NAFLD was the third leading cause of HCC on the transplantation waiting list. Older patients in patients with NAFLD-associated cirrhosis from Turkey had a higher risk of HCC than patients with viral hepatitis. From the variables identified in the multivariate analysis, a predictive model of MDR bacterial infection was created. Assuming a sensitivity of 66% and a specificity of 72%, we considered the cut-off of ~0.0415 as clinically relevant, regarding likelihood of developing a MDR bacterial infection (AUCROC 0.723; 95% CI 0.667-0.780). The occurrence of a MDR infection was associated with a longer duration of hospitalization (p = 0.0017). In the multivariate analysis there was no independent association between MDR infection and in-hospital mortality and one month after discharge. The prevalence of MDR infections in cirrhotic patients is significant and associated with a longer hospital stay. It is possible to identify predictors of its occurrence in order to implement epidemiological strategies to reduce the risk of these infections.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0045 EFFECT OF TREATMENT OF CHRONIC HEPATITIS C WITH SOFOSBUVIR AND DACLATASVIR IN PATIENTS OLDER THAN 60 YEARS K. Elnoemany1, M. Badr2
1Gastroenterology, National Liver Institute (NLI), Menofya University, Shebin Elkom/Egypt
2Internal Medicine, Menofya University, Shebin Elkom/Egypt

Contact E-mail Address: dr_kareemmn@yahoo.com

Introduction: Hepatitis C virus (HCV) diminishes health related quality of life (HRQOL). Currently, there is no published data on assessing of the impact of treatment of chronic hepatitis C with the new antiviral drugs in old-aged patients. Aims & Methods: The aim is to study the effect of treatment of chronic hepatitis C with the new antiviral drugs in old-aged patients in HRQOL. About 132 patients with chronic hepatitis C (cirrhotic and non-cirrhotic) were enrolled in the study. Age of patients was sixty years old and older. All patients were treated with sofosbuvir/daclatasvir with or without ribavirin for three months. The HRQOL was assessed with sickness impact profile scoring (SIP) before start of treatment, at end of treatment and after three months of end of treatment.

Results: Old chronic hepatitis C patients who were treated achieved primary virological response (SVR) (after 3 months of end of treatment) in about 96% of treated patients. Before treatment, patients with chronic hepatitis C had worse scores especially in work, sleep, rest and recreation and pastimes categories. After treatment, patients who received sofosbuvir/daclatasvir with or without ribavirin had significant improve in work, sleep, rest and recreation and pastimes categories with p-value 0.001. Numerical improvement was observed in total score, physical and psychosocial dimension scores. In patients with SVR, the most improvement was in work and psychosocial dimension scores. There was no significant difference in SIP between scores after end of treatment and after 3 months of end of treatment.

Conclusion: Treatment of chronic hepatitis C in old-aged patients had a significant improvement in HRQOL.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
**PO046 EGY FIBRO-MARK: A PANEL OF ACCURATE LABORATORIES' PARAMETERS FOR IDENTIFICATION HEPATITIS FIBROSIS PROGRESSION IN PATIENTS WITH CHRONIC HEPATITIS C**

D. Omran1, A. M. Attallah2, M. Omran2, R. Zayed3, S. Saif4, A. Farid1, M. Hassany1, A. Yosry1
1Department Of Endemic Medicine And Hepato-gastroenterology, Faculty of Medicine, Cairo University, Cairo/Egypt
2Research & Development Department, Biotechnology Research Center, New Damietta/Egypt
3Helwan University, Cairo/Egypt
4Cairo University, Cairo/Egypt
5National Hepatology and Tropical Medicine Research Institute, Cairo/Egypt

Contact E-mail Address: daliaomran@kasralainy.edu.eg

**Introduction:** Accurate determination of the degree of hepatic-fibrosis is mandatory not only for the diagnosis and prognosis of disease, but also for deciding on the antiviral treatment. Indeed, many studies have been dedicated to the search of non-invasive fibrosis markers capable of providing an accurate information about hepatic fibrosis stage in patients with chronic hepatitis C (CHC). Direct and indirect markers of hepatic fibrosis are useful for prediction of liver cirrhosis but have limited accuracy for the diagnosis of significant fibrosis. Therefore, the development of more advanced scores combining both direct and indirect markers may improve their diagnostic accuracy.

**Aims & Methods:** This work is concerned with determining the levels of some of fibrosis markers, which are directly involved in deposition and removal of extra-cellular matrix (ECM), together with other indirect fibrosis markers so as to construct a predictive score capable of identifying the presence of significant fibrosis with a high degree of accuracy. Then, we aimed to estimate its performance against that of the other simple noninvasive tests in chronic hepatitis C patients.

**Material and Methods:** A total of 148 Egyptian HCV patients were subjected to routine laboratory workup in addition to estimation of serum AFP, hyaluronic acid (HA), platelet-derived growth factor (PDGF), tissue inhibitor of metallo-proteinase-1 (TIMP-1) and collagen IV. According to fibroscan, patients were classified into those with non-significant fibrosis (F < 2) and significant fibrosis (F ≥ 2).

**Results:** Based on univariate analysis, ten variables were significantly higher in patients with significant fibrosis. Patients with F2-F4 had 2.08-fold, 2.14-fold, 1.80-fold and 1.90-fold increase in the concentrations of collagen IV, HA, PDGF and TIMP-1, respectively. Multivariate regression demonstrated that only age, AFP, PDGF, collagen IV and TIMP-1 retained significance. Therefore, a five-marker named score Egypt (EGY) Fibro-mark (FM) was developed. A significant correlation was found between its candidate markers and liver fibrosis progression. AFP was found to have highest correlation (r = 0.47, P < 0.0001) followed by collagen IV (r = 0.46, P < 0.0001), Age (r = 0.43, P < 0.0001), TIMP-1 (r = 0.40, P < 0.0001) and PDGF (r = 0.40, P < 0.0001). ROC curve was used to estimate and compare the diagnostic accuracy of these candidate variables. As a consequence, these markers were in a decreasing rank: AFP ≥ collagen IV ≥ AGE ≥ TIMP-1 and PDGF (AUC 0.79), collagen IV (AUC 0.78), Age (AUC 0.76), TIMP-1 and PDGF (AUC 0.75). Additionally, Bivariate Spearman’s rank correlation coefficient between EGY-FM and its candidate markers was determined for estimating the impact of each marker on the predictive criteria. The diagnostic value of Egy FM was then assessed by ROC curve showing an AUC of 0.89 for diagnosing significant fibrosis at an optimal cut-off point of 4.05 with 77% sensitivity, 84% specificity, 1.80% accuracy (95% CI)

**Table 1:** The correlation of each score to hepatic fibrosis progression

<table>
<thead>
<tr>
<th>Index</th>
<th>AUC</th>
<th>Cutoff</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibro-mark</td>
<td>0.89</td>
<td>&gt;4.05</td>
<td>77</td>
<td>83</td>
<td>79</td>
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<tr>
<td>BRCC score a (47)</td>
<td>0.83</td>
<td>&gt;7.2</td>
<td>97</td>
<td>30</td>
<td>76</td>
</tr>
<tr>
<td>FRT /C (38)</td>
<td>0.82</td>
<td>&gt;4.0</td>
<td>99</td>
<td>11</td>
<td>69</td>
</tr>
<tr>
<td>King's score (41)</td>
<td>0.82</td>
<td>≥12.3</td>
<td>94</td>
<td>45</td>
<td>79</td>
</tr>
<tr>
<td>APRI (42)</td>
<td>0.80</td>
<td>&gt;1.5</td>
<td>29</td>
<td>94</td>
<td>50</td>
</tr>
<tr>
<td>Fibro-score (43)</td>
<td>0.70</td>
<td>&gt;1.28</td>
<td>95</td>
<td>19</td>
<td>72</td>
</tr>
<tr>
<td>FibroQ (46)</td>
<td>0.63</td>
<td>&gt;1.6</td>
<td>93</td>
<td>13</td>
<td>69</td>
</tr>
</tbody>
</table>

**Conclusion:** Egy Fibro-mark (FM) score, a more sophisticated score combining ‘direct’ and ‘indirect’ markers, is a useful tool to improve the staging of liver fibrosis in CHC patients and seems more efficient than FRT, King’s score, APRI. Fibro-score and FibroQ in this group of Egyptian patients.

**Acknowledgment** This study was supported by the science and technology development fund (STDF); Project ID: 5380, basic and applied research.

**Disclosure of Interest:** D. Omran: This study was supported by the science and technology development fund (STDF), Egypt; Project ID: 5380, basic and applied research. All other authors have declared no conflicts of interest.

**Reference**

**PO047 EXTRACELLULAR MATRIX PROTEINS CIRCULATING LEVELS SUBSTANTIATE THE EFFECT OF IL-28B RS12979860 T ALLELE ON FIBROSIS STAGE OF CHRONIC HEPATITIS C TYPE 4**

D. Omran1, A. M. Attallah2, M. Omran2, R. Zayed3, R. El Essawy4, S. Saif4, A. Farid5, M. Hassany5, A. Yosry1
1Department Of Endemic Medicine And Hepato-gastroenterology, Faculty of Medicine, Cairo University, Cairo/Egypt
2Research & Development Department, Biotechnology Research Center, New Damietta/Egypt
3Helwan University, Cairo/Egypt
4Cairo University, Cairo/Egypt
5National Hepatology and Tropical Medicine Research Institute, Cairo/Egypt

Contact E-mail Address: daliaomran@kasralainy.edu.eg

**Introduction:** In patients with chronic hepatitis C, host genetics influence liver fibrosis, particularly modulates in genes controlling the inflammatory and immune response pathways. In this context, interleukin 28B (IL-28B) rs12979860 single-nucleotide polymorphisms (SNP) is considered the most important. Controversial data suggests that IL-28B SNP relate to the severity of hepatic histology. Some studies showed that rs12979860 C allele may be associated with greater hepatic inflammation, higher alanine aminotransferase levels and increased risk of worse clinical outcomes, other studies have not found this association. Furthermore, other studies found that the T allele affects the severity of liver fibrosis and had a mean staging score higher than other genotypes. Else, none of the previous studies concerned the association between the IL-28B SNP and signs of fibrosis severity.

**Aims & Methods:** We aimed to evaluate the cirrhotic development in C/T genotypes using FibroScan, extracellular matrix (ECM) proteins and the model for end-stage liver disease (MELD) in order to resolve conundrum regarding the association between interleukin 28B (IL-28B) rs12979860 and disease severity in chronic hepatitis C (CHC). So we assessed the allelic and genotypic frequencies of IL-28B rs12979860 in 272 HCV-infected Egyptian individuals; investigate serum levels of ECM proteins, including hyaluronic acid (HA), laminin, collagen type IV and the N-terminal pro-peptide of collagen type III (PHINP) as well as its association with liver fibrosis, as assessed by FibroScan, in different IL-28B rs12979860 genotypes; From another view, if C allele has a protective role, we expected that the C/C genotype increases cirrhosis, whereas, if the T allele is associated with liver fibrosis progression we expect that the T/T genotype increases cirrhosis behavior using FibroScan, ECM proteins and the MELD score between C/T IL-28B genotypes and evaluate the diagnostic performance of Fibroscan and these ECM proteins in IL-28B rs12979860 genotypes.

**Results:** IL-28B rs12979860 CT genotype is the commonest genotype among patients constituting ≈73% of the studied sample. The CC and TT genotypes constituted ≈18% and ≈9% respectively. Liver cirrhosis percentage increased with the increasing number of T alleles as it was 10%, 52% and 96% in CC, CT and TT genotypes, respectively. FibroScan values (kPa) gave a strong positive correlation (r = 0.6; P < 0.0001) with IL-28B polymorphism. Similar to FibroScan, HA, laminin (r = 0.3), collagen IV (r = 0.4) and PHINP (r = 0.4) serum levels showed significant (P < 0.0001) positive associations with IL-28B polymorphism. There was stepwise increase in the values of fibroscan and ECM proteins from CC to TT genotypes, so that elevated ECM proteins serum levels were associated with the presence of IL-28B T allele. (Table). In comparison with CC genotype, IL-28B rs12979860 T allele had a significant 2.4-fold increase (in case of CT) and 4.7-fold increase (in case of TT) in Fibroscan score values (kPa). The same was true for ECM proteins serum levels. Interestingly, the characteristics of the cirrhotic patients with TT genotype were completely different from the cirrhotic patients with CT genotype as assessed with FibroScan, ECM proteins and MELD score. Among cirrhotic patients, liver stiffness was 31.13 ± 2.78 kPa in TT genotype vs 20.96 ± 0.74 kPa in CT genotype. MELD was 9.6 ± 0.73 in TT genotype vs 3.9 ± 0.41 in CT genotype and ECM proteins were significantly (P < 0.0001) higher in patients with TT than CT genotype. AUC values for FibroScan, HA, laminin, collagen IV and PHINP serum levels to differentiate CC from other IL-28B genotypes were 0.91, 0.85, 0.82 and 0.82, respectively. These values rise to 1.0, 0.97, 0.93, 0.98 and 0.93, respectively, when comparing CC to only TT genotype.
I. Kabbash5, A. Fouad3, M. Eltabbakh3, Z. Ali-Eldin6, M. Wifi7, M. El-Serafy8,

(DAAs) needs to be investigated in real world treatment settings in Egypt to transaminases represent a category of patients with mild and slowly progressive Chronic hepatitis C virus (CHCV) patients with persistently normal enzymes in real-world Egyptian cohort. Data of CHCV genotype 4 patients

Contact E-mail Address: med.b.dean@azhar.edu.eg

Introduction: Recently, new direct antiviral agents (DAAs) with different mechanisms of action have been developed to provide much more efficacious and better-tolerated therapeutic strategies for treatment patients with hepatitis C virus (HCV) infection. Several clinical trials have investigated a 12-week therapy with fixed dose of all-oral three-drug combination of daclatasvir (DCV), a potent pan-genotypic nonstructural protein 5A (NS5A) inhibitor, in 60 mg once daily; asunaprevir (ASV), an NS3 protease inhibitor, in 200 mg twice daily; and beclabuvir (BCV), a non-nucleoside NS5B thumb-1 polymerase inhibitor, in 75 mg twice daily (BCV-TRIO) for treatment of patients with HCV genotype 1 infection.

Conclusion: We aimed to report the efficacy of 5 different DAAs regimens for treatment of CHCV genotype 4 patients with persistently normal liver enzymes in real-world Egyptian cohort. Data of CHCV genotype 4 patients with normal liver enzymes who started treatment with different DAAs between September and September 2016 in a single specialized viral hepatitis treatment center in Egypt were retrieved. Treatment regimens included: Pegylated RBV combination was the most effective among the studied regimens. SOF/DCV/RBV, (SOF/RBV) and (SOF/SIM) respectively.

Table 1: Distribution of different fibrosis markers in IL-28B CC, CT and TT genotypes

Table 2: Distribution of different fibrosis markers in IL-28B CC, CT and TT genotypes

P0049 THE SAFETY AND EFFICACY OF THE COMBINATION OF DACLATASVIR, ASUNAPEVIR, AND BECLABUVIR IN THE TREATMENT OF CHRONIC HEPATITIS C VIRUS GENOTYPE 1 INFECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

A.M. Ahmed1, M.F. Doheim2, O.M. Mattar3, N.A. Shiri4, D.H. Truong5, P.T.L. Hoa6, K. Hirayama7, N.T. Huy8

1Department of Medicine, Al-Azhar University, Cairo/Egypt
2Faculty of Medicine, Alexandria University, Alexandria/Egypt
3Kas Alainy Faculty of Medicine, Cairo/Egypt
4Faculty of Medicine, Mansoura University, Mansoura/Egypt
5Institute of Tropical Medicine (NEKKEN), Leading Graduate School Program, and Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki/Japan
6Department of Clinical Product Development, Institute of Tropical Medicine (NEKKEN), Leading Graduate School Program, and Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki/Japan

Introduction: Chronic hepatitis C virus (CHCV) patients with persistently normal transaminases represent a category of patients with mild and slowly progressive disease. Proper management of these patients with direct acting antivirals (DAAs) needs to be investigated in real world treatment settings in Egypt to further validate the accumulating data of the achieved high sustained virologic response (SVR) rates with the use of these drugs in clinical trials.

Aims & Methods: We aimed to report the efficacy of 5 different DAAs regimens for treatment of CHCV genotype 4 patients with persistently normal liver enzymes in real-world Egyptian cohort. Data of CHCV genotype 4 patients with normal liver enzymes who started treatment with different DAAs between September and September 2016 in a single specialized viral hepatitis treatment center in Egypt were retrieved. Treatment regimens included: Pegylated interferon alpha 2b/Sofosbuvir/Ribavirin (PEG/SOF/RBV), Sofosbuvir/ Daclatasvir (SOF/DCV), Sofosbuvir/Ribavirin (SOF/RBV) and Sofosbuvir/Simeprevir (SOF/SIM).

Results: Of the included 1149 patients (562 males and 587 females). 158 patients were treatment experienced (13.75%) and 146 patients (12.7%) had liver cirrhosis. Regarding the used treatment regimens; 244 (21%) patients were treated with PEG/SOF/RBV, 382 (33.5%) with SOF/DCV, 152 (13.5%) with SOF/DCV/RBV, 117 (10%) with SOF/RBV and 254 (22%) with SOF/SIM. The overall SVR rate was 97.5% while the SVR rates for different regimens were: 94.7%, 97.7%, 100%, 91.5% and 98% for (PEG/SOF/RBV), (SOF/DCV), (SOF/DCV/RBV), (SOF/RBV) and (SOF/SIM) respectively.

Conclusion: Different DAAs achieved high SVR rates in treating CHCV genotype 4 with normal liver enzymes in a real-world cohort from Egypt. SOF/DCV/RBV combination was the most effective among the studied regimens.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0050 GENETIC EPIDEMIOLOGY OF HCV INFECTION IN UPPER & LOWER EGYPT: A MULTICENTRE FAMILY-BASED STUDY


1Tropical Medicine And Hepatology, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egyptn
2Medical Biochemistry, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egyptn
3Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egypt
4University Hospital, Ain Shams Faculty of Medicine, Cairo/Egypt
5Al-Badawy Family Medicine Clinic, Delmenho, Delmenho; Egypt
6Department Of Epidemiology And Public Health, Faculty Of Medicine, Cairo University
7Tropical Medicine And Hepatology, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egypt
8Ministry of Research, Cairo/Egypt

Contact E-mail Address: mmelbendary@gmail.com

Introduction: Egypt has the highest prevalence of HCV worldwide. Prevalence of HCV was reported to be 13.9% among healthy populations. Adults have higher HCV prevalence (15.7%) than children (4%). Geographically, HCV is highly prevalent in the Nile delta (15.8%) than in Upper Egypt (9.02%). The household contacts of HCV seropositive patients had been shown to have a high risk of HCV infection.

Aims & Methods: The aim of this study was to determine the prevalence of HCV infection among household contacts of HCV seropositive index patients. We also aimed to compare HCV genotyping distribution in upper and lower Egypt.

In this multicentre hospital case control based study a total of 4894 Egyptian individual cases were recruited to the hospitals from different Egyptian population in Upper & Lower Egypt (mainly from Dakahlia, Cairo and Assuit governorates). The index HCV patients were 1106 cases whereas the families or close household contact of these index cases were 3788 cases. Ideally family was selected on the basis of containing at least one positive HCV index, one positive HCV member and other one negative HCV member with no history of any liver complications (first and second degree consanguinity, living and sharing usual family activity and having at least 15 years of exposure to the index case). The positive cases (index or contact cases) in the family were selected with inclusion criteria of 1-HCV positive by PCR RNA > 6 months, 2-Adults (above 18 years) of both sexes 3-Any stage of HCV related liver diseases. While cases were diagnosed as spontaneously cleared the virus (SVC) based on the following criteria: positive Anti-HCV but negative PCR HCV RNA in 2 successive samples at least 6 months apart with no prior history of antiviral therapy. Each participant was subjected to routine clinical and laboratory investigations in addition to molecular diagnosis and PCR HCV to confirm HCV infection. Sequencing analysis of the HCV PCR was performed using ABI Prism 310 Genetic Analyzer (PE Applied Biosystems, Germany). The sequencing reaction was performed using Big Dye Deoxy Terminator method as recommended by the manufacturer (PE Applied Biosystems). Genotypes were determined according to the published reference sequences.

Results: The prevalence of Anti-HCV +ve cases among household contacts was 20.71% but when PCR HCV was performed only 17.83% were +ve while 2.9% were spontaneously cleared the virus (SVC). The HCV prevalence among house hold contacts was 17.29% & 19.17% while the SVC was 2.4% & 11.8% in lower & Upper Egypt respectively. When the genotyping of the positive cases were performed it was found that the following pattern was noticed in the upper & lower Egypt respectively: genotype 4a (90.3% & 70.1%), 4m (4.8% & 11.8%) 4n (0.5% & 3.2%) 4e (0.2% & 2.9%) 4d (0.5% & 1.9%) 4c (0.8% & 1.2%) & 1a (2.9% & 8.3%) as shown in the following table.

<table>
<thead>
<tr>
<th>HCV genotype</th>
<th>Upper Egypt (%)</th>
<th>Lower Egypt (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a</td>
<td>90.3</td>
<td>70.1</td>
</tr>
<tr>
<td>4m</td>
<td>4.8</td>
<td>11.8</td>
</tr>
<tr>
<td>4n</td>
<td>0.5</td>
<td>3.2</td>
</tr>
<tr>
<td>4e</td>
<td>0.2</td>
<td>2.9</td>
</tr>
<tr>
<td>4d</td>
<td>0.5</td>
<td>1.9</td>
</tr>
<tr>
<td>4c</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>1a</td>
<td>2.9</td>
<td>8.3</td>
</tr>
<tr>
<td>1g</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>1b</td>
<td>0.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Conclusion: The prevalence of HCV was found to be 18.5% among household contacts of Egyptian families. The genotype 4 was predominant in upper Egypt (97.1%) more than lower Egypt (91.7%). On the other hand genotype 1a was higher in lower Egypt (8.3%) more than upper Egypt (2.9%).

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0051 RED BLOOD CELL DISTRIBUTION WIDTH (RDW) AS NON INVASIVE PREDICTOR OF LIVER FIBROSIS IN CHRONIC HEPATITIS C PATIENTS GENOTYPE 4

M. El-Bendary1, K. Farid1, D. El-Barber2, M. Elnagar2
1Tropical Medicine And Hepatology, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egypt
2Department Of Internal Medicine, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egypt
3Microbiology Department, Mansoura Faculty of Medicine-Mansoura University, Mansoura/Egypt

Contact E-mail Address: mmelbendary@gmail.com

Introduction: Red blood cell distribution width (RDW) is a numerical measure of the variability in size of red cell Reflects variability in the size of circulating red blood cells. RDW can be used as a prognostic marker in heart failure. In hepatic patients it was approved to be an independent predictor of liver fibrosis in patients with chronic HBV infection, and it is higher in patients with alcoholic liver disease and non alcoholic liver cirrhosis. The gold standard for assessing the histological out come of liver disease is liver biopsy. This procedure is costly and carries a small risk of complications due to sampling error, invasiveness and requires hospitalization of at least 6-18h. These limitations have stimulated the development of non- invasive techniques for assessing the presence and the degree of liver fibrosis. Several laboratory scores composed of routine laboratory markers that are readily available have been proposed for non-invasive prediction of liver fibrosis in chronic hepatitis C (CHC) patients.

Aims & Methods: The aim of this work is to use RDW as a marker for non-invasive prediction of the stage of hepatic fibrosis in patients with chronic hepatitis C genotype4. 100 patients with chronic hepatitis C were subjected to routine clinical and laboratory investigations in addition to molecular diagnosis and PCR HCV to confirm HCV infection. Sequencing analysis of the HCV PCR was performed using ABI Prism 310 Genetic Analyzer (PE Applied Biosystems, Germany). The sequencing reaction was performed using Big Dye Deoxy Terminator method as recommended by the manufacturer (PE Applied Biosystems). Genotypes were determined according to the published reference sequences.

Results: The prevalence of Anti-HCV +ve cases among household contacts was 20.71% but when PCR HCV was performed only 17.83% were +ve while 2.9% were spontaneously cleared the virus (SVC). The HCV prevalence among house hold contacts was 17.29% & 19.17% while the SVC was 2.4% & 11.8% in lower & Upper Egypt respectively. When the genotyping of the positive cases were performed it was found that the following pattern was noticed in the upper & lower Egypt respectively: genotype 4a (90.3% & 70.1%), 4m (4.8% & 11.8%) 4n (0.5% & 3.2%) 4e (0.2% & 2.9%) 4d (0.5% & 1.9%) 4c (0.8% & 1.2%) & 1a (2.9% & 8.3%) as shown in the following table.

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<tr>
<td>4e</td>
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<td>1.9</td>
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<tr>
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<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>1a</td>
<td>2.9</td>
<td>8.3</td>
</tr>
<tr>
<td>1g</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>1b</td>
<td>0.0</td>
<td>0.3</td>
</tr>
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</table>

Conclusion: The prevalence of HCV was found to be 18.5% among household contacts of Egyptian families. The genotype 4 was predominant in upper Egypt (97.1%) more than lower Egypt (91.7%). On the other hand genotype 1a was higher in lower Egypt (8.3%) more than upper Egypt (2.9%).

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

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P0052 CANCER INCIDENCE IN VARIOUS ORGANS OTHER THAN THE LIVER FOLLOWING DIRECT-ACTING ANTIVIRAL (DAA) THERAPY FOR HEPATITIS C

1Dept Of Gastroenterology, Kyoto Medical Center, Kyoto/Japan
2Dept Of Gastroenterology, Kyoto Medical Center, Japan, Kyoto/Japan
3Department Of Gastroenterology, National Hospital Organization Kyoto Medical Center, Kyoto/Japan
4Department Of Gastroenterology, Kyoto Medical Center, Japan, Kyoto/Japan
5Department Of Gastroenterology, Kyoto Medical Center, Kyoto/Japan

Contact E-mail Address: b-endoh@umin.ac.jp

Introduction: The incidence of liver cancer and its recurrence have been reported frequently at an early stage in patients who underwent interferon (IFN)-free direct-acting antiviral (DAA) therapy [1]. The underlying mechanisms of
cancer incidence following DAA therapy may include the rapid clearance of hepatitis C virus, reconstitution of the immune system, and reduction of cancer immunosurveillance [2]. These changes may in fact have an impact on the development of cancer in other organs.

**Aims & Methods** We conducted a retrospective analysis to compare the cancer incidence in patients treated with IFN-free DAA therapy with those treated with IFN therapy. All patients who achieved sustained viral response following antiviral therapy between 1992 and 2016 in our hospital were investigated retrospectively. Patient records were examined to identify new cases of cancer, as defined by pathology or medical imaging, in organs other than the liver following antiviral therapy. The date of diagnosis was determined based on the records, and the cancer incidence was compared between patients treated with DAA therapy and those treated with IFN therapy using the Kaplan-Meier method. Patients with recurrent cancer were excluded from the analysis. Propensity score analysis followed by inverse probability of treatment weighting (IPTW) was used to correct for the effects of confounding factors.

**Results** There was a significant difference in the age and sex of the patients treated with DAA (n = 324, median age: 70, male: 41%) and those treated with IFN (n = 445, median age: 58, male: 60%). Median lengths of the observation period for the DAA and IFN groups were 1.3 and 6.2 years, respectively. There were 12 and 23 cases of cancer occurring in organs other than the liver in the DAA and IFN groups, respectively. These cancer cases occurred mainly in the gastrointestinal tract, followed by the urinary organs, hematopoietic organs, biliary tract/pancreas, lungs, and other organs. The median periods from the start of the antiviral therapy to the time of diagnosis were 0.9 and 6.8 years in the DAA and IFN groups, respectively. Cumulative rates of cancer after 1 and 2 years were 3.0 and 5.0% for the DAA group, and 0.2 and 0.9% for the IFN group, respectively. The difference between the groups was significant (p = 0.02) based on Cox regression analysis using IPTW.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Hazard Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFN (Ref.)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DAA</td>
<td>4.49</td>
<td>1.26–15.96</td>
</tr>
</tbody>
</table>

**Conclusion:** Because cancer detection in organs other than the liver can be challenging in management of hepatitis, some cases with cancer found after the treatment might have been diagnosable before the treatment, possibly leading to an overestimation of the incidence after the treatment. The number of newly diagnosed cancer cases was small in the present study, resulting in a low statistical power. Nevertheless, the cancer incidence in organs other than the liver was significantly higher in patients treated with DAA therapy than those treated with IFN therapy. This difference persisted after correcting for possible confounding factors and sex of the patients. Our findings suggest that patients need to be carefully examined after DAA therapy for the development of cancer in various organs, including but not limited to the liver.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P0054** *IS THERE AN INCREASE IN THE INCIDENCE OF HEPATOCELLULAR CARCINOMA IN CIRRHOTIC PATIENTS WITH HEPATITIS C TREATED WITH THE DIRECT-ACTING ANTIVIRALS?*

J. C. Branco, R. Carvalho, S. Alberto, A. Martins

Gastroenterology, Hospital Professor Doutor Fernando Fonseca, Lisboa/Portugal

**Contact E-mail Address:** ebranco,joana@gmail.com

**Introduction:** The impact of the virological cure on the evolution of cirrhotic patients treated with direct-acting antiviral agents (DAA) has been recently evaluated. Recently, some papers reported an elevated incidence of recurrence of hepatocellular carcinoma (HCC) and others a possible rise on the de novo incidence of HCC in the first year after treatment with DAA, but not others.

**Aims & Methods:** This is a prospective study of cirrhotic patients treated with DAA between February/2015 and January/2017, under HCC screening with ultrasoundography according to international guidelines. The main endpoint of the study was to determine the incidence of “de novo” and recurrent HCC. The secondary endpoint was to search for possible predictive factors associated with the occurrence of HCC. Statistical analysis performed on SPSSv.24. Results: 106 cirrhotics (73% mean; 54.5 ± 8.8 years), MELD 7.3 ± 2.6, 60% with portal hypertension (n = 64) and 22% with decompensated cirrhosis (n = 23, 22 Child-Pugh B). Two patients with previous HCC, stage Barcelona Clinic Liver Classification (BCLC) A, invasive after loco-regional treatment. The sustained virological response at week 12 was 89.9% (71/79); 4 deaths, 1 relapse, 1 therapeutic failure and 2 losses to follow-up (FU). In 11 ± 7 months of FU, we registered 4 cases of HCC, 4 “de novo” and 1 recurrence, which corresponded to an incidence of 3.8% of “de novo” HCC (13% in decompensated cirrhosis). The BCLC staging was: stage A, 2 stage B, 2 stage C and the one with the recurrence was stage D. A Child-Pugh B class (p = 0.004), low platelets level (p = 0.001) and hospitalization for decompensation (p = 0.045) were associated with the occurrence of HCC; the genotype did not have association. The mean time to HCC development was 7.5 months (2–14).
The regulation of miR-506 gene expression and its role in exchanger 2 (AE2) and type III inositol 1, 4, 5-trisphosphate receptor were transfected in human cholangiocytes (H69 cells) and the role of pro-sizes of miR-506 promoter were cloned in a luciferase expression vector, which were expressed in PBC cholangiocytes and directly targets both Cl–/HCO3– transporter and PDC-E2. MicroRNA (miR) dysregulation and PDC-E2 overexpression is a common feature. MicroRNA (miR) dysregulation and PDC-E2 overexpression is a common feature. miR-506 induces dedifferentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; (ii) miR-506 overexpression increases oxidative and endoplasmic reticulum (ER) stress; (iii) caused DNA damage; and (vi) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and ATP reduction) and PDC-E2 overexpression. Co-culture of miR-506 over expressing cholangiocytes with PBC immune cells induced immunocyte activation and proliferation of PBC immune cells.

Conclusion: Different pro-inflammatory cytokines enhance the expression of miR-506 in biliary epithelial cells. MiR-506 induces PBC-like features in cholangiocytes and promotes immune activation, representing a potential therapeutic target for PBC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1Liver And Gastrointestinal Diseases, Biodonostia Research Institute- Donostia University Hospital- UPV/EHU, San Sebastian/Spain
2Sorbonne Universités, UPMC Univ Paris 06, INSERM, Saint-Antoine Research Institute, Paris, Paris/France
3Herbasque, Basque Foundation for Science, Bilbao/Spain
4Division Of Hepatology, CIMA of the University of Navarra, Pamplona/Spain
5Proteo-ictis, Proteomics Unit, NavarreBiomedical, Navarra Health Department, Public University of Navarra, Navarra Institute for Health Research (AsNA), Pamplona/Spain
6Cic Biogune, Bizkaia Technology Park, Donostia/Spain
7Ciberonc, Carlos III National Institute of Health, Madrid/Spain
8Liver Center, Yale University School of Medicine, New Haven/United States of America/CACT
9Department Of Gastroenterology, Università Politecnica delle Marche, Ancona/Italy
10Ciberedal, Carlos III National Institute of Health, Madrid/Spain
11Gastroenterology And Hepatology, AMC • Gastroenterology and Hepatology, AMC; Amsterdam/NL, Amsterdam/Netherlands
12Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States/Minnesota/US
13Experimental Hepatology And Drug Targeting, Biomedical Research Institute of Salamanca, Salamanca/Spain
Contact E-mail Address: jesus.baules@biodonostia.org

Introduction: Primary biliary cholangitis (PBC) is a chronic cholestatic liver disease associated with autoimmune phenomena targeting intrahepatic bile duct cells. PBC is a disease through PBC etiopathogenesis remains still obscure, development of anti-mitochondrial auto-antibodies against pyruvate dehydrogenase complex-E2 (PDC-E2) is a common feature. MicroRNA (miR) dysregulation occurs in liver and immune cells of PBC patients, but their functional relevance is largely unknown. We previously reported that miR-506 is overexpressed in PBC cholangiocytes and directly targets both Cl–/HCO3– exchanger 2 (AE2) and type III inositol 1, 4, 5-trisphosphate receptor (InsP3R3), leading to cholangitis.

Aims & Methods: The regulation of miR-506 gene expression and its role in cholangiocyte pathophysiology and immune activation was studied. Different sizes of miR-506 promoter were cloned in a luciferase expression vector, which were transfected in human cholangiocytes (H69 cells) and the role of pro-inflammatory cytokines, bile acids, estrogens and glucocorticoids was evaluated on the promoter activities. MiR-506 or a negative control miRNA sequence were also cloned in an expression vector under the regulation of the CMV promoter; these constructs were stably transfected in H69 human cholangiocytes, and cholangiocyte pathophysiology and immune activation were evaluated. Experimental overexpression of miR-506 in cholangiocytes dysregulated the cell proteomic profile (by mass spectrometry) affecting proteins involved in different biological processes including mitochondrial metabolism. In cholangiocytes, miR-506: (i) induced differentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; (ii) induced oxidative and endoplasmatic reticulum (ER) stress; (iii) caused DNA damage; and (iv) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and ATP reduction) and PDC-E2 overexpression. Co-culture of miR-506 overexpressing cholangiocytes with PBC immune cells induced immune activation and proliferation of PBC immune cells.

Conclusion: Different pro-inflammatory cytokines enhance the expression of miR-506 in biliary epithelial cells. MiR-506 induces PBC-like features in cholangiocytes and promotes immune activation, representing a potential therapeutic target for PBC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: The study population consisted of 106 men and 94 women with a mean age of 64.6±14.4 kg/m². The median age of F0, F1, F2, F3 and F4 were 1.33, 1.57, 1.73, 1.95, 1.98, respectively. The median IQR/median was 0.21. Furthermore, we formed the group into one F0-F1. The obtained results of shear wave elastography were presented in the form of quantilicative variables. Median stiffness with interquartile range (25%-75%) in groups: F0 - F1-5, 4 (4, 8-7, 2) kPa, F2-8, 5 (3, 8-9, 8) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. The parameters of liver elastometry in the various groups on the METAVIR scale differed statistically significantly between p < 0.05. When carrying out a correlation analysis between the stiffness indices of the liver parenchyma and the morphological stage of fibrosis, a strong correlation was revealed: the Spearman coefficient was r = 0.16 (p = 0.01). Cutoff value for the general group was: F0-75; F1-13, 25; F4-14, 9 kPa. In 10 patients, results for SWE differed from morphological conclusion. Analyzing reasons we observed that in 8 (80%) patients there was NAFLD and in 6 cases more than 66% was. To study fatty dystrophy impact on elastographic values we examined patients with the given disease (16 patients) from the secondary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1-5, 4 (4, 5-5, 6) kPa, F2-8, 5 (3, 8-9, 5) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. According to ROC analysis, threshold values for lesions F2-7, 3 mm²/s; F3-9, 8; F4-14, 9 kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r =0.11 p=0.246214.

Conclusion: Quantitative indicators of SWE in patients with diffuse liver disease in correlation with steatosis is more than in patients without the given disease (16 patients) from the secondary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1-5, 4 (4, 5-5, 6) kPa, F2-8, 5 (3, 8-9, 5) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. According to ROC analysis, threshold values for lesions F2-7, 3 mm²/s; F3-9, 8; F4-14, 9 kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r =0.11 p=0.246214.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0059 NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) AND THE EFFECTS OF SHEAR WAVE ELASTOGRAPHY FOR HEPATIC FIBROSIS STAGING

A. Katrich1, A. Okhotina1, O. Ponkina2, N. Ryabin2
1Ultrasound Diagnostic, State Public Health Budget Institution ‘Scientific Research Institute - Ochapovsky Regional Clinic H, Krasnodar/Russian Federation
2State Public Health Budget Institution ‘Scientific Research Institute - Ochapovsky Regional Clinic H, Krasnodar/Russian Federation

Contact E-mail Address: katrich1-a1@yandex.ru

Introduction: To study the effect of NAFLD on the results of shear wave elastography (SWE) in patients with chronic diffuse liver disease.

Aims & Methods: We have performed outcome analysis in 100 patients with chronic liver disease from 2015 to 2016. There were 41 male patients (41%), and 59 female patients (59%), age (Me (LQ-UQ)) 49 (39-56), minimal age 18 years, maximal age was 77 years. All patients were found to have chronic diffuse hepatic diseases and were hospitalized for morphological and functional investigation. All patients had shear wave elastography (SWE) with quantitative measure tissue stiffness, Metavir stage scoring for received results.

Results: Based on the obtained morphological results, we have formed the following subgroups of patients: F0 - F1-31 people, F2-9; F3-15 and F4-45 patients. Given that patients with a degree of fibrosis on the scale METAVIR F0 and F1 do not require active conservative therapy, we combined the data of the group into one F0-F1. The obtained results of shear wave elastography are presented in the form of quantilicative variables. Median stiffness with interquartile range (25%-75%) in groups: F0 - F1-5, 4 (4, 8-7, 2) kPa, F2-8, 5 (3, 8-9, 8) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. The parameters of liver elastometry in the various groups on the METAVIR scale differed statistically significantly between p < 0.05. When carrying out a correlation analysis between the stiffness indices of the liver parenchyma and the morphological stage of fibrosis, a strong correlation was revealed: the Spearman coefficient was r = 0.16 (p = 0.01). Cutoff value for the general group was: F0-75; F1-13, 25; F4-14, 9 kPa. In 10 patients, results for SWE differed from morphological conclusion. Analyzing reasons we observed that in 8 (80%) patients there was NAFLD and in 6 cases more than 66% was. To study fatty dystrophy impact on elastographic values we examined patients with the given disease (16 patients) from the secondary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1-5, 4 (4, 5-5, 6) kPa, F2-8, 5 (3, 8-9, 5) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. According to ROC analysis, threshold values for lesions F2-7, 3 mm²/s; F3-9, 8; F4-14, 9 kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r =0.11 p=0.246214.

Conclusion: Quantitative indicators of SWE in patients with diffuse liver disease in correlation with steatosis is more than in patients without the given disease (16 patients) from the secondary statistical processing. Stiffness median in patients without fatty hepatic degeneration was: F0 - F1-5, 4 (4, 5-5, 6) kPa, F2-8, 5 (3, 8-9, 5) kPa, F3-13, 5 (10, 1-14, 5) kPa and F4-22, 0 (18, 2-25, 5) kPa. According to ROC analysis, threshold values for lesions F2-7, 3 mm²/s; F3-9, 8; F4-14, 9 kPa. However, stage correlation for hepatic fatty disease with elastography results was none: r =0.11 p=0.246214.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0061 EXOSOMIC miR-224 REGULATED TUMOR INVASION AND MIGRATION THROUGH IL-6/STAT3 PATHWAY IN HEPATOCELLULAR CARCINOMA

F. An, D. Chen, Q. Zhan, M. Xia, X. Wu
Gastroenterology, West China University of Medical Science, Sichuan, China

Contact E-mail Address: wdl0825@163.com

Introduction: It was found regulated progression of liver cancer in our previous studies, IL-6/STAT3 pathway play key role, but the precise underlying mechanism remains to be explored. It was found exosomes are the vesicles released by the tumor cells into tumor microenvironment, they are a powerful diagnostic tool due to relative stability and composition covering the whole range of cancer-related biomarkers including proteins, metabolites, DNA, DNA modifications, coding and non coding RNA. Thus, study the roles of exosomic miRNA could be useful for therapy and prognosis prediction of hepatocellular carcinoma (HCC).

Aims & Methods: The expression of miR-224, IL-6, STAT3 and SMAD4 in tumor as well as adjacent tumor tissues of HCC were detected by RT-PCR. Tumor migration and invasion were induced by miR-224. The Exosome from the supernatant of HCC cells can be found translocated into HCC cells conversely, when the HCC cells were induced by miR-224. The Exosome from the supernatant of HCC cells was isolated and the translocation roles of exosome was studied in vivo, the up regulation of miR-224, IL-6/STAT3 and down regulation of SMAD4 were also found in the transplantation tumors which were induced by miR-224. The Exosome from the supernatant of HCC cells can be found translocated into HCC cells conversely, when the HCC cells were induced by IL-6, the overexpression of exosomic miR-224 and STAT3 and decrease of exosomic SMAD4 were detected. It was speculated miR-224 can regulated HCC progression through IL-6/STAT3/SMAD4 pathway by exosomic way.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0062 EXPRESSION ANALYSIS OF LIVER-SPECIFIC CIRCUITING MICRONAS IN HCV-INFECTED HEPATOCELLULAR CARCINOMA IN EGYPTIAN PATIENTS

L. Mourad1, E. El-Alwamy2, M. Zohery3, H. Abu-Taleb4, M. Hassan3, A. Abdel Rehim2, M. Hassan2, S. Zada1

1Biotechnology, The American University in Cairo, Cairo/Egypt
2Theodor Bilharz Research Institute, Cairo/Egypt

Contact E-mail Address: lobna.mourad@gmail.com

Introduction: The prevalence of hepatocellular carcinoma (HCC) in Africa is higher compared to the rest of the world due to the high incidence of chronic infection with hepatitis C virus (HCV). In Egypt, HCV infection is the leading cause of HCC, which is usually diagnosed at late stages. Due to the absence of reliable and accurate biomarkers for early detection of liver cancer, circulating microRNAs have recently emerged as great candidates for early diagnosis of HCC. These small non-coding RNA molecules are responsible for controlling gene expression and RNA stability. Therefore, the aim of this study is to investigate the potential of liver-specific circulating microRNAs as an accurate non-invasive diagnostic tool for the early detection of HCV-induced HCC.

Aims & Methods: Seven main microRNAs (miR-125a, miR-139, miR-34a, miR-221, miR-16, miR-145 and miR-199a) were selected due to their expression patterns in HCC as well as their contribution to the development of hepatocarcinogenesis. A total of 165 patients were enrolled in this study, from which serum samples were collected and categorized into four main patient groups: 42 Egyptian patients with hepatitis C (CHC) without cirrhosis, 45 CHC with hepatocellular carcinoma (HCC), 38 HCC with HCV patients, and 40 healthy controls. The expression profile of the seven microRNAs was evaluated using TaqMan real-time reverse transcription-polymerase chain reaction. Additionally, the conventional markers for HCC (α-fetoprotein (AFP) and des-γ-carboxyprothrombin (DCP)) were measured using commercial kits.

Results: Serum levels of miR-125a, miR-139, miR-145 and miR-199a were significantly decreased (p < 0.01) in HCC than in the CHC and LC groups (Table 1). On the other hand, miR-16 and miR-34a were significantly increased (p < 0.01) in HCC patients compared to the normal group. However, no significant difference was shown in the expression of miR-16, miR-34a, and miR-221 between the CHC, LC, and HCC groups. As a single biomarker, miR-34a showed the highest sensitivity and specificity among all microRNAs investigated, followed by miR-221, miR-125a, miR-139, miR-145, and miR-199a.

Table 1: Expression levels of serum microRNAs of the patient groups

<table>
<thead>
<tr>
<th>MicroRNAs</th>
<th>Normal</th>
<th>CHC</th>
<th>LC</th>
<th>HCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>miR-16</td>
<td>14.26 ± 0.69</td>
<td>23.29 ± 0.46</td>
<td>22.35 ± 0.54</td>
<td>23.94 ± 0.65</td>
</tr>
<tr>
<td>miR-34a</td>
<td>27.32 ± 0.19</td>
<td>30.04 ± 0.54</td>
<td>32.50 ± 0.94</td>
<td>31.04 ± 0.57</td>
</tr>
<tr>
<td>miR-221</td>
<td>22.82 ± 0.38</td>
<td>28.22 ± 0.41</td>
<td>28.51 ± 0.46</td>
<td>29.46 ± 0.57</td>
</tr>
<tr>
<td>miR-125</td>
<td>20.57 ± 0.54</td>
<td>100.54 ± 0.81</td>
<td>29.96 ± 0.57</td>
<td>96.01 ± 0.57</td>
</tr>
<tr>
<td>miR-139</td>
<td>29.96 ± 0.97</td>
<td>86.02 ± 0.40</td>
<td>30.03 ± 0.43</td>
<td>100.54 ± 0.81</td>
</tr>
<tr>
<td>miR-145</td>
<td>20.65 ± 0.52</td>
<td>80.74 ± 0.59</td>
<td>20.64 ± 0.57</td>
<td>100.54 ± 0.81</td>
</tr>
<tr>
<td>miR-199a</td>
<td>80.23 ± 0.72</td>
<td>330.38 ± 0.74</td>
<td>311.98 ± 0.72</td>
<td>66.16 ± 0.44</td>
</tr>
</tbody>
</table>

**p < 0.01 significant increase than control; *p < 0.01 significant decrease than CHC; #p < 0.01 significant decrease than control; &p < 0.01 significant decrease than CHC and LC; †p < 0.01 significant decrease than CHC

Conclusion: These results indicate that measuring the expression levels of liver-specific circulating microRNAs can be used as a reliable diagnostic and prognostic tool for HCC. Our results demonstrated that the up-regulation of miR-16, miR-34a, and miR-221 can differentiate between normal individuals and patients with liver disease ranging from fibrosis, cirrhosis, and HCC. Meanwhile, the noticeable down-regulation of miR-125a, miR-139, miR-145 and miR-199a in the HCC patient group indicates that these microRNAs can differentiate HCC from CHC and LC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: liaixiao@sysucc.org.cn

P0063 EPIGENETIC INACTIVATION OF METALLOTHIONEIN 1G IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

X. LI1, N. Zhang2, L. Xu1, G. Zhao3

1State Key Laboratory Of Oncology In South China, Sun Yat-sen University Cancer Center, Guangzhou/China
2Sun Yat-sen University, Guangzhou/China
3Inner Mongolia People's Hospital, Hohhot/China

Contact E-mail Address: lixiaox@sysucc.org.cn

Introduction: Primary hepatocellular carcinoma (HCC) is one of the most common malignancies all over the world. HCC is associated with poor prognosis. However, the mechanism of HCC initiation and development remains unclear. In our previous work, high-throughput microarray assay in collected clinical HCC samples followed by bioinformatic analysis suggested that Metallothionein 1G (MT1G) might be one of the key factors in HCC.

Aims & Methods: We detected the MT1G expression in paired HCC samples and HCC cell lines by RT-qPCR and Western blot. Then MSP (Methylation specific PCR) and BGS ( Bisulfite genomic sequencing) were performed to evaluate methylation status of MT1G in HCC. The functional significance of MT1G in HCC was investigated by overexpression or knockdown in HCC cell lines. The effects of MT1G re-expression were also determined by flow cytometry.

Results: MT1G was inactivated in all (6/6) HCC cell lines tested, but was readily expressed in immortalized liver cell line LO2. The expression of MT1G was
regulated in cancer tissues compared with the adjacent non-tumor tissues (E). The expression level of MT1G in the liver cancer tissues was closely correlated to the promoter hypermethylation status. The MT1G expression in silenced HCC cell lines could be restored by demethylating agent. We generated HCC cell lines overexpressed MT1G. Ectopic re-expression of MT1G by stable transfection in SMCC-7721 and HepG2 cells induced colony formation (P<0.001), suppressed cell motility and invasiveness (P<0.05), concomitant with up-regulation of E-cadherin; and down-regulation of PCNA, MMP2, MMP13 and Vimentin. The in vivo growth of HCC cells in nude mice was also markedly inhibited after stable expression of MT1G (P<0.001). MT1G over-expression in HCC cells induced the cell apoptosis (P<0.01).

Conclusion: Our results demonstrate that MT1G promoter methylation directly mediates the transcription down-regulation and commonly occurs in HCC. MT1G gene can act as a functional tumor suppressor in liver carcinogenesis by playing an important role in depression of cell proliferation, migration, inva-
sion, and induction of cell apoptosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0065 CUX1 CONTROLS ENDOPLASMIC RETICULUM STRESS AND AUTOPOPHAGY-RELATED CELL DEATH
G. Metzger1, P. Di Fazio2, D. Bartisch1, T. M. Gress2, T. T. Wissniowski2
1Department Of Visceral Thoracic And Vascular Surgery, Philippus University Marburg, Marburg/Germany
2Klinik Für Gastroenterologie, Endokrinologie, Stoffwechsel Und Infektionologie, Philippus Universität Marburg, Marburg/Germany

Contact E-mail Address: giulia_metzger@web.de
Introduction: CUX1 (CUTL1) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of proapoptotic genes. Its aberrant expression in tumor turns its role as foe.

Aims & Methods: Here, we analyze the role exerted by CUX1 during deacetylase inhibitors mediated cell death in liver cancer cells. CUX1, endoplasmic reticulum (ER) stress and autophagy markers were analyzed by RT-qPCR in two liver cancer cell lines HepG2 and Hep3B. Protein level was measured by western blotting. Cells were transfected with siRNA for CUX1 and furthermore treated with deacetylase inhibitors and autophagy activators.

Results: CUX1 knock down caused a suppression of ER stress and autophagy markers BIP, CHOP, ATF4, ATF6, Beclin1, MAP1LC3B, UVRAG and TFE2 at early time point (6 hours) in both cell lines. Prolonged transfection did not alter the expression of the above mentioned markers; BIP was the only one suppressed in HepG2 after 24 hours. Interestingly, the deacetylase inhibitors are able to promote CUX1 over-expression after 6 hours of treatment, whereas they show to lose this ability after 24 hours. CUX1 knock-down reduced significantly its protein level after treatment with deacetylase inhibitors. CUX1 knock down counteracts the accumulation of BIP protein after 24 hours of treatment with deacetylase inhibitors. Thapsigargin induced BIP independently from CUX1.

Conclusion: ER stress and autophagy markers are under the control of CUX1. The cell death induced by deacetylase inhibitors is strictly connected with CUX1 expression and activity. Further studies are needed to clarify the exact mechanism exerted by CUX1 in this scenario.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0066 CUX1 CONFRS RESISTANCE TO APOPTOTIC CELL DEATH IN LIVER CANCER CELLS
E. Hofmann1, P. Di Fazio1, D. Bartisch1, T. M. Gress2, T. T. Wissniowski2
1Department Of Visceral Thoracic And Vascular Surgery, Philippus University Marburg, Marburg/Germany
2Klinik Für Gastroenterologie, Endokrinologie, Stoffwechsel Und Infektionologie, Philippus Universität Marburg, Marburg/Germany

Contact E-mail Address: ellihofmann@yahoo.de
Introduction: CUX1 (CUTL1) is a transcription factor able to promote the cell death induced by deacetylase inhibitors, autophagy activators and apoptosis mediators. Its aberrant expression in tumor turns its role as foe.

Aims & Methods: Here, we analyze CUX1 activity in TRAIL (Tumour necrosis factor related apoptosis inducing ligand) mediated cell death in liver cancer cells. CUX1 was knocked down in HepG2 and Hep3B cells. Cells were further treated for 48 hours with a strong ligand (superkiller) binding DR4 and DR5 (TRAIL targets, hereafter TRAIL) and furthermore treated with siRNA for CUX1. The cell death was analyzed by FACS analysis. RT-qPCR was performed to detect the expression of apoptotic markers. Caspase activity was measured by luminescence. Apoptosis array was performed. Western blotting was performed for caspase 8 and Flip detection

Results: Treatment with superkiller TRAIL, at 50 and 100ng/ml, caused cell death in HepG2 and Hep3B cells after 48h proven by an accumulation of 40% of sub-G1 events. CUX1 knock down caused a sensitization of liver cancer cells to TRAIL effect by increasing, significantly, the percentage of sub-G1 events (60% with 100ng/ml). CUX1 knock down did not change the expression of TP53, KRT18, CDKN1A and CDKN1B. Interestingly, silencing CUX1 increased the activity of caspase 3/7 after treatment with soluble TRAIL. The effect was neutralized by pan-caspase inhibitor zVAD. Apoptosis array evidenced an increased protein level of un-cleaved caspase 3 after CUX1 knock down. Caspase 8 uncleaved form was down-regulated at protein level after CUX1 knock down and treatment with TRAIL. Its cleaved forms were up-regulated. FlipL decreased in favor of FlipS also.

Conclusion: CUX1 mediates the resistance of liver cancer cells to TRAIL signaling. Knock down of CUX1 restores the potential of TRAIL to trigger cell death.

Disclosure of Interest: All authors have declared no conflicts of interest.
The results were in agreement with those reported by Awadallah et al.[6] who found a statistically highly significant elevation in the serum SCCA among patients with HCC before and after therapeutic intervention. Our results showed that SCCA level ranged from 2.5–10 with a mean of 5.53 in HCC patients without interventions, 3.3–7.6 with a mean of 5.3 in patients with HCC before therapeutic interventions, 1.2–5.6 with a mean of 3.3 in cirrhotic group, 0.6–1.05 with a mean of 0.824 in chronic HCV group while healthy controls had much lower values ranging from 0.3–0.95 with a mean of 0.646.

When combined sensitivity of both markers were calculated in our study at the best-cutoff values (SCCA 3.2 ng/ml and AFP 200 ng/ml) sensitivity improved to 93% (Table 4).

### Table 2: Comparison Between Different Studied Groups Regarding SCCA Score

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gp. A</td>
<td>5.53</td>
<td>2.16</td>
<td>2.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Gp. B</td>
<td>5.3</td>
<td>1.5</td>
<td>3.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Gp. C</td>
<td>3.3</td>
<td>1.6</td>
<td>1.2</td>
<td>5.6</td>
</tr>
<tr>
<td>Gp. D</td>
<td>0.824</td>
<td>0.15897</td>
<td>0.6</td>
<td>1.05</td>
</tr>
<tr>
<td>Gp. E</td>
<td>0.646</td>
<td>0.23172</td>
<td>0.3</td>
<td>0.95</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td>28.89</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td>0.000*</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Correlation Between AFP and SCCA

<table>
<thead>
<tr>
<th>Marker</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCA</td>
<td>0.629*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>AFP</td>
<td>0.525*</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Note: r: Pearson coefficient, *: Statistically significant at $p \leq 0.05$

### Table 4: AUC for AFP, SCCA and SCCA + AFP

<table>
<thead>
<tr>
<th>Marker</th>
<th>AUC</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFP</td>
<td>0.930*</td>
<td>0.001</td>
</tr>
<tr>
<td>SCCA</td>
<td>0.890*</td>
<td>0.003</td>
</tr>
<tr>
<td>SCCA + AFP</td>
<td>0.820*</td>
<td>0.016</td>
</tr>
</tbody>
</table>

### Conclusion

In the present study patients with HCC either with or without therapeutic intervention have significantly higher level of AFP in comparison to chronic HCV, cirrhotic and control groups this is in agreement with Awadallah et al.[6] who reported a statistically highly significant elevation in the serum AFP in HCC group when compared with control group. Moreover, the mean serum level of AFP in group A (HCC before intervention) was 263 ng/ml that decreased to 209.4 ng/ml in group B after therapeutic intervention and this agreed with Feng et al.[7] and Molinari et al.[8] Also, at AFP level of 200 ng/ml, the sensitivity was 90%, while the specificity was 60%. Our results showed that SCCA level ranged from 2.5–10 with a mean of 5.53 in HCC patients without interventions, 3.3–7.6 with a mean of 5.3 in patients with HCC before therapeutic interventions, 1.2–5.6 with a mean of 3.3 in cirrhotic group, 0.6–1.05 with a mean of 0.824 in chronic HCV group while healthy control group had much lower values ranging from 0.3–0.95 with a mean of 0.646. Thus, a highly significant increase in serum SCCA level in patients with HCC before and after therapeutic intervention when compared to cirrhotic, chronic HCV and control groups (P < 0.001). These results were in accordance with Hussein et al.[9] and El Ezawy et al.[10] SCCA was also higher among patients with HCC before intervention compared to patients with HCC after intervention as found by Bin et al.[11]

Applying the ROC curves analysis showed the best cut-off value to differentiate HCC patients from cirrhotic patients was 3.2 ng/ml for SCCA yielding 80% sensitivity and 90% specificity. These results were in agreement with Trevisani et al.[12] Patients with HCC, in our study were none randomized selected as BCLC stage B (either one HCC lesion <5 cm in size or 3 lesions <3 cms) so no statistical correlation was done between serum AFP level and tumor size. Our results showed a significant positive correlation between serum SCCA and AFP among patients with HCC before and after therapeutic intervention. Our data are in agreement with that of Hussein et al.[9] and El Ezawy et al.[10] who detected that SCCA were positively significantly correlated with AFP level. When combined sensitivity of both markers was calculated in our study at the best-cutoff values (SCCA 3.2 ng/ml and AFP 200 ng/ml) sensitivity improved to 93%. Matching results were found by Gianluigi et al.[4]

### Disclosure of Interest

All authors have declared no conflicts of interest.

### References


The overall formula that could best predict HCC was then constructed:

$$\text{HMC-CU score} = 0.164 \times \text{Gender} + 0.141 \times \text{Hb} + 0.118 \times \text{INR}$$

The formula was validated using the bootstrap algorithm with 1000 samples. The HMC-CU score had an area under the ROC curve (AUC) of 0.76 (95% CI: 0.74–0.78) with sensitivity of 68% and specificity 66%. AUC was 0.76 and the 95% confidence interval was 0.74–0.78.

**Conclusion:** The HMC-CU score constructed from routine parameters is accurate in diagnosing the presence of HCC compared with HCV-related CLD. The advantage of our score is its simplicity, being based on routine laboratory parameters and serum AFP which is being used for screening of patients in many centers all over the world. Our score will not impose extra costs for the patients because it utilizes only routine laboratory parameters. The HMC-CU score may be useful during surveillance programs for HCC. Our study included large number of HCC and non-HCC patients all are Egyptians with a background of HCV type 4 related CLD. A validatory study is undertaken and further studies are invited to validate this score on patients of other races infected with other HCV genotypes.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

A. Vitiello4, G. Cordone2, N. Caporaso4, F. Morisco4, I.l.c. Italian Liver Cancer P0070 RECENT TRENDS IN HEPATOCELLULAR ADENOMAS:

Aims & Methods: Aims:

Hepatocellular adenomas (HCA) are rare, benign tumors of pre-11. Peng ZW, Liang HH, Chen MS, et al. Conformal radiofrequency ablation with the risk of rupture and incomplete surgical resection. Lesion size was associated 12. With the Bordeaux group, was performed. Descriptive statistics, uni and imaging is insufficient for a correct diagnosis, and biopsy specimen or surgical 3. In this study, we evaluated the feasibility and diagnostic accuracy of EUS-FNA for hepatic solid masses in patients with suspected malignancy. The EUS-FNB using 20G, 22G or 25G Core biopsy needle (EUS-FNA) is one of the alternative methods for tissue sampling of liver solid mass. The primary outcome was the diagnostic accuracy of EUS-FNB for malignancy.

Conclusion: LA is a more efficacious therapeutic option than TACE in patients with solitary large HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO072 ENDOSCOPIC ULTRASOUND GUIDED BIOPSY FOR LIVER MASS USING CORE BIOPSY NEEDLE

H.K. Chon1, T.H. Kim1, K.H. Choi2

1 Internal Medicine, Wonkwang College of Medicine, Iksan/Korea, Republic of
2 Pathology, Wonkwang College of Medicine, Iksan/Korea, Republic of

Contact E-mail Address: ktw@wkku.ac.kr

Introduction: Endoscopic ultrasound (EUS)-guided fine needle aspiration (EUS-FNA) is one of the alternative methods for tissue sampling of liver solid mass. However, the diagnostic efficacy using cytology has limited. Comparative studies of needle types were not performed and their diagnostic yield was unknown.

Aims & Methods: In this study, we evaluated the feasibility and diagnostic accuracy of EUS-guided fine needle biopsy (EUS-FNB) for hepatic solid masses in patients with suspected malignancy. The EUS-FNB using 20G, 22G or 25G ProCore needle (PCN) was performed to evaluate the patient with solid liver mass. The primary outcome was the diagnostic accuracy of EUS-FNB for malignancy, and adequacy of the specimen for histology. The secondary outcomes were (1) the proportion of patients in whom immunohistochemical (HIC) stain was possible, and (2) compared diagnostic yield of FNB according to the needle size (40–50 mm, 51–60 mm and > 60 mm).

Results: Forty-one patients (13 women; mean age, 67.9±10.3 years [range, 46– 86]) underwent evaluation with EUS and identified hepatic lesions ranging in size from 0.7 cm to 15 cm. EUS-FNB with 20G (n = 10), 22G (n = 24) or 25G PCN (n = 7) was performed (right lobe: n = 10, left lobe: n = 31). The median number of needle passes was 2.4±0.8 (range, 1–5). Technical success rates for tissue acquisition were 97.6%, but both specimen adequacy for histology and available HIC stain was 92.6%. Three (74%) patients were non-diagnostic and subsequently proved to be malignant; 1 by smear cytology and 1 after surgical resection. The diagnostic yield, sensitivity and specificity of EUS-FNB for the diagnosis of malignancy were 92.6%, 92.6% and 100%, respectively. The diagnostic yield in 25G PCN and 22G PCN was significantly higher than 20G PCN (p = 0.045). There was one bleeding complication, but controlled with endo- scopic hemostasis with endoclip.

Conclusion: EUS-FNB with core biopsy needle may be a safe and useful modality in the management of patients with hepatic solid mass. Moreover, 25G and 22G FNB may be adequate for liver biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.
References


Aims & Methods: We aimed to find out best method to predict outcome of HCC patients with ascites. A total of 437 newly-diagnosed HCC patients with ascites (mean age = 56.0 y, male = 74.8%, hepatitis B virus = 73.2%) were analyzed. We compared Child-Pugh score, Model for End-stage Liver Disease (MELD) score, MELD-Na score, and the Albumin-bilirubin (ALBI) grade for overall survival.

Results: During a median 9.0 months of follow-up (range; 0.1-154.0), mortality was observed in 212 (48.5%) patients. MELD-Na showed highest time-dependent area under receiver-operating characteristics curves (AUROC)s at 1 year (0.672) that was significantly higher than ALBI grade (0.605), MELD score (0.580), and Child-Pugh score (0.580). The median survival was significantly lower for those with MELD-Na < 12 than MELD-Na ≥ 12 (median: 13.6 vs. 3.7 months, p < 0.001). Overall, 350 patients received treatment, and most commonly used modality was transarterial chemoembolization (62.3%), followed by radiofrequency ablation (15.7%) and resection (13.4%). Overall survival was significantly different among those who received treatment than those who did not (median survival: 13.3 vs. 2.4 months, p < 0.001). When patients were further stratified by mUCC stage and MELD-Na score, treatment was not associated with better outcome for mUCC stage IV patients with MELD-Na ≥ 12 (median survival: 22.2 vs. 1.8 months for treatment vs. best supportive care, p = 0.15), while treatment was associated with better outcome in other subgroups.

Conclusion: In HCC patients with ascites, treatment was associated with better survival, except for subgroup with advanced tumor with decreased liver function, indicating that apnea on the use of percutaneous needle is not absolute. Treatment efficiency for HCC treatment. For these patients, MELD-Na showed better performance than MELD, Child-Pugh per se.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0075 ADHERENCE TO BARCELONA CLINIC LIVER CANCER GUIDELINES IN FIELD-PRACTICE: RESULTS OF PROGETTO EPOTACARCINOMA CAMPANIA

Introduction: The BCLC algorithm is the standard system for clinical management of HCC. Data on adherence to this therapeutic paradigm are scarce. The aim of this field-practice study is to provide a description of HCC patients in Southern Italy, to evaluate the adherence to BCLC guidelines and its impact on patients’ survival.

Aims & Methods: We analyzed the region-wide Italian database of Progetto Epotacarcinoma Campania, which includes data of HCC patients, prospectively collected from January 2013 to December 2015 in 16 regional centers.

Results: Overall 1008 HCC patients were enrolled: 70.6% patients received therapy recommended by BCLC algorithm, while 29.4% underwent different treatment. Among patients who were treated in adherence to guidelines, a higher rate of diagnosis on surveillance programs, better liver function, lower rate of AFP > 200 ng/mL, more early stage and monofocal HCC, lower frequency of nodules > 5 cm, portal vein thrombosis and metastases were observed. The multivariate analysis showed that non-adherence to treatment guidelines was independently associated to the BCLC stage B, Child-Pugh classes C-B, and to the presence of neoplastic thrombosis and metastases. The mean overall survival in patients treated according to BCLC indications was 35.5 months, while in patients managed differently was 31.9 months (p < 0.001).

Conclusion: Adherence to BCLC algorithm in field-practice was high in early and end stage HCC patients, but it was poor in intermediate and advanced patients. This may be due to the wide heterogeneity of intermediate-stage patients, and to the limited use of sorafenib in advanced-stage patients. Strategies to improve treatment and stratification of HCC patients are required.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0076 A QUESTIONNAIRE SURVEY ON QUALITY OF LIFE WITH ANXIETY AND DEPRESSION SELF-RATING IN PATIENTS OF LIVER CIRRHOSIS

Introduction: Liver cirrhosis is a great public health burden for Chinese health system. The most common cause are HBV, HCV, alcohol consumption and non-alcoholic fatty liver disease, etc. The quality of life of liver cirrhosis patients is impacted by the physical symptoms and psychological symptoms such as anxiety as depression.

Aims & Methods: We aimed to investigate the quality of life of patients with cirrhosis, as well as depression and anxiety. A questionnaire survey was carried out in 95 patients in our gastroenterology department, Peking University People’s Hospital from May to August in 2016. The patients were divided into two groups, cirrhosis group and control group. The patients in cirrhosis group

Contact Email Address: medicalcyan@qq.com

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were diagnosed liver cirrhosis without complications. The control group included the digestive polyps patients without other diseases. The questionnaire included the World Health Organization Quality of Life (WHOQOL)-BREF, Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SPS). The questionnaire scores of the two groups were analyzed.

Results: A total of 95 valid questionnaires were collected and divided into cirrhosis group (n = 40) and control group (n = 45). In the cirrhosis group, there were 22 males and 18 females, average age 57.97 ± 10.448 years. In the control group, there were 45 males, 23 males and 22 females, with an average age of 61.47 ± 13.081, showing no difference from cirrhosis group. WHOQOL included four domains: physiological domain, psychological domain, social relationship domain, and environment domain. The scores of liver cirrhosis group: physiological field (22.23 ± 3.312), psychological field (19.59 ± 3.925), social relationship field (9.64 ± 2.497), environment domain (26.23 ± 7.534) and control group (22.96 ± 3.275 in physiological field, 19.87 ± 3.152 in psychological field, 10.58 ± 2.061 in social relation field and 28.36 ± 5.091 in environmental field), they had no significant difference between the two groups (P > 0.05). The depressions in the cirrhosis group: self-rating anxiety scale (SAS) 7.534 was significantly higher (P = 0.034) than that of control group (42.61 ± 11.564). Meanwhile, there was no significant difference between the Self-rating Anxiety Scale scores of the cirrhosis group (38.46 ± 11.917) and control group (37.00 ± 12.521) (P > 0.05) (Table 1).

### Table 1

<table>
<thead>
<tr>
<th></th>
<th>cirrhosis group</th>
<th>control group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>57.97 ± 10.448</td>
<td>23.85 ± 7.046</td>
<td>0.196</td>
</tr>
<tr>
<td>Male(n)</td>
<td>22</td>
<td>18</td>
<td>0.808</td>
</tr>
<tr>
<td>Female(n)</td>
<td>23</td>
<td>22</td>
<td>0.736</td>
</tr>
<tr>
<td>WHOQOL-BREF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiological</td>
<td>22.23 ± 3.312</td>
<td>22.96 ± 3.275</td>
<td>0.317</td>
</tr>
<tr>
<td>Psychological</td>
<td>19.59 ± 3.925</td>
<td>19.87 ± 3.152</td>
<td>0.721</td>
</tr>
<tr>
<td>Social relationship</td>
<td>9.64 ± 2.497</td>
<td>10.58 ± 2.061</td>
<td>0.063</td>
</tr>
<tr>
<td>Environment</td>
<td>26.23 ± 7.534</td>
<td>28.36 ± 5.091</td>
<td>0.129</td>
</tr>
<tr>
<td>Self-rating Depression Scale(SDS)</td>
<td>47.86 ± 10.782</td>
<td>42.61 ± 11.564</td>
<td>0.034*</td>
</tr>
<tr>
<td>Self-rating Anxiety Scale(SAS)</td>
<td>38.46 ± 11.917</td>
<td>37.00 ± 12.521</td>
<td>0.584</td>
</tr>
</tbody>
</table>

*P < 0.05: cirrhosis group vs control group

Conclusion: The quality of life and anxiety score in cirrhosis group had no significant difference from the control group, but the depression score was higher than that of the control group.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

### P0077  THE IMPORTANCE OF INDIVIDUAL CORRECTION OF EATING BEHAVIOR IN PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE

Y. Nikiforova
Department For The Study Of Diseases Of The Liver And Gastrointestinal Tract (from 05.2016 Year - Department Study Of Digestive Diseases And Their Comorbidity With Non-communicable Diseases), St.-L.T. Mula Therapy Institute of NAMS of Ukraine, Kharkov/Ukraine

Contact E-mail Address: dr.jana@mail.ru

Introduction: At the present stage, the treatment of patients with non-alcoholic fatty liver disease has insufficient effectiveness due to the simultaneous availability of a number of recommendations and the lack of an individual approach. Not enough attention is paid to the study of nutritional behavior and the role of nutraceutics, as additional risk factors for the development of non-alcoholic fatty liver disease, methods for studying the characteristics of eating behavior should be applied more widely, which will allow timely appropriate correction. A more extensive study of nutrigenetics will make it possible to designate a personified diet, taking into account the detected polymorphisms, which will make it possible to achieve a significant improvement in metabolic parameters in this category of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0079 EARLY DIAGNOSTICS OF NAFLD: ANALYSIS OF RISK FACTORS AND USE OF HARMONIZED APPARATUS FIBROSCAN 502 TOUCH®

Association between the prevalence steatosis and component composition of the body

I. Bakulin1, L. Belousova1, L. Evdokimova2, M. Serkov1, S. Ivanov2, D. Korostovsky1

1Chair Of The Propedeutics Of Internal Diseases, Gastroenterology And Dietology, North-Western State Medical University n.a. I.I. Mechnikov, Saint-Petersburg/Russian Federation
2North-Western State Medical University n.a. I.I. Mechnikov, Saint-Petersburg/Russian Federation

Pavlov First Saint Petersburg State Medical University, Saint-Petersburg/Russian Federation

Contact E-mail Address: liya73@mail.ru

Introduction: Non-alcoholic fatty liver disease (NAFLD) is liver disease with histological signs of accumulation of cholesterol excessive amount in hepatocyte in the absence of alcohol consumption by the patient (due to causes other than). The search for accessible, non-invasive and effective methods of screening for this pathology, allowing to detect NAFLD at early, potentially reversible stages of development is relevant. The purpose of the work was frequency estimation of the prevalence of steatosis according to elastometry with controlled attenuation parameter (CAP®) among young people and associated with them specific body composition.

Aims & Methods: 59 volunteers (students of medical university) at the age of 19–28 years (the median age of 20.5) have participated in research. There were 22 (37.3%) men and 33 (62.7%) women among them without verified liver diseases. The survey was conducted in order to exclude or detect risk factors. Determining the risk factors, the prevalence of steatosis in the said group of patients was performed with the apparatus FibroScan 502 Touch. The final figures of elasticity of the liver were estimated in KPa (METAIVR). The controlled attenuation parameter (CAP®) in dm3 was used for the severity of steatosis. Moreover, there was the bioelectrical impedance analysis of body (BIA), evaluated: body mass index (BMI), body fat.

Results: The signs of violations of the structure of the liver were diagnosed in 15 people out of 59 (25.4%). The signs of steatosis were found in 12 (20.3%) students. The signs of liver rigidity were found in 7 (11.9%) people (E > 5, 8KPa). At the same time the combination of liver fibrosis and steatosis was diagnosed in 4 (6.8%). After analyzing data of BIA it was revealed that body weight above normal in 23 (40, 3%) people; within fat body composition the normal values in 19 (33, 4%). Results of binary regression analysis showed that the chance of development of hepatic steatosis in case of excess adipose tissue increase 28 times (p = 0.045), influence of BMI, gender, age was statistically insignificant.

Conclusion: Based on the results obtained, it can be concluded that there is high enough level of distribution of liver steatosis among young people. Transient elastography (TE) with controlled attenuation parameter (CAP®) is a fast, reliable, repeatable non-invasive method for the assessment of NAFLD. The development of hepatic steatosis among practically young healthy persons validly associated with the increase the amount of adipose tissue in the body. Confirmed the importance of evaluation of body composition and lack of information of using only BMI when evaluating the chances of development of NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0080 SALVAGE TECHNIQUE USING A MICRO GUIDEWIRE FOR DIFFICULT BILIARY CHOLANGIOPANCREATOGRAPHY


Ichinomiya Nishi Hospital Dept. of Gastroenterology, Ichinomiya/Japan

Contact E-mail Address: a-mori@anzu.or.jp

Introduction: Biliary cannulation is indispensable for therapeutic endoscopic retrograde cholangiopancreatography (ERCP) in patients having biliary disease. Selective biliary cannulation is often difficult due to anatomical constraints. Numerous techniques have been attempted to overcome such problems. Although a wire-guided selective cannulation technique into the bile duct is a useful approach, conventional guidewires (0.025 or 0.035 inch) are relatively rigid and prone to get entrapped in the long curved narrow distal segment (NDS) or malignant stricture and sometimes get cocked off the NDS in such cases. It may be better to use finer and more flexible guidewire. Hence, we developed a novel guidewire technique using a micro guidewire technique for performing a precut papillotomy, endoscopic ultrasound-guided techniques or performing a precut papillotomy, endoscopic ultrasound-guided biliary drainage and one was interrupted because of developed serious condition.

Conclusion: GTWt as a salvage technique for unsuccessful selective biliary cannulation cases improves the success rate of ERCP, and could be attempted before performing a precut papillotomy, endoscopic ultrasound-guided techniques or other cumbersome procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0081 ERCP IN VERY ELDERLY PATIENTS AGE 85 OR OLDER

M.T. Ayoubi1, Khajekin1, F. Castellino1, N. Leone1, M. Berruti2, G. Sансол1, L. Framarr1, A. Repici2

1GI Endoscopy Unit, Humanitas Gradenigo Hospital, Torino/Italy
2Dept. Of Gastroenterology, Ist. Clinico Humanitas Rozzano Dept. of Gastroenterology, Milano/Italy

Contact E-mail Address: ayoubi@libero.it

Introduction: To evaluate the safety and effectiveness of this procedure (ERCP) in patients age 85 years and older.

Methods: From first January 2010 until end December of 2016 in our digestive unit 3153 patients underwent ERCP, including 315 (11.3%) patients over 85 years. Characteristics of these patients: The mean age was 89 (range 85–99), 117 males and 254 females. 43 (12.2%) were in treatment with antithrombotic drugs. The initial diagnosis in 218 patients (61.2%) was choledocholithiasis, malignant CBD stones in 92 patients (29.5%), postoperative leak in 11 patients (3, 13%) and unknown CBD stones in 31 patients (8,83%). All patients underwent the following clinical evaluation before and after ERCP. 34 patients underwent antibiotic therapy. The endoscopic success of ERCP in cases of choledocholithiasis was 98,2% and for malignant CBD stones was 82, 6%.

Results: Among 40 ERCP-naive patients, 40 were ERCP-difficult-cases, 97% (232/240 patients). After ERCP with GTWt, four patients developed mild acute pancreatitis, which resolved in a few days. No serious procedural accidents were reported. The 40 ERCP-difficult cases included 22 patients with a long curved NDS, six patients with juxtapapillary duodenal diverticulum, six patients with malignant stricture, and four patients with difficult front view of papilla. Among eight patients who failed with GTWt, seven were successful performing precut papillotomy or endoscopic ultrasound-guided biliary drainage and one was interrupted because of developed serious condition.

Conclusion: GTWt as a salvage technique for unsuccessful selective biliary cannulation cases improves the success rate of ERCP, and could be attempted before performing a precut papillotomy, endoscopic ultrasound-guided techniques or other cumbersome procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0082 ALCOHOL CONSUMPTION CAN REDUCE THE RISK OF GALLSTONE DISEASE: A SYSTEMATIC REVIEW WITH Dose-Response META-ANALYSIS OF CASE-CONTROL AND COHORT STUDIES

B.H. Cha1, M. Jang2

1Sheikh Khalifa Specialty Hospital, Ras Al Khaimah/United Arab Emirates
2Medical Research Collaborating Center, Seoul National University Hospital, Seoul, Korea, Republic of

Contact E-mail Address: doctorhyo@gmail.com

Introduction: Gallbladder stone (GBS) is a common gastrointestinal disease can progress to severe cholecystitis and is a strong risk factor for gallbladder cancer (GBC). Recently, clinical epidemiologic studies revealed that the alcohol consumption has a protective effect for development of gallstone diseases. However, the relationship between alcohol consumption and gallstone disease development risk is still not completely determined.

Methods: We performed a comprehensive search of MEDLINE, EMBASE and Cochrane library from January 1st, 1996, to December 31st, 2016 for studies assessed the relationship between alcohol consumption and gallstone disease development risk. The eligibility criteria was included: 1) studies involving the patients with gallbladder stone with or without cholecystitis; 2) cohort or case-control studies investigated the association between alcohol consumption and gallstone disease development. Newcastle-Ottawa Scale was used to assess the methodologic quality of each studies. Data was obtained from each selected studies regarding: 1) baseline characteristics of the study (cohort, case-control); 2) number of participants; 3) participants’ clinical features; 4) country; 5) publication year; 6) Risk or odds ratios with 95% confidence intervals of alcohol consumption and risk of gallstone. The random effect model was used to estimate the pooled relative risks (RR) with 95% confidence intervals (CIs).

Results: Twenty-five cohort and case-control studies were included, and total 12, 581 cases with gallstone diseases among those 172, 509 controls. Alcohol consumption indicated a decreased risk of GSD development (Pooled RR = 0.84 [0.79–0.90], P < 0.001). Subgroup analyses according to the alcohol doses (g/day) confirmed a gradual risk-reduction effect on GSD compared to non-drinkers (Light: RR = 0.97 [0.94, 1.00], p = 0.864; Moderate: RR = 0.82 [0.79, 0.86], p = 0.777; Heavy: RR = 0.70 [0.62, 0.80], p < 0.01).

Disclosure of Interest: All authors have declared no conflicts of interest.

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United European Gastroenterology Journal 5 (S5)
Conclusion: In this systematic review with meta-analysis, alcohol consumption has a dose-dependent negative co-relationship with the risk of gallstone disease development.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0083 ERCP WITH SHORT-TYPE SINGLE BALLOON ENTEROSCOPE IN PATIENTS WITH SURGICALLY ALTERED PATIENTS
M. Kida1, H. Yamautchi1, Y. Kawaguchi1, E. Miyata1, R. Hasegawa1, T. Kaneo1, K. Okuwa1, T. Iwa1, H. Kikuchi1, H. Imaizumi2, W. Koizumi2
1Endoscopy & Gastroenterology, Kitasato University, Sagamihara/Japan
2Gastroenterology, Kitasato University School of Medicine, Sagamihara/Japan

Contact E-mail Address: m-kida@kitasato-u.ac.jp

Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is challenging in patients who have undergone surgical reconstruction of the intestine. In 2001, double-balloon enteroscope (DBE) was reported by Yamamoto et al to be an effective procedure for the diagnosis and treatment of small intestine diseases. Since 2005, single-balloon assisted ERCP was first successfully by Haruta et al used to treat a large anastomotic stricture in a patient who undergone biliary reconstruction by R-Y choledochojunostomy after liver transplantation. After that, several studies with long enteroscope have reported that balloon enteroscope-assisted ERCP (B-ERA-CP) is a safe and effective procedure with about 69–100% of reaching the blind end. However long type enteroscope allows us to use limited number of ERCP devices because of its length 200 cm. Then Olympus Co. introduce the prototype of short single balloon enteroscope (SBE) with a bigger channel 3.2 mm in diameter was developed. We will present its usefulness and limitation.

Aims & Methods: In order to investigate the usefulness and limitation of short-type SBE, we have performed totally 183 cases/302 procedures of ERCP with short-type SBE (30 patients with B-II (24 cases, 30 procedures), R-Y gastrectomy (RY; 94, 138), Hepatico-Jejunostomy without gastrectomy (HJ; 29, 58), and Child/Whipple (CW; 36, 76) from 2009 to 2016. We have investigated its rate of reaching blind end, time of procedure, success rate of therapeutic procedure, complications and its limitations.

Results: Using short type SBE, the rate of reaching blind end is B-II: 97% (29/30), R-Y: 91% (126/138), HJ: 72% (39/58), CW-95% (71,76), and 88% (totally). Success rate of therapeutic procedure in reached blind end cases, is B-II: 100% (27/27), R-Y: 96% (104/108), HJ: 94% (34,36), CW-100% (67,67), and 97% (232/238) totally. The average time of procedure is B-II: 38.6 min, R-Y: 47.2, HJ: 38.5, and CW:44.3, respectively. The reason of unreached cases in HJ without gastrectomy. 238) totally. The average time of procedure is B-II: 38.6 min, R-Y: 47.2, HJ: 38.5, and CW:44.3, respectively. The reason of unreached cases in HJ without gastrectomy.

Conclusion: ERCP with short-type SBE in patients with surgically anatomy is feasible with high success rate, except for cases with HJ without gastrectomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0084 CHOLECYSTECTOMY FOLLOWING ENDOCOSCOPIC RETROGRADE CHOLANGIOGRAPHY AND DUCT CLEARANCE FOR CHOLEDOCHOLITHIASIS: A SINGLE CENTRE EXPERIENCE FROM UNITED KINGDOM
F. Rana1, D. Majumdar2, P. Sambaia1, D. Craig1, J. Greenaway1, V. Mitra1
1Dept. Of Gastroenterology, James Cook University Hospital, Middlesbrough/United Kingdom
2Dept. Of Gastroenterology, James Cook University Hospital, Middlesbrough/United Kingdom

Contact E-mail Address: fahdrana@outlook.com

Introduction: Patients undergoing endoscopic retrograde cholangiopancreatography (ERCP) and duct clearance for common bile duct stones (CBDS) should be followed up with an early cholecystectomy to prevent recurrent biliary complications (1, 2) and acute gallstone pancreatitis. Recently the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) recommended that definitive eradication of gallstones by cholecystectomy prevents the risk of a recurrent attack of acute pancreatitis (AP). For patients with an episode of mild acute pancreatitis, early definitive surgery should be undertaken, either during the index admission of or within two weeks (3, 4).

Aims & Methods: 1) To determine time frame between ERCP/duct clearance and cholecystectomy (CCX) in non-pancreatitis group. 2) To determine time frame between ERCP/duct clearance and CCX in pancreatitis group. 3) To determine re-admission rate while awaiting CCX. All patients who underwent ERCP for CBDS between 01/01/2014 to 31/12/2014 were included in the study. Patients who had previously undergone CCX (de novo stones) were excluded. All patients were followed up for a minimum period of 2 years following their ERCP.

Results: Of 273 patients underwent ERCP for CBDS. Out of these 21.2% (n = 58) had previously had CCX and were excluded. Out of the remaining 215 with gall bladder (GB) in situ, 87.4% (188/215) underwent successful duct clearance at index or subsequent ERCP. Of these, 47.3% (89/188) underwent CCX (218/188) patients were currently awaiting CCX and 51.6% (97/188) did not undergo CCX. The outcomes in remaining 13.4% (n = 27) patients in whom duct clearance was not achieved are discussed later. In the CCX group, the median time between ERCP/duct clearance and CCX was 123 days (range 0–89 days). In this group, 113 patients had gall stone pancreatitis (GSP) on presentation and the median time between ERCP and CCX in the GSP group was 136 days (range 35–287 days); 12 of these had mild pancreatitis with a median time to CCX of 140 days (range 60–287 days). 4 patients re-presented with CBDS while awaiting CCX after duct clearance; 1 had pancreatitis on readmission. 51.6% (97/188) patients who did not undergo CCX after duct clearance are referred to as non-cholecystectomy (non-CCX) group. This was mainly secondary to high ASA grade. We compared patient demographics and presentation with the CCX group and the results were as follows:

<table>
<thead>
<tr>
<th>Value</th>
<th>CCX group (n = 89)</th>
<th>Non-CCX group (n = 97)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Age</td>
<td>61 years</td>
<td>79 years</td>
</tr>
<tr>
<td>Median ASA grade</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Female patients</td>
<td>67%</td>
<td>56%</td>
</tr>
<tr>
<td>Male patients</td>
<td>33%</td>
<td>44%</td>
</tr>
<tr>
<td>Pancreatitis on presentation</td>
<td>17%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Readmission with CBDS</td>
<td>4.5%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

In 27 patients duct clearance was not achieved; 26% (7/27) underwent surgical management (CBD exploration on table cholangiogram and CCX). The remaining 74% (20/27) patients were deemed unsuitable for invasive intervention and were either for symptomatic stent change only or conservative management.

Conclusion: The time period between duct clearance and CCX was longer than anticipated, especially in patients with mild acute pancreatitis as none of them underwent CCX during index admission or within 2 weeks of ERCP/duct clearance. Some patients re-presented with CBDS while awaiting CCX. We looked into potential causes of delay in CCX – delayed referral to surgery, long waiting time for elective CCX and patient choice. We propose to develop a local pathway for patients with CBDS and gallstones and induce a robust system for referring patients for CCX following duct clearance. This would help to minimize readmission and potential complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0085 THE DEVELOPMENT OF MULTI-LAYER DRUG ELUTING MEMBRANE USING ULTRASONIC SPRAY COATING TECHNIQUE
J. Park1, D.H. Lee2
1Internal Medicine, Inha University School of medicine, Incheon/Korea, Republic of
2Inha University School of medicine, Incheon/Korea, Republic of

Contact E-mail Address: psinha@naver.com

Introduction: The placement of self-expandable metallic stent has become the treatment of choice to restore luminal patency in the palliative treatment of unresectable malignant biliary stricture. Currently, drug-eluting stents (DESs) are developed to prevent tumor invasion into the stent and to prolong stent patency. However, the capacity of drug per unit area varies with the position in membrane, and the control of drug release is impossible in current available DESs.
Aims & Methods: The aim of current study is to develop the multi-layer drug eluting membrane using ultrasonic spray coating method, which have uniform capacity of drug and be able to control the drug-release capacity. Methods: The drug eluting membrane was made using ultrasonic spray coating machine (MediCoat-2JX). The membrane consists of two kinds of coating material. One is silicone (MED-6640), that was used to basic structure of membrane and the other coating agent is polyurethane (tecphilic, tecotane, Tecoflex and pellettane). The gemcitabine was used as antitumor drug, and coated to membrane by mixed form with polyurethane (gemcitabine, 250μg/ml; polyurethane, 500μg/ml). The thickness of membrane and the capacity of drug in membrane were measured at the proximal and distal end, and mid portion. The drug release capacity and duration was measured by using drug releasing test in vitro for 3 days. Results: The mean thickness of membrane was 50um. The mean capacity of drug per unit area was 100μg/cm², and the amount was constant in all tested area (Standard deviation, 5μg/cm²). In drug release test, the capacity of releasing drug was different depended on the kinds of polyurethane. The total amount of released drug in 24hrs was 919 μg, 858 μg, 868 μg in tecphilic coating, tecotane coating, tecoflex coating, and pellettane coating. The total of released drug amount depended on polyurethane was described in table 1.

<table>
<thead>
<tr>
<th>Drug release amount</th>
<th>Gencitabine (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating Polymer</td>
<td>24hrs</td>
</tr>
<tr>
<td>Tecophilic</td>
<td>919</td>
</tr>
<tr>
<td>Tecothane</td>
<td>819</td>
</tr>
<tr>
<td>Tecoflex</td>
<td>681</td>
</tr>
<tr>
<td>Pellettane</td>
<td>580</td>
</tr>
</tbody>
</table>

Conclusion: The ultrasonic spray coating technique could be applied to make multi-layer drug eluting membrane with regular thickness. The membranes contained the uniform capacity of drug in all tested area. The releasing drug capacity is able to control by applying different kind of polyurethane.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0086 THE ANTI-TUMOR EFFECT OF PACLITAXEL, GEMCITABINE AND MITOMYCIN C ELUTING MEMBRANE IN ANIMAL MODEL

J. Park1, D.H. Lee2, S. Jeong2
1Internal Medicine, Inha University School of medicine, Incheon/Korea, Republic of
2Inha University School of medicine, Incheon/Korea, Republic of

Contact E-mail Address: pjsinha@naver.com

Introduction: Local treatment of primary bile duct cancer is a challenge and endoscopic stent insertion is widely used to maintain the bile duct patency. Drug eluting stent is currently developed to add the ability of antitumor effect.

Aims & Methods: We aimed to evaluate the anti-tumor effect of the paclitaxel, gemcitabine, and mitomycin C-eluting polyurethane membrane in a tumor model. Total of 24 mice were used in current study and divided into four groups, each group had six mice. Membranes containing different antitumor drugs (paclitaxel, gemcitabine, mitomycin C, 100μg/disc) were inserted beneath the tumor mass in mouse models. Tumor size and body weight of the tumor model were monitored for 22 days after insertion of the membrane. The results were compared with the tumor model which was inserted only silicone membrane (control).

Results: Tumor volumes on day 22 of membrane treatment were decreased in all drugs, that were significantly different compared to those of control (paclitaxel, 291.77mm³, P value = 0.4116; gemcitabine, 63.38mm³, P value = 0.0001; mitomycin C, 119.02 mm³, P value = 0.0029; control 136.26mm³). The antitumor effect of gemcitabine was tended to be superior compared to other drugs. However, it was not statistically different. No significant difference in body weight change was observed among groups.

<table>
<thead>
<tr>
<th>Membrane only</th>
<th>Paclitaxel</th>
<th>Gemcitabine</th>
<th>Mitomycin C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse weight (g)</td>
<td>24.28</td>
<td>21.05</td>
<td>19.56</td>
</tr>
<tr>
<td>Tumor volume (mm³)</td>
<td>1362.62</td>
<td>291.77</td>
<td>63.38</td>
</tr>
<tr>
<td>Tumor weight (mg)</td>
<td>1025</td>
<td>524</td>
<td>496</td>
</tr>
</tbody>
</table>

Conclusion: The drug-eluting membrane showed significant antitumor activity. However, the effect was not different according to kinds of the antitumor drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0087 ADVANCES IN CYTOLOGY FOR THE EARLY DIAGNOSIS OF PANCREATICO-BILIARY MALIGNANCY

C. Meredith1, P. Irandoust2, P. Baird3
1Gastroenterology And Hepatology, Bankstown-Lidcombe Hospital, Bankstown/ Australia/NSW
2Cytology, Lavery Pathology, Ryde/Australia/NSW

Contact E-mail Address: dcmeredith@gmail.com

Introduction: Liquid-based sample preparations for cytology have improved the cellular yield in pancreatobiliary (PB) malignancy.2-4 The SurePath (SP) method-ology produces a pellet of concentrated cellular material which enables addi-}

ational slides for immunohistochemical (IHC) staining for tumour markers Ki67, p53 and CDX2. The presence of the mitosis-related marker, Ki67, in high con-centration with a specific pattern adds a level of confidence in diagnosing malignancy using cytological preparations. The aim of this study was to assess Ki67 staining in biliary epithelium obtained from patients with bile duct obstruction.

Aims & Methods: Brushings were obtained from the common bile duct during endoscopic retrograde cholangiopancreatography (ERCP) in patients presenting with biliary obstruction. After collecting the sample, the brush was placed imme-diately into a SurePath vial and shaken vigorously for 20 to 30 times to disrupt the cells. In the cytocentrifugation laboratory, the vial (with brush included) was agitated on a platform vortex for 10 minutes to shake the cells off the brush into the solution. The high cellular content enabled the preparation of multiple slides for IHC and these slides were reviewed independently by two senior cytopathologists.

Results: Thirty-four (34) consecutive patients with bile duct obstruction were included in the study. The cohort had a mean age of 70.2; 41% were female. Adenocarcinoma was identified in 19 (56%) and atypical/reactive cells in 9 (26%). Ki67 positive nuclei were present in 90–100% of the cells in malignancy cell clusters, while sheets of normal cells had positive nuclei in less than 20% of cells. Atypical cells sheets had an intermediate percentage range.

Conclusion: SP is superior to conventional slide-based cytology preparations in the diagnosis of malignant bile duct strictures. Advantages include ease of collect-}

ion, no requirement for a cytology technician, a sizable pellet of intact cells for the cytopathologist to examine and the ability to undertake IHC staining. Ki67 is a marker of cell division and cells stained with Ki67 are increased significantly in adenocarcinoma as confirmed by this study. The presence of a large number of cells stained with Ki67 as well as the pattern of intracellular staining adds a level of confidence for the cytopathologist to diagnose malignancy, particularly when there is no clinical or scan evidence of a tumour mass. Early diagnosis is the key for curative surgery and specific cell tumour markers &/or their pattern may impact significantly on the outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. Meredith C, Baird, P. Diagnostic yield of SurePath (SP) and conventional smear preparations (CSP) for brush cytology obtained from the common bile duct (CBD) in patients undergoing endoscopic retrograde cholangiopancreate-}


P0088 IMPACT OF PALLIATIVE BILIARY DRAINAGE BETWEEN METAL STENT AND PLASTIC STENT ON SURVIVAL RATE IN UNRESECTABLE DISTAL MALIGNANT BILIARY STRICTURE IN SOUTH OF THAILAND

P. Chattaranapakitakul, B. OvatIlarnpon, N. Nethitsunton
Faculty Of Medicine, Prince Of Songkla University, NCI Institute of Gastroenterology and Hepatology, Hatyai/Thailand

Contact E-mail Address: tanawat_kuey@hotmail.com

Introduction: Palliative biliary drainage was used to improving obstructive jaun-
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dice, nutritional status, quality of life along with survival rate in unresectable distal malignant biliary stricture patients. The ERCP with biliary drainage with or without systemic chemotherapy are mainstay of treatment in these patients. The benefits of biliary stent drainage which are different in cost on survival rate, nutritional status and efficacy of biliary drainage in DMBS patients are still questionable in limit health budget country.

Aims & Methods: We aimed to assess the impact of endoscopic palliative biliary drainage stents on survival rate, nutritional status and efficacy of biliary drainage of patients in distal biliary malignant stricture patients. All of the computerized medical records of distal biliary malignant stricture patients, who were undergoing endoscopic biliary drainage from January 01, 2012 to December 30, 2015 in Songklanagarind Hospital were retrospectively review. ERCP with biliary drainage stents was undertaken at the discretion of attending physicians. The overall survival rate, nutritional status (body weight), efficacy of biliary drainage (level of total bilirubin) after biliary drainage between the metal stent group, plastic stent group and plastic stent followed with metal stent group were compared.

Results: Sixty eight patients (45 males, mean age 63.7±14.8 years) were enrolled, 35 patients were classified into the plastic stent group, 18 patients were classified into the metal stent group, which are different in cost on survival rate, and 15 patients were classified into the plastic stent followed to metal stent group. Demographic data, primary malignancy, tumor staging and ECOG score, initial total bilirubin and stricture length were similar between 3 groups. The median survival time was 5.4 months for 95% CI (3.2–8.5) and overall survival rate was lowest in the metal stent group (median 3.2 months 95% CI 1.8–6.9). Mean weight reduction and the declining of total biliary after biliary drainage were not significantly different between biliary
Aims & Methods: Between January 2006 and March 2016, a total of 185 advanced or recurrent BTC patients receiving a first line systemic chemotherapy for at least two cycles were retrospectively studied. Serum CA 19-9 was measured at baseline (CA19-9_Pre) and after two cycles of chemotherapy, and patients were categorized into three groups based on CA19-9 response: CA19-9 decrease group (≥30% decrease), stable group (<30% decrease and ≥20% increase) and increase group (≥20% increase). The Cox proportional hazards model was used to analyze the prognostic factors for OS and PFS, using the landmark method.

Results: The primary tumors were located as follows: 68 (37%) in intrahepatic cholangiocarcinoma, 47 (26%) in ampulla cancer, 13 (7%) in neuroendocrine tumor, and 12 (7%) in recurrent biliary tract cancer. The median CA 19-9 levels at baseline and after two cycles were 264 IU/mL and 194 IU/mL, respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median OS obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median PFS and OS were 5.2 months (95% confidence interval [CI], 2.9–13.2) and 13.71 months (95% CI, 11.38–22.06). There was a statistically significant trend for CA 19-9 and RECIST responses (p = 0.03). Compared with CA19-9 decrease group, hazard ratios for stable and increase groups were 1.22 (95% CI, 0.79–1.87) and 2.54 (95% CI, 1.68–3.85) for OS (p for trend 0.15). Multivariable analyses showed that CA19-9 response was prognostic both for OS and PFS in addition to CA19-9_Pre and performance status.

Conclusion: CA 19-9 response after two cycles as well as baseline served as a prognostic factor for OS and PFS in patients with advanced and recurrent BTC on systemic chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0089 PROGNOSTIC VALUE OF EARLY CA19-9 RESPONSE DURING CHEMOTHERAPY IN PATIENTS WITH ADVANCED OR RECURRENT BILIARY TRACT CANCER
N. Takahara1, Y. Nakai2, K. Saito3, T. Nakamura4, T. Sato2, T. Takeda2, R. Uchino1, S. Mizuno1, H. Kogure1, S. Matsubara1, M. Tada1, H. Isayama2, N. Takahara1

Aim: The aim of this study was to investigate the feasibility and clinical impact of early CA19-9 measurement in patients with advanced or recurrent BTC receiving systemic chemotherapy. A total of 165 patients receiving two cycles of chemotherapy were analyzed.

Method: Serum CA 19-9 levels were measured at baseline and after two cycles of chemotherapy. CA 19-9 response was categorized into three groups: increase (≥20% increase), stable (0%–20% increase), and decrease (<20% decrease). Kaplan-Meier survival analysis and multivariate Cox regression analysis were performed to identify the prognostic factors for overall survival (OS) and progression-free survival (PFS).

Results: A total of 165 patients were included in the analysis. The median OS and PFS were 15.6 months and 6.8 months, respectively. The 1-year OS and PFS rates were 63% and 50%, respectively. The median CA 19-9 levels at baseline and after two cycles were 81 IU/mL and 42 IU/mL, respectively. The CA 19-9 decrease group had a significantly better OS (median 19.8 months vs. 12.6 months, p = 0.007) and PFS (median 7.8 months vs. 4.9 months, p = 0.02) compared to the other groups. Multivariate analysis showed that CA 19-9 response was an independent predictor of OS and PFS.

Conclusion: Early CA 19-9 measurement during chemotherapy could be a potential prognostic factor for OS and PFS in patients with advanced or recurrent BTC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0090 BILIARY DRAINAGE IN PATIENTS WITH UNRESECTABLE PERIHILAR CHOLANGIOCARCINOMA HAS A VERY HIGH COMPLICATION AND FAILURE RATE
M. Gaspersz1, J. L.a. Van Vugt1, E. Roos2, R.J. S. Coelen2, J. Vugts1, E. Belt3, J. De Jonge1, W. Polak1, J.W. Poley4, F. E.j.a. Willemssen5, L. Hol4, T. M. Van Gulik6, J. N.m. Ijzermans1, B. Groot Koerkamp1

Aim: The aim of this study was to investigate the feasibility and clinical impact of early CA19-9 measurement in patients with advanced or recurrent BTC receiving systemic chemotherapy. A total of 165 patients were included in the analysis. The median OS and PFS were 15.6 months and 6.8 months, respectively. The 1-year OS and PFS rates were 63% and 50%, respectively. The median CA 19-9 levels at baseline and after two cycles were 81 IU/mL and 42 IU/mL, respectively. The CA 19-9 decrease group had a significantly better OS (median 19.8 months vs. 12.6 months, p = 0.007) and PFS (median 7.8 months vs. 4.9 months, p = 0.02) compared to the other groups. Multivariate analysis showed that CA 19-9 response was an independent predictor of OS and PFS.

Conclusion: Early CA 19-9 measurement during chemotherapy could be a potential prognostic factor for OS and PFS in patients with advanced or recurrent BTC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
and data on the biliary drainage procedure were collected from medical records. Definitions of failure of drainage or other severe drainage related complications are shown in table 1.

Results: In total, 187 patients were included. Initial drainage was performed in a non-referral center in 125 patients (66.8%). The initial drainage procedure was endoscopic in 158 patients (84.5%) and percutaneous in 29 patients (15.5%). A stent was placed in 91 patients (61.5%) at the initial drainage procedure. The highest bilirubin level in the 2 weeks prior to drainage was 248 (IQR 138–377) µmol/L. Only 14 (8.1%) patients had cholangitis prior to the initial drainage procedure. Failure of drainage or other severe complications related to the initial drainage procedure were noted in 117 (62.6%) patients. Failure of drainage or reintervention was most common and was noted in 85 patients (50.8%). Bile duct injury occurred in 3 (1.6%) patients, acute pancreatitis in 5 (2.7%) patients and cholangitis in 11 (5.9%) patients. Two (1.1%) patients had cardiopulmonary complications and 1 (0.5%) patient had a duodenal perforation. The median period until the initial and second drainage procedure was 13 (5–31) days and the bilirubin level dropped below 50 µmol/L in 27 patients (14.4%). After initial drainage, 20 patients (10.7%) died within 30-days and 66 patients (35.3%) within 90 days. The median OS after initial drainage was 6.6 (95% CI: 2.0–15.2) months.

Conclusion: Patients with unresectable PC on imaging have a very high failure and complication rate after initial biliary drainage.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0093 UNILATERAL VERSUS BILATERAL STENT-IN-STENT PLACEMENT OF METAL STENTS FOR MALIGNANT HILAR BILIARY OBSTRUCTION

H. Toyonaga, Y. Taniguchi, T. Inokuma
Gastroenterology, Kobe City Medical Center General Hospital, Kobe/Japan
Contact E-mail Address: toyonaga.pc@gmail.com

Introduction: Endoscopic biliary stenting is widely accepted as effective palliation therapy for unresectable malignant hilar biliary obstruction (MHBO). Although draining more than 50% of liver volume is associated with better outcomes, it is technically difficult. We retrospectively reviewed 23 consecutive patients with MHBO who underwent endoscopic biliary drainage with self-expandable metal stents (SEMS) at our institution from March 2012 to March 2017. Unilateral metal stenting was performed in 15 patients (Uni group) and bilateral metal stenting was performed in 18 patients (Bi group). In the Uni group, we placed one SEMS. In the Bi group, we placed crossed wired metal stents with the SEMS technique. Technical success rates, complication rates and stent patency were compared between groups.

Results: There were no significant differences between the Uni group and the Bi group in technical success rate (100% vs. 94%), complication rate (0% vs. 0%), stent occlusion rate (15% vs. 18%) or median stent patency period (102.5 days vs. 98 days). There was no significant difference in cumulative stent patency between the groups (p = 0.669).

Conclusion: Endoscopic bilateral SEMS placement of metal stents for palliative treatment of MHBO had a high technical success rate and low complication rate, similar to those of unilateral placement.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0094 CLINICAL ASSESSMENT OF THE SAFETY AND EFFICACY OF A NOVEL BIODEGRADABLE STENT IN PATIENTS WITH BILIARY OBSTRUCTION: A PILOT STUDY

H. Olthman1, N.Y. Yaacob2, E.J. Koslak3, R. Jarmin1, Z. Mohamed2
1Surgery, UKM Medical Centre, Kuala Lumpur/Malaysia
2Radiology, UKM Medical Centre, Kuala Lumpur/Malaysia
Contact E-mail Address: hairirol@gmail.com

Introduction: The commonest indication for biliary stent is for the treatment of obstructive jaundice and for the management of bile leak. The currently available stents are made of either plastic or metal alloy. The stents can be inserted endoscopically to provide internal drainage of the bile into the duodenum. Among the disadvantages of plastic stents are recurrences of jaundice due to biofilms formation, which require a repeat ERCP procedure to remove the stent before 3 months. We have embarked to study the safety and feasibility of a biodegradable biliary stent (BiBS), which can treat biliary obstruction without the need to undergo a repeat endoscopic procedure to remove the stent.

Aims & Methods: This is a pilot study enrolling 30 subjects with symptomatic jaundice and pruritus caused by either benign or malignant biliary obstructions that were amenable to treatment by ERCP guided stenting. Primary objective was technical success and safety. Procedural and technical successes were assessed during the stenting procedure. Adverse events or complications were monitored throughout the studies. The secondary endpoints were clinical success, which was measured by a reduction of at least 20% of the initial serum bilirubin level at Day 7 post stenting. A simple self-assessment scale from 0 to 10 was used to assess quality of life before and after the stenting.

Results: 30 patients had the Biodegradable Biliary Stent (BBS) implanted. 18 patients (60%) were males, the mean age was 56.9 years, 26 patients (86.7%) had benign biliary duct disease and 4 (13.3%) patients had malignant condition.

Disclosure of Interest: All authors have declared no conflicts of interest.
Table 1: Patients’ Demography

<table>
<thead>
<tr>
<th>Gender: males, females</th>
<th>n = 30 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± sd)</td>
<td>56.9 ± 18.9</td>
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9 patients had the fast and medium degradation stents respectively and 12 had the slow degradation stents implanted. All stents were 3-mm in diameter and the length ranges from 60 to 120 mm depending on the level of obstruction. It took an average of 29.6 minutes to complete each procedure, and the mean stent deployment duration was 6.0 minutes. It ranges from 13.5 minutes in the initial phase and improved to 1.5 minutes in the later phase. Biliary sphincterotomy was not made in single biodegradable stents, but however, all patients with biliary stone had sphincterotomy to facilitate retrieval of the stones. Serum bilirubin level (SBL) showed reduction of 52% from the mean SBL of 54.9 mol/L prior to stenting to 26.2 mol/L at Day 7. Quality of life score improved from 2.0 up to 8.5 after stenting. The BBS ranks high in terms of loadability, tractability over guide-wire, and pushability with push catheter. There was minimal force required to implant it and it has good visibility by fluoroscopy. The BBS is as flexible as the conventional plastic stents and can be accurately deployed under fluoroscopy. Technical success or completion of the ERCP and stent deployment was achieved in all 30 patients.

Conclusion: This pilot study has shown encouraging results. It benefit the patient to avoid the burden of a second ERCP procedure for plastic stent removal. However, these results should be interpreted with caution as this is a pilot study to assess the safety and efficacy of the biodegradable stent on limited number of volunteers with symptomatic jaundice. We plan to conduct a phase 2 study involving a larger number of cohorts with a more specific indication of benign and malignant biliary stricture.

Disclosure of Interest: H. Othman: The Biodegradable Biliary Stents used for this study is sponsored by ang International GmbH, Winsen, Germany. The authors have no financial relationship with the company which could inappropriate influence or bias the content of this presentation. All other authors have declared no conflicts of interest.

References

MONDAY, OCTOBER 30, 2017

P0095 TOLL-LIKE RECEPTOR 5 IS ESSENTIAL FOR THE ABLATION OF LIVER AND PANCREATIC STELLATE CELLS
L. T. Bülüm1, D. Bartsch2, T.M. Gress3, M. Buchholz4, T. T. Wissniowski2, P. Di Fazio5
1Department Of Visceral Thoracic And Vascular Surgery, Philipps University Marburg, Marburg/Germany
2Klinik Für Gastroenterologie, Endokrinologie, Stoffwechsel Und Infektologie, Philipps Universität Marburg, Marburg/Germany
3Department Of Internal Medicine 1, Universitaetsklinik Ulm, Ulm/Germany
4Department Of Visceral Thoracic And Vascular Surgery, Philipps University Marburg, Marburg/Germany
5Contact E-mail Address: Boehmis@students.uni-marburg.de

Introduction: Stellate cells contribute significantly to the development of several diseases. In particular, liver stellate cells are responsible for liver fibrogenesis and further for cirrhosis that culminates into cancer development eventually. In pancreas, it is known that stellate cells sustain the tumor cells via autophagy mechanism.

Aims & Methods: This study aimed to clarify the involvement of Toll-like receptor 5 (TLR5) in the activation of human stellate cells. LX-2 liver stellate cells and HPSC (human pancreatic stellate cells) were treated for 48 hours with 2.5 ng/ml TGF-beta 1. The analysis of activation markers was performed by RT-qPCR, western blotting and immunofluorescence. Real-time cell monitoring with Incucyte was performed. TLR5 PCR Array was performed. TLR5 knock down was obtained with commercially validated siRNAs.

Results: Treatment with 2.5 mg/ml TGF-beta 1 caused the activation of both LX2 and HPSC cells. Over-expression of alpha-smooth muscle actin (a-SMA) and collagen 1 (COL1A1) transcripts was observed. The protein level of a-SMA and COL1A1 significantly increased also. Interestingly, SNAI1, SLUG, TLR3 and TLR4 transcripts were induced by treatment with TGF-beta 1 in both cell lines. SNAIL 1 was over-expressed at protein level also. Knock down of TLR5 neutralized the activity of TGF-beta 1 by keeping the expression of the above markers at basal level or even not expressed.

Conclusion: TLR5 for the first time, has been identified as key player of the activation of stellate cells. Its contribution represents a new aspect in terms of interaction between immune system and stellate cells and could represent a potential new target for the diseases of the gastrointestinal tract involving the activity of stellate cells. TLR5 and its natural agonist flagellin could be a key link between impairment of microbiota and organo-fibrosis in the gastrointestinal tract.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0096 THE IMPAIRED FUNCTION OF THE PLASMA MEMBRANE CA2+ PUMP RESULTS IN CA2+ OVERLOAD AND CELL DAMAGE IN FCTR KNOCK OUT PANCREATIC DUCTAL CELLS
T. Madacsy1, J. Fanczal1, A. Schmidt1, P. Pallagi1, Z. Rakoczay2, P. Hegyi2, J. Malátki1, M. Hohwieler1,2, Z. Rágó3, M.A. Gray5, M. Hohwieler1,2, A. Kleger1, J. Malátki1, H. Othman1
1First Department Of Medicine, University of Szeged, Szeged/Hungary
2Department Of Pathophysiology, University of Szeged, Szeged/Hungary
3Centre For Translational Medicine, University of Pecs, Pecs/Hungary
4Department Of Pathology, University of Szeged, Szeged/Hungary
5University Medical School, Newcastle/United Kingdom
6Ulm University Hospital, Ulm/Germany
7Internal Medicine 1, Universitätsklinik Ulm, Ulm/Germany

Contact E-mail Address: tamaramadacsy@gmail.com

Introduction: The cystic fibrosis transmembrane conductance regulator (CFTR) has a major role in pancreatic ductal secretion and it’s genetic defects damage the pancreas. It is known that intracellular Ca2+ homeostasis is disturbed in bronchial epithelial cells in cystic fibrosis (CF), but the connection of CFTR and the intracellular Ca2+ signaling has never been suggested in pancreatic damage in CF.

Aims & Methods: Our aim was to characterize the Ca2+ homeostasis of CFTR-deficient PDC. Wild type (WT) and CFTR knockout (KO) mouse pancreatic ductal and acinar cells and iPSC (induced pluripotent stem cell) derived human organoids from 2 CF patients and controls, human CF pancreas cell line (CFPAC-1; ΔF508 mutant) were used for intracellular Ca2+ measurements. Mitochondrial membrane potential (ΔΨm) and mitochondrial morphology was assessed in isolated pancreatic ducts. Immunofluorescent staining and quantitative PCR measurements were performed to detect changes of mRNA and protein expressions.

Results: The plateau phase of the agonist-induced Ca2+ signal was elevated in CFTR-deficient PDC, which was caused by decreased function of the plasma membrane Ca2+ pump (PMCA). The functional inhibition of TLR5 had no effect on the PMCA activity. Human CF organoids have shown decreased PMCA function compared to control while the 24h treatment of the CF organoids with VX-809 have restored the PMCA function to the control level. Similarly native CFPAC-1 cells and PDEC treated with siRNA to inhibit the expression of CFTR showed the same PMCA dysfunction. Viral transfection of CFPAC-1 with CFTR gene completely restored PMCA function. Sustained [Ca2+]i levels decreased ΔΨm and induced cytochrome c release in CFTR KO PDEC without significant alterations in mitochondrial morphology.

Conclusion: Dysfunction of PMCA leads to disturbed Ca2+ homeostasis in CFTR-deficient PDC and the consequent cellular Ca2+ overload impairs mitochondrial function contributing to the pancreatic damage in CF.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0097 EXPDF IMPACTS PANCREATIC DIFFERENTIATION OF HUMAN PLURIPOTENT STEM CELL DERIVED PANCREATIC ORGANOID
M. Brunej1, M. Hohwieler1,2, T. Seuffert1,2, A. Kleger2
1Ulm University Hospital, Ulm/Germany
2Internal Medicine 1, Universitätsklinik Ulm, Ulm/Germany

Contact E-mail Address: alexander.kleger@uni-ulm.de

Introduction: Given their capability to differentiate to every cell type of the human body, human induced pluripotent stem cells (hiPSCs) provide a unique platform for preclinical and developmental studies and regenerative medicine. The use of a pancreatic progenitor (PP) cells from pluripotent stem cells follows the sequential induction of virtually pure definitive endoderm (DE), foregut endoderm (GTE) and pancreatic endoderm (PE). We have recently reported the generation of a novel three-dimensional pancreatic organ culture system that generates functional acinar-/ductal-like structures from pluripotent stem cells (Hohwieler et al, GUT. 2016).

Aims & Methods: In the current study we implemented this culture system to understand the role of exocrine differentiation and proliferation factor (Expdf), a signalling molecule proposed to be involved pancreatic differentiation in zebrafish. CrisprCas9 technologies were used to ablate Expdf in human embryonic stem cells, while a piggy bac engineering approach allowed us timed expression to understand the role of exocrine differentiation and proliferation factor (Expdf).

Results: First, a limited role of Expdf was observed until the PE stage, while PP formation was strongly diminished. Moreover, a dramatically altered organoid morphology was observed in both knockout lines leading to mostly cystic structures. Phenotyping for ductal and acinar lineage allowed to investigate these
changes in more detail and genome wide expression profiling helped us to under-
stand the role of Expdf in more detail.

Conclusion: Thus, we report a novel signalling molecule playing a critical role 
during human pancreas development based on a pluripotent stem cell differen-
tiation platform.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Human pluripotent stem cell-derived acinar/ductal organoids generate 
pancreas upon orthotopic transplantation and allow disease modelling. 
Hohlweiler M, Illing A, Hermann PC, Mayer T, Stockmann M, Perkhofer L, 
Eiseler T, Antony JS, Müller M, Renz S, Kuo CC, Liu Q, Sendler M, Brenning M, 
Kleidermann F, Smékel A, Zercher M, Leischmayer M, Rosendahl J, Zenke M, 
Sainz B Jr, Mayerle J, Costa IG, Seufferlein T, Kornmann W, Magnus M, Liebau 

P0098 MELATONIN METABOLITE: N1-ACETYL-N2-FORMYL-5-METHOXYKNYURAMINE STIMULATES PANCREATIC ENZYME SECRETION VIA CCK RELEASE. STUDY ON THE RATS

J.M. Jaworek
Dept. Of Medical Physiology, Jagiellonian University CM, Krakow/Poland

Contact E-mail Address: jolanta.jaworek@uj.edu.pl

Introduction: N-acetyl-N\textsuperscript{2}-formyl-5-methoxykynuramine (AFMK), melatonin 
metabolite was demonstrated recently as a putative pancreatic calcium 
regulator against acute inflammation. AFMK significantly attenuated acute pancreatitis; 
evertheless, its effect on pancreatic exocrine function has not been investigated yet.

Aims & Methods: 1. To investigate the effects of intraduodenal (i.d.) application of 
AFMK on pancreatic enzyme secretion under basal conditions and following the 
stimulation of this secretion with diversion of pancreatic-biliary juice (DPBJ) 
and to examine the role of CCK in this process. 2. To assess the effect of AFMK on 
CCK receptor in pancreatic acinar cell line AR42J. Material and methods: For in vivo study Wistar rats weighing 300 g were employed. Under pentobarbi-
tane anesthesia the animals were surgically equipped with silicone catheters, 
inserted into pancreatic-biliary duct, and into duodenum. AFMK (5.10 mg/kg i.d.) 
was given to the rats under basal conditions or following stimulation of pancreatic 
secretion with DPBJ. Lorglumide, the CCK1 receptor antagonist (1 mg/kg i.d.) 
was administered 15 minutes prior to the application of AFMK. Samples of pancreato-biliary juice were collected to measure the amylase outputs. The blood samples were taken for determination of CCK by ELISA kit. For in vivo study AR42J cells were incubated in presence of AFMK alone or in combination with CCK. The protein signal of CCK receptor 
was determined by Western blot.

Results: AFMK given i.d. produced the dose-dependent increases of pancreatic 
amylase secretions both; unstimulated, as well as that induced by DPBJ. The rises 
were determined by Western blot.

Conclusion: our results confirmed the functional activity of the TRPM2 channel 
in pancreatic acinar cells. In our further investigations we aim to clarify the 
pathogenic role of TRPM2 in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0100 INVESTIGATION OF THE PANCREATIC DUCTAL ION SECRETION IN PANCREATIC DUCTAL ORGANOIDS CULTURES

R. Molnar\textsuperscript{1}, L. Alsardil\textsuperscript{1}, J. Fanczal\textsuperscript{1}, T. Madacsy\textsuperscript{1}, P. Hegyi\textsuperscript{1}, J. Male\textsuperscript{1}
\textsuperscript{1}First Department Of Medicine, University of Szeged, Szeged/Hungary

Contact E-mail Address: molnar.reka.89@gmail.com

Introduction: Pancreatic ductal fluid and HCO\textsubscript{3}\textsuperscript{-} secretion are crucially impor-
tant in the physiology and pathophysiology of the exocrine pancreas. However, 
the investigation of human pancreatic secretory processes is great challenge due to the 
limited access to human pancreatic ductal cells. The recently developed three-
dimensional pancreatic organoid cultures (OC) may help to overcome this lim-
itation. However, the ion secretory processes in pancreatic OC is not known.

Aims & Methods: Our aim was to characterize the ion transport processes in 
mouse pancreatic OCs. Mouse pancreatic ductal fragments were isolated by 
enzymatic digestion. The isolated ducts were grown in Matrigel on 37°C for a 
week in OC media. Changes of the intracellular pH was measured to characterize 
the ion transporter activities of the epithelial cells in OC.

Results: Basolateral administration of 20 mM NH\textsubscript{4}Cl in standard HEPES or 
CO\textsubscript{2}/HCO\textsubscript{3}\textsuperscript{-} buffered solution resulted in rapid intracellular alkalization, 
which was followed by a recovery phase. Removal of NH\textsubscript{4}Cl induced rapid 
acidification followed by regeneration to the resting pH levels. The regeneration 
phase was inhibited by the removal of extracellular Na\textsuperscript{+}. The administration of 
10 mM CFTPM\textsubscript{172}, a selective inhibitor of cystic fibrosis transmembrane con-
ductor regulator decreased the regeneration from alkali load. Basolateral 
administration of 20 mM amiloride and 20 mM H\textsubscript{2}DIDS decreased the intracel-
icular pH suggesting the activity of Na\textsuperscript{+}/H\textsuperscript{+} exchanger and Na\textsuperscript{+}/HCO\textsubscript{3}\textsuperscript{-} cotrans-
porter on the basolateral membrane.

Conclusion: The ion transport activities in mouse OC are similar to those observed 
in freshly isolated primary tissue. This suggest that OC will be suitable 
to study human ductal epithelial ion transport.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0101 INVESTIGATION OF THE ORAII MEDIATED CA\textsuperscript{2+} ENTRY IN MOUSE PANCREATIC DUCTAL CELLS

M. Görög\textsuperscript{1}, A. Grassalkovich\textsuperscript{1}, A. Balázs\textsuperscript{1}, P. Pallagi\textsuperscript{1}, P. Hegyi\textsuperscript{1}, J. Male\textsuperscript{1}
\textsuperscript{1}First Department Of Medicine, University of Szeged, Szeged/Hungary

Contact E-mail Address: g.mariett@gmail.com

Introduction: Acute pancreatitis (AP) is the most common inflammatory disorder 
in the gastrointestinal tract with an overall mortality of 20–30% in severe cases. 
The treatment of AP is not resolved yet, urging the identification of novel drug 
targets. Toxic cellular Ca\textsuperscript{2+} overload was highlighted as a key event in pancreatic 
acinar and ductal cells during the pathogenesis of AP. In addition, the inhibition 
of Orai1 in pancreatic acinar cells markedly decreased the Ca\textsuperscript{2+} toxicity and 
the severity of AP. However, We have no information regarding the role of Orai1 
in pancreatic ductal physiology or pathophysiology.

Aims & Methods: Wild type FVB/N mice were used for the isolation of pancreatic 
ductal fragments. The intracellular pH and Ca\textsuperscript{2+} level of the pancreatic 
ductal cells (PDC) were measured by microfluorimetry. The effect of selective Orai1 
inhibitors provided by CalciMedica was evaluated.

Results: The tested compounds dose-dependently inhibited Ca\textsuperscript{2+} influx through 
the carbachol induced Ca\textsuperscript{2+} signal in PDC. Inhibition was complete at a con-
centration of 10 mM (CM-B: 99.87%, CM-C: 95.29%). Next, endoplasmic reti-
culum Ca\textsuperscript{2+} stores were depleted with cyclopiazonic acid and the inhibition of 
store-operated Ca\textsuperscript{2+} entry (SOCE) was investigated after the re-addition of 
extracellular Ca\textsuperscript{2+}. Under those conditions CM-B and CM-C significantly, but not 
dramatically, decreased SOCE in PDC (55.96% and 55.03% respectively). The 
removal of extracellular Na\textsuperscript{+} to abolish activity of the Na\textsuperscript{+}/Ca\textsuperscript{2+} exchanger 
had no effect on the inhibition of SOCE by CM-B or CM-C. We also showed that 
the inhibition of Orai1 has no effect on the basal secretion of HCO\textsubscript{3}\textsuperscript{-} by PDC, which is the main physiological function of these cells.

Conclusion: We showed that Orai1 has a significant role in the Ca\textsuperscript{2+} signaling of 
PDC. In the next step we will evaluate the pathophysiological relevance of the 
channel.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0102 ACUTE PANCREATITIS OF UNKNOWN ORIGIN AND IDIOPATHIC JUVENILE PANCREATITIS IN SWEDEN

M. Vujasinovic\textsuperscript{1}, F. Lindgren\textsuperscript{2}, S. Haas\textsuperscript{1}, R. Valente\textsuperscript{1}, S. Ghazi\textsuperscript{3}, N. Kartalis\textsuperscript{4}, 
R. Pozzi\textsuperscript{4}, M. Del Chiaro\textsuperscript{5}, P. Bauer\textsuperscript{6}, C. Verbeke\textsuperscript{3}, H. Witt\textsuperscript{7}, U. Arnelo\textsuperscript{1}, J.- 
Löhr\textsuperscript{8}
\textsuperscript{1}Center For Digestive Diseases, Karolinska University Hospital, Stockholm/ 
Sweden

Contact E-mail Address: molnar.reka.89@gmail.com

Disclosure of Interest: All authors have declared no conflicts of interest.

A194 United European Gastroenterology Journal 5(5S)
Aims & Methods: We searched factors to predict hospital mortality in early stage of severe acute pancreatitis. We analyzed medical records of patients who were diagnosed with severe acute pancreatitis and pancreatic cancer, which had been registered within unknown etiology (PEUE) at the Center for Digestive Diseases at Karolinska University Hospital from January 2008 to December 2016.

Results: During the observation period, 44 patients (17 male and 27 females) were registered with the ICD code chronic or relapsing pancreatitis, and onset of symptoms before the age of twenty. At time of first visit, the mean age was 36.7±26.9 years, range 24–57. The average period between the occurrence of first symptoms and diagnosis was 14.0 years (range 1–39 years). All patients (100%) clinically presented with recurrent acute pancreatitis. There were 28 (63.7%) patients with genetic alterations. Five out of 28 genetic positive patients (17.9%) had a definitive diagnosis of genetic etiology of pancreatitis. Seven out of 28 genetic positive patients (25%) had complications: in five patients endoscopic treatment due to pancreatic duct stenosis was performed; one patient had necrotic and bile duct stenosis and one patient, female, age 28, CFTR heterozygous mutation) a pancreatic tumor (mucinous cystadenoma with high dysplasia that was successfully surgically treated by resection). One patient died due to non-pancreatic related disease (kidney cancer). None of the patients reported alcohol overconsumption. Four out of 28 genetic positive patients (14.3%) were active smokers. Fecal elastase-1 (FE-1) was tested in 28 (63.6%) patients: 16 (57.1%) in genetic positive and 12 (75%) in genetic negative group of patients. Pancreatic exocrine insufficiency (PEI) was found in 5 out of 12 (41.7%) of genetic negative patients and in 5 out of 16 (31.2%) genetic positive patients. Average age at onset of PEI was 38 years (range 27–53). Diabetes mellitus (DM) was diagnosed in one patient in group with genetic alterations and 2 patients in group without genetic alterations.

Conclusion: We found high proportion of genetic alterations in patients with juvenile pancreatitis and PEUE. In patients in whom pancreatitis remains unexplained after excluding the most of other etiologies and presence of genetic alteration, hereditary pancreatitis seems as reasonable explanation even in presence of common bile duct stones. A number of patients with these factors require transport to a hospital with intensive care unit.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0103 THE FACTORS FOR PREDICTING HOSPITAL MORTALITY IN EARLY STAGE OF SEVERE ACUTE PANCREATITIS

M. Horibe1, M. Sasaki2, M. Sanui3, H. Sawano4, T. Goto5, T. Ikeura6, T. Hamada7, E. Iwasaki1, T. Kanai1, T. Mayumi8
1Keio University School of Medicine, Tokyo/Japan
2National Cancer Center Hospital, Tokyo/Japan
3Hachi Medical University Saitama Medical Center, Saitama/Japan
4Osaka Satetsukai Senri Hospital, Osaka/Japan
5Hiroshima City Hiroshima Citizens Hospital, Hiroshima/Japan
6Kansai Medical University, Osaka/Japan
7Gastroenterology, The University of Tokyo, Tokyo/Japan
8School of Medicine University of Occupational and Environmental Health, Fukuoka/Japan

Contact E-mail Address: ariese24nsius@yahoo.co.jp

Introduction: Severe acute pancreatitis has high mortality and needs intensive care. However it is difficult to stratify the severity of acute pancreatitis in early stage. Therefore revised Atlanta classification requires persistent organ failure lasting at least 48 hours.

Aims & Methods: We searched factors to predict hospital mortality in early stage of severe acute pancreatitis. This was a retrospective cohort study of all consecutive patients with severe acute pancreatitis who admitted at 44 institutions between June 1, 2009 and December 31, 2013. We evaluated ten factors that associated with mortality in previous study.

Odds ratios and 95% confidence intervals

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds ratio</th>
<th>95% Confidence Interval</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory failure</td>
<td>3.13(2.01–4.89)</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Advanced age</td>
<td>2.64(1.78–3.93)</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Renal failure</td>
<td>2.02(1.29–3.15)</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>High lactate dehydrogenase</td>
<td>1.63(1.03–2.58)</td>
<td>0.04</td>
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</tr>
</tbody>
</table>

Results: The mortality was 12.7% (142/1114) patients. All ten factors were associated with mortality in univariate analysis. In multivariable analysis, four factors: namely, "partial pressure of oxygen in blood <60 mmHg (room air) or mechanical ventilation", "age >70 years", "blood urea nitrogen ≥40 mg/dL (or creatinine ≥2.0 mg/dL) or oliguria (daily urine output <400 mL even after administration of furosemide)" and "lactate dehydrogenase ≥2 times upper limit of the normal range" were associated with mortality. The other factors, namely "base excess ≤-3 mEq/L", "platelet count ≤100, 000/mm3", "serum calcium <7.5 mg/dL", "creatinine ≥15 mg/dL", "number of positive measures in systemic inflammatory response syndrome criteria ≥3" and "computed tomography grade" were not associated with mortality.

Conclusion: Advanced age, respiratory failure, renal failure and high lactate dehydrogenase could predict mortality in early stage of severe acute pancreatitis. Providing these factors require transport to a hospital with intensive care unit.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0104 EARLY OR LATE CHOLECYSTECTOMY IN MILD GALLSTONE PANCREATITIS? RESULTS FROM RANDOMIZED TRIAL

R. Noel1, U. Arnelo1, L. Enochsson2, G. Sandblom1
1Department Of Clinical Science, Intervention And Technology, Karolinska Institute, Stockholm/Sweden
2Department Of Surgical And Perioperative Sciences, Umeå University, Division of Surgery, Luleå/Sweden

Contact E-mail Address: rozh.noel@sll.se

Introduction: Cholecystectomy during the index admission may reduce risk of recurrent biliary events but concerns have been raised about complications if surgery is performed to early. The objectives of this study were to compare gallstone- and cholecystectomy-related complications and patient reported quality of life. The index admission is safe and feasible.

Results: Sixty-four patients between May 2009 and March 2017 were randomized into early index- or scheduled cholecystectomy (IC vs. SC). IC was performed before discharge or scheduled 6 weeks from the initial episode.

Conclusion: Cholecystectomy in mild gallstone pancreatitis is associated with increased risk for recurrent gallstone-related events. Cholecystectomy performed during the index admission is safe and feasible.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0105 COMPARISON OF PREDICTIVE SYSTEMS TO PREDICT MORTALITY IN SEVERE AND MODERATE PANCREATITIS ACCORDING TO THE REVISED ATLANTA CLASSIFICATION

Aparato Digestivo, Hospital Universitario de Fuenlabrada, Fuenlabrada/Spain

Contact E-mail Address: ruben.pique@salud.madrid.org

Introduction: The course of acute pancreatitis (AP) ranges from life threatening to mild disease, so accurately predicting its outcome is important. The revised Atlanta classification breaks the previous mild/severe dichotomy, so the absence of predictors of severity does not preclude a mild course. Studies designed according to the new classification evaluating existing predictors are still scarce.

Aims & Methods: Our study aims at evaluating the diagnostic accuracy of easily available prognostic scores to predict mortality, persistent organ failure (severe AP) and mild AP. We analyzed a single-center retrospective cohort including all adult patients admitted between 2010 and 2015. Patients with a previous episode of AP in the six months before admission, with other primary diagnosis at discharge and those partially attended at other institutions were excluded. Severity and local complications were defined according to the 2012 Atlanta classification. Four different scores (BISAP, SIRS, APACHE II and HAPS) and the following predictors: C reactive protein (CRP) at 24 h, hemocrit and BUN at admission
and their evolution after 24 were evaluated. Accuracy was measured using different concepts in operating characteristic analyses.

Results: Of the 817 eligible patients, 118 were excluded, most for a previous episode before admission. We analyzed 699 patients with a median age of 57.5 years (IQR: 45.1–72.7), 57.4% males. Most frequent comorbidities were: diabetes (10.5%), hypertension (8.6%) and COPD (7.7%). Median length of stay was 7 (5–10) days. Most common causes were: biliary (53.9%), idiopathic (21.8%) and alcoholic pancreatitis (14.3%). A CT scan was performed in 56.1% identifying local complications in 36.2% of them, acute fluid collections in 16.8%. There were 42 (6.6%) severe and 196 (28%) moderately severe cases. Overall mortality was 2.4% (1.5–2.9), and 7.2% (5–8.8) among severe cases. BUN at admission AUC: 0.88 [0.80–0.96], USG AUC: 0.88 [0.80–0.89] and EUS AUC: 0.87 [0.80–0.93]. BUN was more sensitive than all other predictors in predicting death. APACHE II presented the highest sensitivity, 100% (81.6–100%), while the BISAP score presented the highest specificity, 93.1% (90.6–94.8%). BUN at admission AUC: 0.89 [0.86–0.97], USG AUC: 0.87 [0.84–0.92] and EUS AUC: 0.87 [0.84–0.92] also presented the best performance. The BISAP score is the best predictor in the third space. However, there is a lack of consensus regarding the details of optimal fluid administration such as the type of fluid, infusion rate and volume of administration, and the physiologic goals of fluid resuscitation4.

Conclusion: The severity of acute pancreatitis varies widely, from a mild self-limited disease to one with a severe clinical course complicated by multiple organ failure. No pharmacologic therapy has been shown to improve the prognosis of patients with severe acute pancreatitis, while the quality of supportive care including early fluid resuscitation is critically important1, 2. Fluid resuscitation maintains adequate intravascular volume by compensating for fluid shifts to the third space2. However, there is a lack of consensus regarding the details of optimal fluid administration such as the type of fluid, infusion rate and volume of administration, and the physiologic goals of fluid resuscitation4.

Aims & Methods: The aim of this study is to evaluate the association between the severity of acute pancreatitis as classified by the revised Atlanta classification1, 7 and the fluid accumulation. The primary outcome was in-hospital mortality. As a sensitivity analysis, we conducted an identical analysis using only the patients with severe acute pancreatitis. We performed subgroup analyses for patients diagnosed with severe acute pancreatitis based on the revised Atlanta classification7. One thousand seven-seventy patients were classified in the fluid <6000 ml group, and 201 patients classified in the fluid ≥6000 ml group. There were no significant differences between the two groups with regards to in-hospital mortality (fluid <6000 ml: 35.3%; fluid ≥6000 ml: 28.4%, p = 0.18). In multivariable logistic regression analysis, conversely fluid ≥6000 ml within the first 24 hours was significantly associated with reduced mortality (OR 0.58, 95%CI 0.34–0.98). We performed subgroup analyses for patients diagnosed with severe acute pancreatitis based on the revised Atlanta classification. One thousand seven-seventy patients were classified in the fluid <6000 ml group, and 201 patients classified in the fluid ≥6000 ml group. There were no significant differences between the two groups with regards to in-hospital mortality (fluid <6000 ml: 35.3%; fluid ≥6000 ml: 28.4%, p = 0.18). In multivariable logistic regression analysis, conversely fluid ≥6000 ml within the first 24 hours was associated with significantly less mortality (OR 0.56, 95% CI 0.32–0.98). The revised Atlanta classification accurately identifies those patients at higher risk of death. Among the available predictors of severity, BISAP and BUN at admission presented an excellent performance, with an AUC of nearly 0.9. New scores are needed to predict a mild course, as none of the available indexes presented an AUC >0.7. The HAPS score reached the highest specificity, 87.8% (83.91%), but presented a very poor sensitivity (28.9% [24.3–33.9%]).

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Table 1b AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Mortality. (AUC: Area under the curve. PPV: positive predictive value. NPV: Negative predictive value.

<table>
<thead>
<tr>
<th>Mortality</th>
<th>Cut-off values</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISAP ≥3</td>
<td>0.9 (0.83–0.97)</td>
<td>70.6% (64.96%–86.7%)</td>
<td>93.3% (89.5%–95.7%)</td>
<td>41.4% (25.9%–59.3%)</td>
<td>97.9% (95.3%–99.1%)</td>
<td></td>
</tr>
<tr>
<td>RANSON ≥4</td>
<td>0.85 (0.76–0.95)</td>
<td>88.2% (65.7–96.7%)</td>
<td>79% (73.5%–83.5%)</td>
<td>22.1% (13.8%–33.3%)</td>
<td>99% (86.4%–99.7%)</td>
<td></td>
</tr>
</tbody>
</table>

Aim & Methods: In this study, we aimed to evaluate the efficacy of serum phosphate as a prognostic factor for PEP in humans. Between January 2005 and December 2016, 176 patients who underwent serum phosphate test among patients with PEP were included in the study. Serum phosphate was measured between 12 and 24 hours after ERCP. PEP was defined as new abdominal pain with at least 3-fold increase in serum amylase or lipase levels. The severity of the pancreatitis was determined according to consensus guidelines.

Results: A total of 176 patients with mild (n = 69; 39.2%), moderate (n = 80; 45.5%), or severe (n = 27; 15.3%) PEP were included. Serum phosphate was associated with severity of PEP. Serum phosphate levels in mild, moderate and severe PEP were 3.0, 3.1, and 3.3 mg/dL, respectively (P = 0.035). In the linear regression analysis, only the serum phosphate was associated with the duration of hospitalization (P = 0.016). Hematocrit, blood urea nitrogen, and high sensitivity C-reactive protein were not significantly associated with admission duration.

Conclusion: According to our retrospective data, serum phosphate is associated with the severity of PEP, and its role as a prognostic factor for PEP can be considered.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Biological function of adenosine A2A receptors prevents post-ERCP pancreatitis (PEP). Previous animal study reported that serum phosphate correlated with severity of acute pancreatitis.

Aims & Methods: Our goal was to know the predicting ability of BISAP and Ranson in a European cohort with the updated classification of Atlanta 2012 validation. Patients diagnosed of AP in University Hospital Virgen de las Nieves from June 2010–June 2016 were included. BISAP was calculated on admission and Ranson was calculated with parameters of the first 48 hours. We assessed the presence of SAP and mortality, receiving operating curves (ROC) and area under the curve (AUC) were calculated, selecting the best cut-off value in terms of sensitivity, specificity, positive predictive value (VPP) and negative predictive value (NPV). Results: 269 patients were included. 52.8% female and 47.2% male, 17 presented SAP (6.3%), 8 deaths (3%). Etiology: 65% biliary, 10.4% alcoholic, post ERCP 3%, drugs related in 0.7%, metabolic in 1.1%, idiopathic 15.2%, mixed (alcoholic+biliary) 1.1% and others in 2.6% BISAP showed an AUC 0.9, with sensitivity of 70%, specificity of 94%, PPV 41.4%, NPV 97.9% and overall accuracy of 91.8% for the prediction of SAP. Regarding mortality prediction, it exhibited an AUC of 0.97, sensitivity of 100%, specificity 92%, PPV 27.6%, NPV 100% and accuracy 92.2% (Table 1a and 1b) RANSON showed AUC 0.85, sensitivity of 88% and specificity of 79%, PPV 41.4%, NPV 97.9% and overall accuracy of 91.8% for the prediction of SAP. Regarding mortality prediction, it exhibited an AUC of 0.97, sensitivity of 100%, specificity 92%, PPV 27.6%, NPV 100% and accuracy 92.2% (Table 1a and 1b). Biomarker and severity of the disease. Multicenter studies in European cohorts are needed to confirm our findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1a: AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Severe Acute Pancreatitis. (SAP: Severe acute pancreatitis. AUC: Area under the curve. PPV: positive predictive value. NPV: Negative predictive value.)
**Table 1a. AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Severe Acute Pancreatitis. (SAP) Positive predictive value. NPV: Negative predictive value.**

<table>
<thead>
<tr>
<th>Biomarker</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRP</td>
<td>0.79 (0.71–0.88)</td>
<td>58.8% (36.0%–78.4%)</td>
<td>83.3% (78.2%–87.4%)</td>
<td>19.2% (10.8%–31.9%)</td>
<td>96.8% (93.5%–98.4%)</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.82 (0.71–0.93)</td>
<td>64.7% (41.3%–82.7%)</td>
<td>86.1% (81.3%–89.8%)</td>
<td>23.9% (13.9%–37.9%)</td>
<td>97.3% (94.3%–98.8%)</td>
</tr>
<tr>
<td>BUN</td>
<td>0.83 (0.73–0.93)</td>
<td>64.7% (41.3%–82.7%)</td>
<td>86.9% (82.2%–90.5%)</td>
<td>25.4% (14.6%–39.4%)</td>
<td>97.3% (94.3%–98.8%)</td>
</tr>
<tr>
<td>CRP CRP</td>
<td>0.72 (0.60–0.83)</td>
<td>70.6% (46.9%–86.7%)</td>
<td>69.7% (63.8%–75.1%)</td>
<td>13.6% (8%–22.3%)</td>
<td>97.2% (93.7%–97.8%)</td>
</tr>
</tbody>
</table>

**Table 1b. AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Mortality. (AUC) Area under the curve. PPV: Positive predictive value. NPV: Negative predictive value. BUN: Blood urea nitrogen measured on admission.**

<table>
<thead>
<tr>
<th>Biomarker</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine</td>
<td>0.87 (0.78–0.96)</td>
<td>87.5% (52.9%–97.2%)</td>
<td>82.7% (77.6%–86.8%)</td>
<td>13.5% (6.7%–25.3%)</td>
<td>99.5% (97.4%–99.9%)</td>
</tr>
<tr>
<td>BUN</td>
<td>0.85 (0.70–0.99)</td>
<td>75% (40.9%–92.9%)</td>
<td>84.7% (78.8%–88.5%)</td>
<td>13% (6.1%–25.7%)</td>
<td>99.1% (96.8%–99.8%)</td>
</tr>
<tr>
<td>CRP CRP</td>
<td>0.83 (0.68–0.98)</td>
<td>75% (40.9%–92.9%)</td>
<td>85.4% (80.6%–89.2%)</td>
<td>13.6% (6.4%–26.7%)</td>
<td>99.1% (96.8%–99.8%)</td>
</tr>
<tr>
<td>CRP CRP</td>
<td>0.62 (0.41–0.82)</td>
<td>62.5% (30.6%–86.3%)</td>
<td>68.1% (62.2%–73.4%)</td>
<td>7.7% (2.5%–12.6%)</td>
<td>98.3% (95.2%–99.4%)</td>
</tr>
</tbody>
</table>


**P0110 POST-ENDOSCOPIC RETROGRADE CHolangiopancreatography Pancreatitis: Morbidity and Predictors of Severity**

E. El-Hanafy1, A. El Nakeeb2

1Facultu Of Medicin, Mansoura University, gastroenterology surgical center, Cairo/Egypt

2Facultu Of Medicin, Mansoura University, gastroenterology surgical center, Cairo/Egypt

Contact E-mail Address: dr_elah_elhanaf@yahoo.com

**Introduction:** Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly used for therapeutic management of various biliary and pancreatic diseases[1]. However, ERCP is not a procedure without morbidity[2]. Post-ERCP pancreatitis (PEP) remains the most common and serious complication after ERCP[3].

**Aims & Methods:** To detect risk factors for post-endoscopic retrograde cholangiopancreatography (ERP) pancreatitis (PEP) and investigate the predictors of its severity. This is a prospective cohort study of all patients who underwent ERCP. Pre-ERP data, intraoperative data, and post-ERP data were collected.

**Results:** The study population consisted of 996 patients. Their mean age at presentation was 58.42 (±14.72) years, and there were 454 male and 442 female patients. Overall, PEP occurred in 102 (10.2%) patients of the study population; 2 (2%) patients died. Etiology: 65% biliary, 10.4% alcoholic, post-biliary (7.8%), 15.2% mixed, 1% other. The patients were included. Blood sample including hematological parameters, biochemical test, BUN, CRP and venous gasometry including lactate were performed on admission. We assessed the presence of SAP and mortality during admission, receiving operating curves (ROC) and area under the curve (AUC) were calculated, selecting the best cut-off value in terms of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).

**Results:** 269 patients were included. 52.8% female and 47.2% male, 17 presented SAP (6.3%), 8 (3%) patients died. Etiology: 65% biliary, 10.4% alcoholic, post-ERP 3%, drugs related in 0.7%, metabolic in 1.1%, idiopathic 15.2%, mixed (alcoholic + biliary) 1.1% and other in 2.6% The results in terms of sensitivity, specificity, PPV, NPV and AUC are summarized in Table 1a and 1b. BUN had the highest AUC in terms of SAP prediction whereas Lactate had the best in terms of mortality prediction.

**Conclusion:** Biomarkers are quick but incomplete tools for SAP prediction, which can be easily obtained at any moment throughout the disease. Our study shows good values of specificity and AUC for BUN, Cr and lactate but not for CRP concerning SAP and mortality prediction on admission, but since they are low prevalent outcomes in our sample, PPVs are low and not very reliable. Although many of these parameters have been analyzed in previous studies, we present lactate as a new biomarker with similar performance than that of Cr and BUN, suggesting a possible role for scores building or outcome monitoring.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


Acute pancreatitis (AP) is a common but potentially lethal pathology due to the multiplicity and severity of its complications. Infected pancreatic necrosis and improved outcome. The early prediction of fluid sequestration may help to select patients for more or less aggressive fluid resuscitation.

All 3 patients that died had severe PEP according to Cotton. They received systemic anticoagulants (p=0.31).

All patients admitted in Intensive Care Unit (ICU) in a single centre from 2012 to 2015 for a severe AP. Baseline characteristics of the overall population were expressed as frequencies (percentages) for categorical variables, and mean ± standard deviation (SD) for continuous data. For the analysis of mortality, multivariate analysis with Cox proportional hazards regression modeling was used to identify independent predictors. Association between IPN and patients’ characteristics at baseline was evaluated using logistic regression.

Conclusion: In conclusion, this study performed in routine practice conditions showed that IPN occurs in almost half of patients hospitalized in ICU for severe AP, and is associated with increased mortality and complications rates. Overall mortality was 17.6%, and factors associated with mortality were a high BMI, CTSI and persistent OF. Those results are consistent with previous studies, but we reported a high rate of mesenteric ischemia (7/26 patients deceased) while this complication is occasionally described. IPN patients required an intervention for drainage of infected tissue removal, which was performed using minimally invasive techniques in the vast majority of cases, with no complication or severe side effect. 35% of patients were treated with drainage alone without any additional necrosectomy. Finally, PSMVT and early OF appeared to be associated with risk of developing an IPN but anticoagulation for PSMVT did not protect for cavenoma occurrence and can expose to intestinal bleeding. Our results also suggest that the optimal and early management of OF and detection of PVSMT might prevent IPN and/or its complications. Such hypothesis will need to be tested in large multicentre prospective studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**Results:** The median fluid sequestration in the first 48 h after hospitalization was 4.7 liter (2.8–6.8 L). It was 3.2 (1.4–5.1), 6.4 (3.6–9.5) l in those without necrosis and those with necrosis, and 7.5 (4.4–12) l in those with persistent organ failure. The univariate and multivariate analysis showed that alcohol etiology, an increasing number of SIRS criteria and Hematocrit were significantly associated with increased fluid sequestration (Table). Body mass index, APACHE II score, sodium, creatinine and blood urea nitrogen levels did not help predict fluid sequestration. Patients with and without acute fluid collections had a median sequestration of 7.2 and 4.2 L (p < 0.001), respectively. 22 patients died (73.3%); median fluid sequestration in the patients who died was 6.5 L compared to 4.2 L among the patients who survived (p = 0.05). Increased fluid sequestration was associated with prolonged hospital stay (p < 0.01), (table) Association between variables determined at admission and fluid sequestration.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fluid sequestration (48 hours) (L)</th>
<th>Univariate analysis</th>
<th>Multivariate analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>&lt;35</td>
<td>5.3 (2.7–8.9)</td>
<td>0.06</td>
</tr>
<tr>
<td>35–45</td>
<td>5.6 (2.9–7.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45–55</td>
<td>4.9 (3.1–7.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55–65</td>
<td>5.3 (2.7–6.9)</td>
<td>&gt;0.01</td>
<td>&gt;0.05</td>
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<tr>
<td>&gt;65</td>
<td>4.5 (2.7–6.2)</td>
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<tr>
<td>Sex</td>
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<td>5.1 (2.7–8.9)</td>
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<tr>
<td>Female</td>
<td>4.8 (2.8–5.4)</td>
<td></td>
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<tr>
<td>Etiology</td>
<td>Alcohol</td>
<td>5.5 (2.7–8.8)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Biliary</td>
<td>5.2 (2.4–8.1)</td>
<td></td>
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<tr>
<td>Idiopathic</td>
<td>4.8 (2.8–7.2)</td>
<td></td>
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<tr>
<td>Others</td>
<td>4.6 (2.7–6.4)</td>
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<tr>
<td>Hematocrit (%)</td>
<td>&lt;35</td>
<td>3.6 (2.7–4.9)</td>
<td>&lt;0.001</td>
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<tr>
<td>35–40</td>
<td>3.3 (2.7–5.1)</td>
<td></td>
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<td>40–45</td>
<td>3.8 (3.1–7.5)</td>
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<td>&gt;45</td>
<td>4.7 (3.8–8.9)</td>
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<tr>
<td>SIRS score</td>
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<td>5.3 (2.7–4.1)</td>
<td>&lt;0.001</td>
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<tr>
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<td>5.3 (2.2–4.4)</td>
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<tr>
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<td>5.3 (2.9–6.5)</td>
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<td>5.3 (3.1–7.2)</td>
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<tr>
<td>4</td>
<td>5.3 (3.8–8.9)</td>
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</table>

**Conclusion:** Alcohol etiology, increased number of SIRS criteria, hemococoncentration and younger age were independent predictors of increased fluid loss. Alcohol etiology, an increased number of SIRS criteria, hemococoncentration were independent predictors of increased fluid loss. Alcoholic pancreatitis, hemococoncentration, patient’s age and younger age were independent predictors of increased fluid loss. Alcoholic pancreatitis, hemococoncentration were independent predictors of increased fluid loss. Alcoholic pancreatitis, hemococoncentration were independent predictors of increased fluid loss. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Conclusion: By EPDBD therapy, the relapse rate of pancreatic stone decreased, placed into minor papilla successfully. ESWL and EPDBD, stones were removed via minor papilla, then EPS was pancreatic stone: ERP revealed type 2 incomplete divisum. After EPDBD, EPS was successful in 2 cases via major papilla, and 14 cases via minor papilla. After EPDBD therapy, the stone free rate was 75.3%, the pain free rate 97.1%. The stone relapse rate was 5.7% - this is a much lower result compared to other reports. We think that EPDBD contributes to this good result. Complications of EPDBD therapy were only minor bleeding from orifice at the therapy and mild pancreatitis after therapy for several days. Case A: 22 y/o male, idiopathic chronic pancreatitis, pancreas stone: After 4th EUSL, small stones remained in the head duct which can’t be removed by basket catheter and severe pain continued, so EPDBD was done under good informed consent. After several dilation of the orifice and the head duct, stones were removed easily. This is our experience in 62 cases. In our hospital, EPS and ENPD (endoscopic nasal pancreatic drainage) are the preferred choice for pancreatic pseudocyst therapy after dilation of the stenotic duct. 114 cases were successfully treated without major complications, and their prognoses were good. EPDBD is a safe and favorable procedure for pancreatic diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.
This was done in consideration of the current knowledge about lesions mimicking cancer in the setting of a normal pancreatic parenchyma or existence of signs for pancreatic neoplasm.

**Aims & Methods:** Retrospective analysis of prospectively collected data in our tertiary University center. From March 2007 to October 2015, 218 (124 men, 94 women; aged 20–80 years) patients underwent EUS for suspicious solid pancreatic neoplasm because of cross sectional imaging results, idiopathic acute pancreatitis, weight loss, pancreatic hyperechogenicity, painless jaundice and elevated Ca 19-9 values. Cystic pancreatic lesions, pseudocysts and cystic pancreatic neoplasms were excluded from the analysis.

**Results:** Malignant lesions were diagnosed in 98 (45%) patients. 54 patients (24.8%) underwent surgery and 61 patients (28% of all patients) underwent clinical follow-up (16.5 ± 2.7 months, 18 needed surgery). 43 lesions not undergoing surgery needed EUS follow-up before achieving final diagnosis: pancreatic cancer (n = 6, 9.8%), neuroendocrine tumor (NET) (n = 10, 16.4%), paradoxe-nal neoplasms (n = 5, 8.9%), chronic pancreatitis (n = 13, 21.3%), necrosis (n = 3, 4.9%), autoimmune pancreatitis (AIP) (n = 3, 4.9%), microcystic serous neoplasms (n = 3, 4.9%). Stent-related pseudocyst (n = 1), ventral/dorsal split (n = 1), lipomatosis (n = 1). EUS showed sensitivity and specificity for malignancy of 91.4% and 97.7%, respectively, in the non-pancreatitis group (n = 121) and 44% and 87.1% in the pancreatitis group (n = 97). Ca 19-9 elevation, rapid onset jaundice, double duct sign are useful indicators of malignancy both in the setting of normal and inflamed pancreas. Patients without pancreatitis the presence of enlarged lymphnodes or a mass in EUS, weight loss and worsening diabetes are predictor of malignancy. In patients with pancreatitis and without jaundice Ca 19-9 sensitivity for malignancy was 95% and specificity was 39%. In the pancreatitis group, Ca 19-9 sensitivity for malignancy (in patients without jaundice) was 45% and specificity was 86%. IgG4 elevation presented a sensitivity of 83.3% and a specificity of 92% for AIP, where one false elevation was seen in a dusual cholangiocarcinoma.

**Conclusion:** Diagnostic accuracy of EUS is lower in the presence of pancreatitis. Focal autoimmune pancreatitis and paradoxaunal pancreatitis are still confused with pancreatic cancer in the setting of normal or inflamed pancreatic parenchyma. EUS in the setting of a normal parenchyma is an excellent tool to exclude pancreatic cancer. Tumor markers like Ca 19-9 and IgG4 values should be measured in the evaluation of pancreatic masses, also in the setting of chronic pancreatic disease. We recommend EUS-FNA when routine preoperative EUS when performed after contrast enhanced CT in the diagnostic work-up going surgery needed EUS follow-up before achieving final diagnosis: pancreatic cancer. In some IPMN cases, they cannot be detected before invasive procedures.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0122 WHOLE-GENOME SEQUENCING OF PANCREATIC TUMOR VIA NEXT-GENERATION SEQUENCING USING EUS-FNA SPECIMENS**

M. Matsukawa1, M. Nishimura2, Y. Fujii3
1Gastroenterology, Tokyo Metropolitan Geriatric Hospital, Itabashi-Ku; Japan
2Gastrointestinal Endoscopy, Tokyo Metropolitan Geriatric Hospital, Tokyo, Japan
3Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology, Tokyo/ Japan

**Contact E-mail Address:** matsumatku@gmail.com

**Introduction:** Intraductal papillary mucinous neoplasms (IPMN) are common pancreatic cystic neoplasms often detected by chance, and are sometimes precursors of invasive pancreatic ductal adenocarcinoma [1, 2]. They are heterogeneous lesions because, in addition to cystic components, solid components may be present in the same glandular structure. These lesions are distinct from pancreatic ductal adenocarcinoma (PDA), conventional pancreatic cancer. In some IPMN cases, they cannot be detected before invasive procedures. In other cases, they may be associated with invasive PDA, and detection before invasive processes is crucial. A frequent finding in IPMN is the presence of somatic genetic alterations, and several studies have demonstrated that somatic genetic alterations, especially in IPMN or PDA adjacent to large cystic or solid components, may be involved in the development of PDA [3]. The occurrence of these genetic alterations in IPMN is a critical factor in the decision making process in patients with IPMN. Since the introduction of next-generation sequencing (NGS) technology, the potential of rapid and cost-effective genetic testing has been achieved. However, routine use of NGS in patients with IPMN is still limited, due to the high cost and relatively small number of sequence targets. Moreover, the molecular characteristics of IPMN may be different from those of PDA [4]. Next-generation sequencing using EUS-FNA (endoscopic ultrasound fine-needle aspiration) specimens provides an opportunity to detect somatic genetic alterations in IPMN with high sensitivity. In addition, EUS-FNA is a minimally invasive technique that does not require surgery, and is performed under local anesthesia.

**Aims & Methods:** We analysed IPMN or PDA tissues using NGS and assessed the impact of NGS on clinical diagnosis. From January to December 2015, 14 tissue samples of undiagnosed pancreatic tumours (from 8 male patients, 6 female patients; mean age range, 85–100 years; mean tumour size, 29.6 ± 17.9 mm; tumour size range, 10–66 mm) were collected by EUS-FNA. The locations of the tumours were the head (3), body (4), and tail (5); we obtained their samples through the stomach or duodenum. EUS-FNA was performed using a curvilinear high-frequency scope (GF-UCT 260; Olympus Medical Systems, Tokyo, Japan) and 22- or 25-gauge needles (ProCore; Cook Japan, Tokyo, Japan; Expect; Boston Scientific, Tokyo, Japan). Both slow-pull and negative pressure techniques were used to obtain specimens. We performed whole-genome sequencing using NGS obtained from IPMN and/or PDA tissues using the Comprehensive Cancer panel, and compared their genetic mutations. Additionally, in the case of IPMN, we compared the differences in results between mural nodules and cystic fluids or walls.

**Results:** Pathological diagnoses showed 2 adenocarcinomas, 3 intraductal papillary mucinous carcinomas, 7 intraductal papillary mucinous adenomas; the remaining 2 cases could not be diagnosed. We used minute samples obtained from EUS-FNA, and analysed genetic mutations of 10 cases using NGS. Homogenous genetic mutations were approximately 18% and heterogeneous genetic mutations were approximately 25%. Five of the cases had mural nodules inside the cysts. We could analyse genetic mutations of cystic fluids or walls by the same way as of mural nodules. For the gradually growing IPMN without

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Introduction: Circular RNAs (circRNAs) are a novel class of noncoding RNAs that are differentially regulated and play an important role in multiple biological processes. Increasing reports have shown that circRNA dysfunction in neuro system diseases, cardiovascular diseases, human cancers and many other diseases. circRNA is involved in tumorigenicity, proliferation, apoptosis, angiogenesis, cell migration, invasion and metastasis in human carcinoma. circRNA can act as microRNA (miRNA) sponge and regulate the targets of miRNA. Circular RNA HIPK3 (circHIPK3) is originated from second exon of HIPK3 gene, which is upregulated in gastric, liver, esophageal. However, the mechanism remains unclear. Previous studies revealed that signal transducer and activator of transcription 3 (STAT3) as an oncogene that was activated in pancreatic carcinoma. Phosphorylation of STAT3 (p-STAT3) is a downstream target of interleukin 6 receptor (IL6R). Activation of STAT3 leads to malignancy of tumorgenesis, cell proliferation and migration. Knockdown STAT3 induces cell apoptosis by Bax, c-Myc, cyclinD1, etc. circHIPK3 regulates Bxc3 cell proliferation through IL6R/STAT3 pathway. It may be a new target for the therapy of pancreatic carcinoma.

Materials & Methods: Our research is to study whether circHIPK3 can promote proliferation of pancreatic carcinoma cell line, BxPC3, and to explore the mechanism of circHIPK3 in cell proliferation. Cell viability was determined by cell counting kit-8 (CCK-8). Transient knockdown of circHIPK3 using specific siRNA targeting the conjunction of circHIPK3. Overexpression of mir-124 was transfected with synthetic miRNA mimic. Real-time quantitative reverse transcription-polymerase chain reaction (qRT-PCR) was performed to detect circHIPK3, mir-124 and miRNAs. The expressions of STAT3, p-STAT3, IL-6R were measured by Western blot. Overexpression of STAT3 was monitored with STAT3 plasmid. Dual-Luciferase Reporter Assay was performed to detect the interaction of circHIPK3 and mir-124.

Results: circHIPK3 was upregulated in BxPC3 compared to human pancreatic duct epithelial cells (HPDE6-C7). Knockdown of circHIPK3, which didn’t affect the linear transcript, significantly decreased cell viability of BxPC3. Bioinformatical analysis and luciferase assay demonstrated that circHIPK3 interacted with miR-124. Western blot confirmed that circHIPK3 decreased of miRNA levels of STAT3 and IL-6R and protein levels of STAT3, p-STAT3 and IL-6R. Previous studies confirmed that circHIPK3 negatively regulates STAT3, IL-6R via interacting with 3'-UTR. Recent expression of mir-124 decreased the expression of circHIPK3. circHIPK3 caused decreasing of mRNA levels of STAT3 and IL-6R. Previous studies confirmed that circHIPK3 regulate the expression of STAT3. circHIPK3 regulated Hepatocellular Oncogenesis. Cell. 2011;147(6):1233-47. Indeed, mir-124 repressed BxPC3 cell proliferation which was similar with circHIPK3. In addition, overexpression STAT3 abolished the si-circHIPK3 and mir-124 mimetic induced cell suppression. QRT-PCR and Western blot confirmed that circHIPK3 and both STAT3, p-STAT3 and IL-6R were upregulated in BxPC3 cells than HPDE6-C7 cells while mir-124 was downregulated. mir-124 was negatively correlated with circHIPK3 and STAT3, p-STAT3 and IL-6R.

In this study, we identified circHIPK3 promotes BxPC3 pancreatic carcinoma cell proliferation by targeting mir-124 and its target genes STAT3 and IL-6R. We found that mir-124 was a negative regulator of proliferation in BxPC3. And overexpression of STAT3 could attenuate the anti-proliferation of si-circHIPK3 and mir-124. These results demonstrated that circHIPK3 regulates BxPC3 cell proliferation by acting as mir-124 sponge.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0125 CONCOMITANT PANCREATIC CANCERS ARISING ADJACENT TO INDEX INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS SHARE IDENTICAL MUTATIONS AND ARE ASSOCIATED WITH A FAVORABLE PROGNOSIS

1Department Of Pathology, Teine-Keijinkai Hospital, Sapporo/Japan
2Department Of Surgery, Teine-Keijinkai Hospital, Sapporo/Japan
3Department Of Medicine, Asahikawa Medical University, Asahikawa/Japan
4Center For Gastroenterology, Teine-Keijinkai Hospital, Sapporo/Japan
5Department Of Medicine, Asahikawa Medical University, Asahikawa/Japan

Introduction: Intraductal papillary mucinous neoplasms (IPMN) are precursors of pancreatic ductal adenocarcinoma (PDAC) and are also associated with multicentric lesions (field defect), where concurrent de novo PDA, independent of index IPMN lesion, can also develop. However, there are cases where PDAs arise adjacent to the index IPMNs, and occasionally they are pathologically indistinguishable whether the carcinoma developed from IPMN or was coincidental to the IPMN. A genetic approach can be useful to clarify the origin of each tumor compartment to determine if they shared molecular signatures.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**Aims & Methods:** Twenty concomitant PDAs and IPMNs (39 samples, including concurrence lesions) from surgically resected patients were enrolled in this study. Resected pancreata were sliced at 5-mm intervals for whole-section histological analysis, and the distance between PDA and IPMNs was measured after precise pathological mapping. Target amplion sequencing that covers 18 PDA-associated genes, including KRAS, GNAS, TP53, SMAD4, CDKN2A, BRCA1, RB1, PTEN, ATM, and ATRX, was performed using Ion PGM™ system (Thermo Fisher Scientific). Protein expression of TP53, SMAD4, p16, catenin, and RNF43 was also analyzed immunohistochemically.

**Results:** Fourteen lesions were detected in 19/20 (95%) of PDAs and in 38/39 (97%) of IPMNs. “Adjacent” concomitant PDAs, defined as those that are 5 mm or less away from the IPMN (n = 11), tended to harbor identical KRAS mutations as the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%). Among concomitant non-neoplastic lesions via the main pancreatic duct between PDAs and IPMNs had identical KRAS mutations. In contrast, 7 of 9 “distant” concomitant PDAs, defined as those greater than 5 mm away from the IPMN (n = 9), possessed distinct KRAS mutations from the index IPMNs (78%). Mutations in KRAS were demonstrated in 14/20 (70%) of index IPMNs, and in 29/39 (74%) of all PDAs, but not in PDAs supporting de novo carcinogenesis rather than progression from the IPMNs. PDAs harboring identical mutations in KRAS as IPMNs were significantly closer to the IPMNs (KRAS identical; p = 0.05). The level of KRAS different group had a better prognosis than the KRAS identical group (disease-free survival: p = 0.0245; overall survival p = 0.205).

**Conclusion:** The molecular signature of 18 PDA-associated genes was not significantly different between the two groups. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

**P0126 POLYМОРРHІSМ OF TP53 GENE, LEVELS OF INSULIN AND INFLAMMATORY CYTOKINES IN PATIENTS WITH PANCREATIC CANCER**
1Gastroenterology, Federal State Budgetary of Scientific Institution «Institute of Internal and Digestive Diseases», Novosibirsk
2Russian Federation

**Contact E-mail Address:** igregorieva@ngs.ru

**Introduction:** The pancreatic cancer is a leading cause of death in cancer carriers worldwide.

**Aims & Methods:** To study the polymorphism of the TP53 gene on the suppressor in pancreatectomy and to evaluate proinflammatory cytokines in IL-1β, TNF-α, insulin blood serum levels at patients with various pathologies of the pancreas (cancer (PCa), acute and chronic pancreatitis (OP) and CP) with various genotypes of TP53. 150 patients were followed in a one-stage clinical trial (42 patients with PCa, 16 patients with CP, and 27 with PC). The diagnosis has been verified by clinic methods, ultrasonography, CT. The mean age of patients with PCa was 63.6 ± 4.9 years. In patients with OP, blood sampling was carried out in the first 5 days after admission to hospital, patients with CP were examined at the stage of exacerbation. The concentration of IL-1β, TNF-α, serum insulin was determined by ELISA using the ELISA kit and Monobind Inc., USA. The frequencies of genotypes and alleles of the TP53 gene by exon (exon 4, Arg2Pro) polymorphism were studied by PCR.

**Results:** The distribution of Arg/Arg genotypes of the TP53 gene was 65% in patients with PCa, 49% in the control group. In patients with PCa there was no homozygotic genotype Pro/Pro, in the comparison group - 13%, p < 0.05. The frequency of Arg/Pro genotypes was 35% in patients with PCa and 38% in the comparison group. The frequency of alleles of the TP53 gene in patients with PCa and in the comparison group was: Arg (82.5% and 68%), Pro (17.5% and 32%). The concentration of insulin in different genotypes in patients with PCa did not differ significantly and was 7.5 ± 2.2 μU/ml in Arg/Arg, Arg/Pro – 11.4 ± 1.4 μU/ml, Pro/Pro – 11.4 ± 0.5 μU/ml. In the comparison group, the serum level of insulin was 5.7 ± 1.8 μU/ml. In patients with PCa, the glucose level was significantly higher, compared with patients with OP and CP (8.5 ± 1.4 mmol/l, 5.4 ± 0.3 and 5.1 ± 0.1 mmol/l, respectively, p < 0.05). The level of IL-1β was significantly higher, compared with patients with OP and CP (8.5 ± 1.4, 2.0 ± 0.3 and 1.3 ± 0.2 μU/ml, respectively), p < 0.05. The level of TNF-α in the serum of patients with OP was 3.5 ± 0.5 μU/ml, and did not significantly differ from the serum level of patients with CP and PCa – 4.3 ± 0.7 and 1.1 ± 0.2 μU/ml, respectively. In patients with PDAs, the level of TNF-α was significantly lower than in patients with CP, p < 0.05. The levels of IL-1β in the serum of patients with PDAs with different genotypes of the TP53 gene did not differ significantly and amounted to 1.1 ± 0.2 μU/ml in patients with the Arg/Arg genotype, with Arg/Pro genotypes of 1.2 ± 0.3 μU/ml, p > 0.05. The level of TNF-α in the serum of patients with the Arg/Arg genotype was 1.2 ± 0.2 μg/ml, and did not significantly differ from the level in the serum of patients with the Arg/Pro genotype - 1.3 ± 0.1 μg/ml. 

**Conclusion:** The Pro/Pro genotype of the TP53 gene was significantly more common in patients with PCa than in the patients with CP. We detected significant differences in serum insulin levels in the comparison group and in patients with heterozygous genotypes, p < 0.05. The level of TNF-α in patients with PCa, CP was significantly lower than in patients with OP, and the level of IL-1β was significantly lower in patients with PCa than in patients with CP.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0127 VALIDATION OF SERUM/PLASMA METABOLIC BIOMARKERS AGAINST PANCREATIC CANCER BY QUANTITATIVE TARGETED GC/MS**
T. Kobayashi, Y. Hiraïta, M. Yoshida, S. Nishiumi, K. Honda
1Gastroenterology, Kobe university, Kobe/Japan
2Division Of Biomarker For Cancer Early Detection, National Cancer Center Research Institute, Tokyo/Japan

**Contact E-mail Address:** kobataki@med.kobe-u.ac.jp

**Introduction:** Pancreatic cancer (PC) is one of the most lethal diseases due to the difficulty of early detection. There is no effective blood biomarker for screening. Recently metabolomics is considered to be a promising approach to discover disease biomarkers. We previously reported that the serum/plasma levels of 18 candidate metabolites in PC patients were significantly changed compared with those of healthy individuals.

**Aims & Methods:** The aim of this study is to confirm and develop our candidate metabolomic biomarkers in blood of PC patients. Blood samples from PC patients (n = 18), healthy volunteers (HV) were collected from two independent groups consisting of multiple institutions. The 1st set was included 55 PC in stage I and II and 58 HV. The 2nd set was included 16 PC and 16 HV. Sixteen candidate metabolites were selected from previous report. Quantitative analyses were performed by gas chromatography/tandem mass spectrometry (GC/MS) together with their corresponding stable isotopes. In the 1st set, diagnostic models were constructed via multivariate logistic regression analysis. These results were validated using the 2nd set.

**Results:** In the 1st set, the levels of the 15 candidate metabolites differed significantly between PC and HV. Model Y consisting of 2 metabolites, i.e., histidine and xylitol showed high sensitivity (70.4%) than CA19-9. Furthermore, combination of model Y with CA19-9 increased its sensitivity (90.7%) and specificity (89.5%). In the 2nd set, combination of model Y with CA19-9 demonstrated high sensitivity (81.3%) and specificity (93.8%). In particular, it displayed very high sensitivity (100%) for PC in a resectable state.

**Conclusion:** Quantitative analysis using GC/MS/MS confirmed the possibility of metabolomics-based screening methods for PC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0128 COMBINED HISTO-CYTOLOGICAL ANALYSIS OF EUS-FNA SAMPLES FROM SOLID LESIONS USING STANDARD FNA NEEDLES GIVES BETTER DIAGNOSTIC YIELD AND ACCURACY**
A. K. Banerjee, A. Cairns, L. Sanni, B. Paranandi, M. Huggett
1Gastroenterology, St James University Hospital, Leeds, Leeds/United Kingdom
2Pathology, St James University Hospital, Leeds, Leeds/United Kingdom

**Contact E-mail Address:** ashwinibanerjee@gmail.com

**Introduction:** Diagnostic yield from EUS-FNAC (fine needle aspiration cytology) has improved in the past few years with better tissue acquisition techniques. Core biopsy needles are now available but are more expensive than FNAC needles. We assessed the diagnostic yield and accuracy of FNAC samples processed for both cytology and histology.

**Results:** A total of 211 patients (118 male) were included. Samples were sent to cytology (n = 135; 107 pancreas, 10 biliary, 7 lymph nodes, 11 other), or cytology & histology (n = 76; 56 pancreas, 12 biliary, 5 lymph nodes, 3 other). Sample adequacy was 80.7% and 98.7% (p = 0.0004). Diagnostic yield (64.4%, 94.7%) and accuracy (81.3%, 96.1%) was significantly better in the combined (histology & cytology) group (p < 0.0001, p = 0.003). Within the combined group, diagnostic yield and accuracy improved by 20.5% (p = 0.007) and 26% (p = 0.0002) respectively when the sample was processed for both cytology and histology.

**Conclusion:** Our study confirms significant improvement in diagnostic yield and accuracy when samples were sent for both cytology and histology using standard FNAC needles.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
BIOPSY FORCEPS IN DIAGNOSING PANCREATIC CYSTS – A USE OF A NOVEL THROUGH-THE-NEEDLE MICRO-

Pancreatology

Disclosure of Interest: 15% of carcinoma patients did not have nodules, and the handling of the diag-

Consensus Guidelines 2012

Conclusion: in invasive carcinoma 2.

patients. Pathological findings of these patients were noninvasive carcinoma in 6, Carcinoma without MN was present in 8 patients (8/45 significantly higher than that of WF patients without MN (69% vs 33%). With

J. P. Hasselby7, A. Toxværd8, E. Kalaitzakis1, C. P. Hansen9, P. Vilmann1

5m m

material when diagnosing these lesions with current modalities [1]. Recently, a novel biopsy forceps (Moray3, US Endoscopy, Mentor, USA) has become available. It can be introduced through a 19 G FNA-needle, enabling the endo-

Contact E-mail Address: yoshimizu@aichi-cc.jp

Introduction: In the revised international consensus guidelines of 2012 for the management of IPMN of the pancreas, resection is recommended for all main pancreatic duct IPMN. While in branch pancreatic duct IPMN (BD-IPMN), the indications for resection are more conservative. Cyst size >30 mm without “high-risk stigmata” can be observed without immediate resection. And EUS observation is recommended to decide a treatment strategy.

Aims & Methods: The present study was a retrospective investigation of surgical indication for BD-IPMN with worrisome features (WF). 466 patients with IPMN underwent pancreatic resection at 3 high volume centers in Japan between 1996 and 2014. Among them, 156 patients with BD-IPMN were enrolled this study. The investigation of predictors of malignancy was done for 10 factors: age at time of surgery, sex, presence or absence of symptoms, serum amylase, CA19-9, CEA, tumor location, size of mural nodules (MN), diameter of main pancreatic duct (MPD) and cyst size of branch pancreatic duct (BPD). In preoperative examination, endoscopic ultrasonography (EUS) and computed tomography (CT) were considered to be essential. As for size of MN, EUS measurements were used in all 156 cases. For diameter of MPD and cyst size of BPD, the CT measurement values were used. The results were: 36 patients had malignant IPMN. The rate of malignancy was significantly higher than that of WF patients (53% (n = 17) - technical failure was only seen in transduodenal puncture (n = 3, 15%). Biopsies were generally of good quality and contributed to the diagnosis in 14 patients (clinical success of 82%). Among these, there were ten cases of intraductal papillary mucinous neoplasia, two serous cystadenomas, two noninvasive cystic adenocarcinomas, and one pseudo-

docyst. Two mild adverse events were recorded (1%), a case of re-admission due to non-specific abdominal pain and a mild acute pancreatitis.

Conclusion: The use of micro-biopsy forceps was until now only reported in case reports of rare edge cases. In a first large scale feasibility study (ERC P), we conclude that the use of the micro-forceps seems feasible and safe with acceptable rates of technical and clinical success. However, prospective studies are needed in order to determine diagnostic potential of this instrument compared to the other modalities currently used.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


endoscopic ultrasonography fine needle aspiration. One patient developed mild pancreatitis (16.5%).

**Conclusion:** In patients with suspected cephalopancreatic adenocarcinoma referred for ERCP, MPD brush cytology may be performed beyond biliary cytology, as it may improve cytologic diagnosis of malignancy without increasing complications rate.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**PO132: ANALYSIS OF PROGNOSTIC FACTORS IN PANCREATIC METASTASES: A MULTICENTER RETROSPECTIVE ANALYSIS.**


**School of Medicine, Okayama/Japan**

**Kyoto University, Kyoto/Japan**

**Cancer Institute, Osaka/Japan**

**Department Of Gastroenterology And Hepatology, Digestive Disease Center, Kitano Hospital, Osaka/Japan**

**Department Of Hepatobiliary And Pancreatic Oncology, Osaka International Cancer Institute, Osaka/Japan**

**Department Of Gastroenterology And Hepatology, Kindai University, Okayama/Japan**

**Department Of Gastroenterology And Hepatology, Graduate School of Medicine, Kyoto University, Kyoto/Japan**

**2nd Department Of Internal Medicine, Osaka Medical College, Takatsuki/Japan**

**Department Of Gastroenterology And Hepatology, Okayama University Graduate School of Medicine, Okayama/Japan**

**Department Of Gastroenterology, National Hospital Organization Shikoku Cancer Center, Matsuyama/Japan**

**Department Of Internal Medicine 2, Shinnane University School of Medicine, Okayama/Japan**

**Department Of Gastroenterology, Kyoto Second Red Cross Hospital, Kyoto/Japan**

**Department Of Internal Medicine, Kawasaki Medical School General Medical Center, Kawasaki Hospital, Kawasaki Medical School, Okayama/Japan**

**Contact E-mail Address:** kmu0416@yahoo.co.jp

**Introduction:** Pancreatic metastases (PM) account for 1–2% of pancreatic tumors. Several cancer types metastasize to the pancreas, but even recently developed cross-sectional imaging modalities have difficulties distinguishing PM from primary pancreatic tumors. Moreover, their prognostic significance is poorly defined.

**Aims & Methods:** The aims of this study were to clarify the incidence of primary tumors leading to PM, the clinical characteristics, and prognoses, and to define the prognostic factors for survival. A retrospective analysis was performed at 39 Japanese tertiary referral hospitals between January 2005 and August 2015, after receiving approval from the institutional review board of each hospital. We identified the patients based on data obtained from each institutional database, and analyzed patient and tumor characteristics, and survival time. All the patients enrolled in the analysis were histopathologically or cytologically diagnosed with PM. Kaplan-Meier analysis and Cox’s proportional hazard models were applied to evaluate overall survival and survival analysis, respectively.

**Results:** We enrolled 159 patients (median age 74.5 years) with a pathologic diagnosis of PM. The most common primary tumor was renal cell carcinoma (38.4%, n = 61), followed by lung cancer (24.5%, n = 39), colorectal cancer (11.3%, n = 18), sarcoma (6.3%, n = 10), breast cancer (6.3%, n = 10), and other cancers (n = 21). At the time of the diagnosis of PM, 38 patients (24%) had at least one tumor-related symptom. Additional extra-pancreatic metastases were diagnosed in 94 patients (59%). Sixty-four patients (40%) underwent surgical resection, and no surgical resection was performed in 95 patients (60%). Prevalence of isolated pancreatic metastases (PM) was 3.0%, while body and tail masses was 10.5%. Lung metastasis was almost four times more likely in the body, and tail masses (OR = 3.83, CI 1.2–11.8, p = 0.02) compared to the head. Overall CT chest resulted in change in management plan in 9 (2.9%) patients due to change in the stage to metastatic (8) and diagnosis primary lung cancer (1). Staging with CT chest changed otherwise resectable disease to unresectable/metastatic in 5 patients (1.8%) and borderline resectable to metastatic disease in 2 (0.7%) patients. Prevalence of isolated PDA lung metastasis without any other metastasis was 2.8% (8/278).

**Conclusion:** Our study showed that the prevalence of pulmonary metastasis in PDA was clinically relevant and mandate routine staging with CT chest. Prevalence was significantly higher for pancreatic body and tail cancers compared to the head. Staging CT chest resulted in a change in the stage of PDA and management decisions.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**PO134: VALUE OF EUS IN EARLY DETECTION OF TUMOR LESION IN THE REMNANT PANCREAS.**

**H. Maruyama**, A. Shimizu, T. Minami, N. Hirano, K. Hanada

**1Dept. Of Gastroenterology, Onomichi General Hospital, Onomichi/Japan**

**2Gastroenterology, Hiroshima onomichi city, onomichi/Japan**

**Contact E-mail Address:** hiromaruyama99@gmail.com

**Introduction:** National Comprehensive Cancer Network (NCCN) guidelines recommend chest x-ray or chest computed tomography (CT) for the staging of potential resectable pancreatic adenocarcinoma (PDAC). However, there is limited data supporting these guidelines, and the prevalence of lung metastasis is not well defined on staging CT scans. We report our findings of patients with lung metastases during initial staging and follow-up of patients with PDA.

**Aims & Methods:** Data was prospectively collected from May 2013 to September 2016 for PDA patients who were presented at a multidisciplinary pancreas conference (MDPC) at a large tertiary care center. All patients were staged with CT pancreatic protocol, CT chest and Endoscopic Ultrasound. Patients with findings of lung lesions on initial staging chest CT were followed prospectively. Metastatic lung lesions were determined based on definite imaging characteristics with clinical consensus or lung biopsy results.

**Results:** A total 278 PDA patients referred to MDPC were staged with CT chest (Table 1). Out of these, 36 (12.6%) patients were found to have either malignant (N = 6) or indeterminate (N = 30) lung lesions on initial staging CT chest. Out of the six malignant lung lesions, 5 (8.1%) patients had metastatic PDA lesions, and 1 (0.35%) patient had incidental primary lung cancer. On a follow-up of 30 patients with indeterminate lung lesions, 8 patients (26.7%) were later determined to be lung metastasis. The overall prevalence of definite lung metastasis was at least 4.8% (13/278). The prevalence of lung metastasis in pancreatic head cancer was 3.0%, while body and tail masses was 10.5%. Lung metastasis was almost four times more likely in the body, and tail masses (OR = 3.83, CI 1.2–11.8, p = 0.02) compared to head. Overall CT chest resulted in change in management plan in 9 (2.9%) patients due to change in the stage to metastatic (8) and diagnosis primary lung cancer (1). Staging with CT chest changed otherwise resectable disease to unresectable/metastatic in 5 patients (1.8%) and borderline resectable to metastatic disease in 2 (0.7%) patients. Prevalence of isolated PDA lung metastasis without any other metastasis was 2.8% (8/278).

**Table 1:** Comparison of patient and tumor characteristics.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Patients without Lung metastasis</th>
<th>Patients with LungMetastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>265</td>
<td>13</td>
</tr>
<tr>
<td>Age (yrs), mean (S.D)</td>
<td>68.6</td>
<td>64.8</td>
</tr>
<tr>
<td>Male (%)</td>
<td>48.4</td>
<td>69.2</td>
</tr>
<tr>
<td>Race, Caucasian (%)</td>
<td>90.2</td>
<td>100</td>
</tr>
<tr>
<td>Mass size (mm), mean (S.D)</td>
<td>26.9</td>
<td>31.1</td>
</tr>
<tr>
<td>Mass Location</td>
<td>Head (%)</td>
<td>76.7</td>
</tr>
<tr>
<td>Body/Tail (%)</td>
<td>23.3</td>
<td>53.8</td>
</tr>
<tr>
<td>CA 19-9, mean (S.D)</td>
<td>899 (1528)</td>
<td>961 (482)</td>
</tr>
</tbody>
</table>


**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: New lesions (metachronous pancreatic cancer) and recurrence may develop in patients after initial resection and Intraductal Papillary Mucinous Neoplasm (IPMN). Endoscopic ultrasonography (EUS) is proved as a more specific and sensitive method for pancreatic lesion. However, there is no report about EUS after pancreatectomy. If it is possible to observe from the anastomotic part to remnant pancreas under the EUS, remnant pancreatic cancer may be pointed out an early stage.

Aims & Methods: The aim of this study was retrospectively to investigate the observation ability of EUS for remnant pancreas. In this retrospective study, 44 patients who underwent EUS for remnant pancreas were enrolled. The definition of observation under the EUS for remnant pancreas was as follows, total observation for remnant pancreas observed from linear white line (anastomotic part) to opposite side pancreas, otherwise it was insufficient observation. We compared the detection rate of EUS findings and that of CT or MRI findings.

Results: Among the 395 patients who underwent pancreatectomy at the J.A. Omomochi General Hospital between December 2002 and March 2016, the enrolled patients were 44 who underwent EUS for remnant pancreas. In the surgical procedure, pancreaticoduodenectomy (PD) including pylorus-preserving PD (PPPD) and subtotal stomach-preserving PD (SSPPD) was 20 cases and distal pancreatectomy (DP) was 24 cases. Total observation of remnant pancreas was possible in 41 cases (93%). Seven of 44 cases showed the lesion of recurrence in the remnant pancreas. Although CT or MRI was able to point out it in only 22 cases, EUS was able to point out it in the remnant pancreas of all cases. Stage of six cases were as follows, 1 case of stage 0, 2 cases of stage Ia, 3 cases of stage IIb. The other cases IPMNs were able to perform EUS-FNA for lesion in the remnant pancreas in all cases. Pathological results were positive in 5 cases. One of the other 2 cases was negative (class III), but it was a recurrence by surgery. The other case was strongly suspected to recurrence by Positron emission tomography (PET). EUS was performed in the other 4 cases. The sensitivity of EUS-FNA was 71.4% (5/7), the specificity was 85.7% (6/7) and the accuracy was 71.4% (5/7). In addition, a comparison of detection ability of EUS and CT or MRI findings showed that EUS was significantly superior to CT or MRI (p < 0.001).

Conclusion: EUS was able to observe remnant pancreas in almost cases. We were able to perform EUS-FNA for lesion in the remnant pancreas. In addition, the detection ability of EUS was significantly superior to that of CT or MRI. We believe that EUS and EUS-FNA should be performed for lesion in remnant pancreas, and that remnant pancreatic cancer may be pointed out an early stage.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Observed and expected number of patients with extrapancreatic malignancies in 60 patients with intraductal papillary mucinous neoplasms

<table>
<thead>
<tr>
<th>Observed</th>
<th>Expected</th>
<th>O/E</th>
<th>CI 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>26</td>
<td>7, 096</td>
<td>3, 66</td>
</tr>
<tr>
<td>prostate cancer</td>
<td>5</td>
<td>1, 019</td>
<td>4, 91</td>
</tr>
<tr>
<td>breast cancer*</td>
<td>5</td>
<td>1, 583</td>
<td>3, 16</td>
</tr>
<tr>
<td>colorectal cancer</td>
<td>4</td>
<td>1, 115</td>
<td>3, 59</td>
</tr>
<tr>
<td>renal cell cancer</td>
<td>3</td>
<td>0, 312</td>
<td>9, 62</td>
</tr>
</tbody>
</table>

*Calculated for females.

Conclusion: We report an increased prevalence of EPMs in Italian patients with IPMN, especially for renal cell carcinoma, prostate, colorectal and breast cancer. A systematic surveillance of IPMN cases for such cancer types would be advised.

Disclosure of Interest: All authors have declared no conflicts of interest.
pared with 33.1 months (95% CI, 9.0–27.2) in the 2nd PDAC group (N: 259 vs. 20.4 months; 95% CI, 1.8–40.0) in the 2nd group. The median OS was 10.7 months (95% CI, 10.0–11.4) in 1st PDAC compared with 10.8 months (95% CI, 9.2–12.3) in 2nd PDAC (N: 1094 vs. 66, p = 0.952).

Table 1: Cox proportional analysis for the contribution of clinical factors to overall survival.

<table>
<thead>
<tr>
<th>Univariate</th>
<th>Multivariate</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR (95% CI)</td>
<td>P-value</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td>P-value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second PDAC</td>
<td>0.81 (0.63–1.04)</td>
<td>0.99</td>
</tr>
<tr>
<td>Age, mean</td>
<td>1.02 (1.01–1.02)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male sex</td>
<td>1.12 (0.99–1.27)</td>
<td>0.156</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1.23 (1.08–1.39)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Resectable</td>
<td>0.30 (0.25–0.35)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Abbreviations: PDAC, pancreatic ductal adenocarcinoma; SD, standard deviation; HR, hazard ratio; CI, confidence interval.

Conclusion: Second primary pancreatic cancer had a higher rate of resectability, and there was no difference in the effectiveness of curative surgery and chemotherapy between 2nd and 1st PDAC. Therefore, when curative surgery for 2nd PDAC is planned, it should be conducted similarly to curative surgery for 1st PDAC. Considering the increased risk of 2nd PDAC in cancer survivors and the fact that surgery is the only curative treatment for this fatal cancer, more efforts are needed to develop screening programs for second primary pancreatic cancer in cancer survivors.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0137 ADEQUACY ASSESSMENT OF EUS-FNAB SAMPLES OF Pancreatic Cancer for "Precision Medicine": A COMPARISON OF 22-GAUGE AND 25-GAUGE NEEDLES

Y. Noshizawa1, R. Yamada1, H. Miura1, T. Takenouchi1, T. Tanaka2, N. Horiki2, Y. Takei1
1Department of Endoscopy, Mie University Hospital, Tsu, Mie/Japan
2Endoscopy, Mie University Hospital, Tsu, Mie/Japan

Introduction: The development of new technology including next-generation sequencing has accelerated seeking new biomarkers and implementation of “precision medicine”. Generally, formalin-fixed paraffin-embedded tumor tissues obtained by surgery are used for molecular testing. The problem is that surgery is invasive, therefore, acquisition of adequate specimen by less-invasive procedure is getting significant factor. Endoscopic ultrasonic-guided fine-needle aspiration and biopsy (EUS-FNAB) is the standard technique for diagnosing pancreatic solid tumor. There are several studies that have assessed the diagnostic yield of EUS-FNAB, comparing different needle sizes. Whereas, few reports had focused on the adequacy of sample yield of EUS-FNAB, comparing different needle sizes. Therefore, we investigated the adequacy of sample yield of EUS-FNAB for “precision medicine”, evaluating EUS-FNAB specimens obtained by 22-gauge needles (22G) and 25-gauge needles (25G).

Aims & Methods: The aim of our study was to verify the accuracy and sample yield obtained by EUS-FNAB using 22G and 25G, evaluating the feasibility for immunohistochemistry (IHC) staining. This was a retrospective study in a single tertiary referral center. Between October 2006 and November 2015, we investigated 153 patients of pancreatic ductal adenocarcinoma (PDAC) undergoing diagnostic EUS-FNAB before neoadjuvant gemcitabine-based chemoradiotherapy. EUS-FNAB was performed with rapid on-site evaluation. We compared the adequacy of sample yield of EUS-FNAB by both 22G and 25G.

Results: A total of 597 pancreatic neoplasms (496 with early gastric cancers and 101 with gastric adenomas) in 371 consecutive patients were treated with gastric ESD between January 2010 and October 2016. A total of 102 lesions were excluded from this study: 51 lesions due to anticoagulation therapy; 25 lesions in patients receiving antipatelectomy therapy excluding single-LDA and DAPT; and 26 lesions due to postoperative bleeding at the same time. Thus, a total of 495 patients were enrolled in this study. The patients were categorized according to antipatelectomy therapy (APT). APT was defined as follows: oral administration of single-LDA (aspirin [100 mg/day]) or DAPT (aspirin [100 mg/day] plus clopidogrel [75 mg/day]). Logistic regression analysis was performed for risk factors of bleeding after gastric ESD.

Conclusion: The patients were categorized into two groups: no APT (n=370) and APT (n=125). APT included single-LDA (n=74) and DAPT (n=71) (aspirin plus clopidogrel). Among them, 46 received continuous LDA on single-LDA and 40 received continuous LDA on DAPT. The postoperative bleeding rate in the APT group was significantly higher than that in the no APT group (16.0% vs. 5.9%; P<0.001). Postoperative bleeding occurred in seven and nine patients in the continuous single-LDA group (15.2%) and the continuous LDA on DAPT group (22.5%), respectively. In multivariate analysis, specimen size of ≥40 mm (odds ratio [OR] 3.19; 95% confidence interval [CI], 1.65–6.16; P<0.001) was a sole independent risk factor for postoperative bleeding (Table 1). In subgroup analysis, there was no significant difference in continuous LDA users, continuous single-LDA and continuous LDA on DAPT were not related to postoperative bleeding.

Table 1 Multivariate analysis for postoperative bleeding after ESD.

<table>
<thead>
<tr>
<th>Odds ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary artery disease</td>
<td>1.52</td>
<td>0.61–3.78</td>
</tr>
<tr>
<td>CKD with hemosiderosis</td>
<td>3.21</td>
<td>0.97–10.60</td>
</tr>
<tr>
<td>Continuous LDA</td>
<td>2.13</td>
<td>0.83–5.45</td>
</tr>
<tr>
<td>Specimen size ≥40 mm</td>
<td>3.19</td>
<td>1.65–6.16</td>
</tr>
</tbody>
</table>

Conclusion: This study suggests that continuous LDA may be acceptable for gastric ESD in patients on DAPT. However, patients with continuous LDA on DAPT should be monitored carefully for postoperative bleeding after gastric ESD because the rate of postoperative bleeding in the continuous LDA on DAPT group was higher than that in the other groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0139 OUTCOMES OF PERORAL ENDOSCOPIC MYOTOMY FOR TREATMENT OF ESOPHAGEAL ACHALASIA WITH A MEDIAN FOLLOW-UP OF 4 YEARS

Q. Li1, Q. Wu1, X. Zhang1, P. Zhou2
1Endoscopy Center, Zhongshan Hospital, Fudan University, Zhongshan Hospital, Fudan University, Shanghai/China
2Endoscopy Center, Zhongshan Hospital, Fudan University, Shanghai/China

Contact E-mail Address: liquanlin321@126.com

Disclosure of Interest: none

Introduction: Peroral endoscopic myotomy (POEM) has been recognized as a viable treatment option for esophageal achalasia. However, the long-term outcomes of POEM remain uncertain. The aim of this study was to evaluate the outcomes of POEM for the treatment of esophageal achalasia with a median follow-up of 4 years.

Results: 60 patients underwent POEM between January 2012 and December 2015. The median follow-up period was 36 months (range, 12–60 months). The median age at the time of POEM was 35 years (range, 19–71 years). The median duration of symptoms was 4 years (range, 1–12 years). The median number of POEM sessions was 1 (range, 1–2 sessions). The median operative time was 170 minutes (range, 120–360 minutes). The median length of hospital stay was 7 days (range, 3–28 days). The procedural success rate was 100% (60/60). The median length of stay was 1 day (range, 1–3 days). The median hospitalization cost was $10,000 (range, $5,000–$20,000). The median follow-up duration was 36 months (range, 12–60 months). The median time to symptom recurrence was 12 months (range, 6–18 months). The median time to resolution of symptoms was 12 months (range, 6–18 months). The median time to normalization of esophageal manometry was 12 months (range, 6–18 months). The median time to normalization of esophageal pH monitoring was 12 months (range, 6–18 months).

Conclusion: POEM is an effective and safe treatment for esophageal achalasia. The long-term outcomes of POEM are promising, with a high success rate and low recurrence rate. Further studies are needed to evaluate the long-term outcomes of POEM.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Peroral endoscopic myotomy (POEM) has received wide acceptance as a feasible treatment for achalasia. However, small and small-scale studies are ample but long-term large-scale studies are few.

Aims & Methods: The aim of this study was to systematically analyze our long-term results of POEM, with particular emphasis on POEM failures and associated risk factors. This is a single center study. Consecutive POEM patients between Aug, 2010 and Dec, 2012 were included. Kaplan-Meier survival function was used to estimate clinical success rate at each year. The Cox proportional hazards model was used to analyze risk factors related to recurrence.

Results: A total of 564 patients were included. Mucosa injuries happened in 93 patients (16.5%) and 36 patients (6.4%) experienced major perioperative adverse events. The Eckardt score and lower esophageal sphincter (LES) pressure were significantly decreased after POEM (median Eckardt score 8 to 2, p < 0.05; median LES pressure 29.7 mm Hg to 11.9 mm Hg, p < 0.05). During a median follow-up period of 49 months (range 3–67 months), fifteen failures occurred within 3 months, 23 between 3 months and 3 years, and 10 after 3 years. The estimated clinical success rates at 1, 2, 3, 4, and 5 years were 94.2%, 92.2%, 91.1%, 88.6% and 87.1%, respectively. Multivariate Cox regression revealed long disease duration (>10 years) and history of prior interventions to be risk factors for recurrence. Clinical reflux occurred in 37.3% (155/416) patients.

Conclusion: POEM is a highly safe and effective treatment for esophageal achalasia with favorable long-term outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0140 PATIENTS WITH CHRONIC GASTROINTESTINAL ISCHEMIA HAVE AN ALTERED SUBLINGUAL MICROCIRCULATION
J. Harki1, M. Sucer2, M.S. Tovar Doncel2, L. J. Van Dijk1, D. Van Noord1, C.H.J. Van Eijck2, M.J. Bruno1, E.J. Kuipers4, C. Ince5
1Gastroenterology & Hepatology, Erasmus Medisch Centrum, Rotterdam/Netherlands
2Surgery, Erasmus Medisch Centrum, Rotterdam/Netherlands
3Anesthesiology, University Hospital Rio Hortega, Valladolid/Spain
4Internal Medicine, Erasmus MC University Medical Centre, Rotterdam/Netherlands
5Intensive Care, Erasmus Medisch Centrum, Rotterdam/Netherlands

Contact E-mail Address: j.harki@erasmusmc.nl

Introduction: Chronic gastrointestinal ischemia (CGI) results of insufficient blood supply to the gastrointestinal tract. The majority of CGI patients have systemic disorders of the circulatory system including hypertension, diabetes and other cardiovascular risk factors. Studies in patients with acute gastrointestinal ischemia have revealed long disease duration (>10 years) and history of prior interventions to be risk factors for recurrence. Clinical reflux occurred in 37.3% (155/416) patients.

Aims & Methods: This in vivo study attempted to evaluate whether gastrostasis, using conventional narrow band imaging (NBI) endoscopy is equivalent to that determined by histopathology. Fifty (50) consecutive patients with Helicobacter Pylori (H. Pylori) related gastric atrophy selected according to NBI endoscopic findings I. Diagnosis of H. Pylori based on detection of the organism by histopathology assessment. The NBI grade of lower gastric atrophy scored from 0 to 3. The histopathological assessment of lower gastric atrophy was based on OLGA scoring system. Furthermore, we assessed the presence or absence of intestinal metaplasia. The NBI and histology stages of gastric atrophy were assessed using a combination of scores for the antrum and corpus. These stages further classified into low risk (stage 0, I and II) and high risk (stage III and IV). Finally the degree of correspondence between NBI and histopathology, in prediction of gastric cancer risk, was assessed.

Results: The mean age of included patients was 38.7 ±15.6 years, they were 21 (42%) males and 29 (58%) females. 38 (76%) and 13 (26%) patients have pseudopyloric and intestinal metaplasia respectively. Overall 41 (82%) and 9 (18%) patients have low and high gastric cancer risk respectively. The sensitivity of NBI in diagnosis of Helicobacter Pylori infection, gastric atrophy and intestinal metaplasia were 96% (n = 48/50), 100% and 61.5% (n = 8/13) respectively. The degree of correspondence between the scores obtained by NBI and by histology was 58% (29/50) for the lower gastric body atrophy and 86% (n = 43/50) for the antral intestinal metaplasia. The degree of correspondence between the high risk and low risk groups determined on the basis of NBI endoscopy on one hand and histopathology on the other hand was 80% (n = 40/50).

Conclusion: NBI is able to approximate histopathological staging of gastritis to achieve complete ESD with a single device. It achieves clear marking, better hemostasis and smoother operation during a procedure without replacing the knife.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0142 SAFETY ADVANTAGE OF THE NEW DEVICE (SPLASH-M KNIFE®) FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY GASTRIC CANCER
M. Esaki1, K. Hayashi3, S. Suzuki1, C. Kasano2, S. Itonaga3, A. Abe1, Y. Hayashi1, A. Yokoyama2, T. Hosokawa1, H. Ogin3, H. Akiko1, T. Gotoda2
1Department Of Gastroenterology, Kitakyushu Municipal Medical Center, Fukuoka/Japan
2Division Of Gastroenterology And Hepatology, Department Of Medicine, Nihon University School of Medicine, Tokyo/Japan
3Medicine And Bioregulatory Science, Kyushu University, Fukuoka/Japan

Contact E-mail Address: esaki_saikai@yahoo.co.jp

Introduction: Endoscopic submucosal dissection (ESD) is a standard treatment for early gastric cancer. Development of the ESD device has been conducted recently. Splash M-Knife®, the new multi-functional needle-knife (ESD-C, n = 76) and by ESD with a new device (ESD-N, n = 73) were compared. Multivariate analyses and propensity score matching were used to compensate for the differences in age (P = 0.006), PORPV of all vessels (median 85.38% vs 95.72%, p = 0.007) and MFI of all vessels (median 3.00 vs 2.80, p = 0.039) compared to healthy controls. After caloric challenge, PVD increased significantly in both in small (PVD) vessels and all vessels (PVD") in patients with CGI (PVD") (median 16.3 (IQR 13.3–22.1) mm²/mm² vs (T1) 12.9 (IQR 14.2–26.2) mm²/mm², p = 0.008; PVD") (T0) median 19.1 (IQR 16.2–23.6) mm²/mm² vs (T1) 22.2 (16.5–28.9) mm²/mm², p = 0.02; PorPV") (median 84.8% (IQR 75.3–90.4) vs (T1) 91.0% (80.1–93.6), p = 0.01). In contrast, no significant changes in microcirculatory parameters were observed after caloric challenge in the healthy controls.

Conclusion: Patients with CGI have impaired submucosal microcirculation compared to healthy controls. They also show significant alterations in the submucosal microcirculation after oral caloric challenge compared to healthy controls. Submucosal microcirculation visualization may offer a fast non-invasive diagnostic tool to diagnose patients with CGI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

2. Sana A, van Noord D, Mensink PB, Kooij S, van Dijk K, Bravenboer B, et al. Patients with chronic gastrointestinal ischemia have low and high gastric cancer risk respectively. The sensitivity of Narrow Band Imaging (NBI) endoscopy is equivalent to that determined by histopathology.

among two groups. As sub-analyses, the cutting time, rate of en-block/complete resection and rates of adverse events were evaluated among two groups.

**Results:** Propensity score matching analysis created 46 matched pairs. Adjusted comparisons between two groups showed a significantly smaller usage rate of hemostatic forceps in ESD-N than that in ESD-C (4.35% vs 8.48%, p < 0.001), and a significantly lower adverse event rate (90.0% vs 78.8%, 0.09%, p < 0.001). According to the Kyoto gastritis classification: diffuse redness, regular arrangement of collecting venules (RAC), fundic gland polyp (FPGP), atrophy, xanthoma, hyperplastic polypl, map-like redness, intestinal metaplasia, nodularity, mucosal swelling, white and flat elevated lesion, sticky mucus, depressive erosion, raised erosion, red streak, and enlarged fold. HP infection status was diagnosed on the basis of the findings. An Olympus H260 and Xp260NS were used for endoscopy. The diagnostic accuracy rate of the Kyoto classification and the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic odds ratio (DOR) for endoscopic findings were determined. This study was registered as a clinical trial in UMIN (UMIN0000166744) and was conducted with the approval of the ethics committee in this hospital.

**Introduction:** Since Helicobacter pylori (HP) eradication therapy is necessary to prevent the development of gastric cancer, evaluation of HP infection status (uninfected, infected, eradicated) by endoscopy has become important. For that purpose, the Japan Gastroenterology Endoscopy Society proposed the Kyoto classification for gastritis. However, the usefulness of the classification in daily clinical practice has not been sufficiently evaluated.

**Results:** The 498 subjects included 376 males and 122 females with a mean age of 53.1 years. HP status was unaffected in 315 subjects, eradicated in 104 subjects and infected in 79 subjects. The diagnostic accuracy rate was 82.9%. The sensitivity, specificity, PPV, NPV and DOR were 88.3%, 92.9%, 95.5%, 82.1% and 99.0%, respectively, for uninfected status, 67.1%, 91.4%, 59.6%, 93.6% and 21.7%, respectively, for infected status. High DORs were obtained for the following endoscopic findings: 32.2 for RAC, 7.7 for FGP and 4.7 for red streak in subjects with infected status, 12.8 for mucosal redness in subjects with eradicated status, and 26.8 for diffuse redness. 13.3 for mucosal swelling, 10.2 for sticky mucus and 8.6 for enlarged fold in subjects with infected status.

**Conclusion:** The Kyoto classification is useful for diagnosis of HP infection. However, it should be kept in mind that there is a high false-negative rate for endoscopy. Thus, considering the high rate of false-negative findings of endoscopy, we recommend using H. pylori serology and the CLO test before endoscopy in daily clinical practice.

**References:**

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0143 INTUBATION FAILURE DURING GASTROSCOPY – INCIDENCE, PREDICTORS AND FOLLOW-UP FINDINGS**

K. Siau1, J. L2, N. C. Fisher1, C.J.J. Mulder2, S. Ishaiq1
1Royal College Of Physicians, JAG Clinical Fellow, London/United Kingdom
2Department Of Gastroenterology, Dudley Group Hospitals NHS Foundation Trust, Dudley, United Kingdom
3Dept. Of Gastroenterology, VU University Medical Center, Amsterdam, Netherlands

Contact Email Address: keith@siau.org

**Introduction:** Intubation failure (IF) occurs when a trained endoscopist is unable to progress to upper the oesophagus via the oropharynx. The incidence is unknown, but estimated at 1.8%. There have been no studies exploring IF and follow-up findings. We aimed to assess the incidence, causes of IF, predictors of pathology in patients with IF, and follow-up findings.

**Aims & Methods:** We retrospectively identified all gastroscopies performed at a district general hospital between August 2010–August 2016 from an endoscopy database, and reviewed cases with IF. We excluded patients who had achieved oesophageal intubation. Data on sedation use, endoscopist status, indications, radiological and endoscopic findings were recorded. Procedural limitations were classified into 2 groups: ‘failure to tolerate’ (e.g. pulling out scope, anxiety) and ‘failure to progress’. Statistical analyses were made using Pearson’s chi² and Wilcoxon signed rank test.

**Results:** The incidence of IF was 0.95% (248/26130). 238 patients were identified, with a mean age of 63.2 (SD 16.1), with ‘failure to progress’ in 41 and ‘failure to tolerate’ in 197. Subsequent investigations included barium radiology (59.7%, n = 142), CT (21%, n = 50), repeat gastroscopy (29.4%, n = 70) and no further investigations (19.7%, n = 47). Structural pharyngeal abnormalities were diagnosed in comprising of oropharyngeal hypothyropy (CPH) (58%), Zenker’s diverticulum (ZD) (14.6%), cervical spondylosis (7.3%) and other (7.3%). Endoscopist status was a predictor of IF (OR for medical vs. non-medical endoscopist 0.7, 95% CI: 0.5-0.9, p = 0.007). Within the IF cohort, predictors of structural causes on barium radiology included: dysphagia (OR 5.5, 95% CI: 2.5–11.8, p < 0.001), failure to progress (OR 5.2, 95% CI: 2.3–12.0, p < 0.001) and age ≥ 65 (OR 4.0, 95% CI: 1.8-8.9, p < 0.001). Repeat gastroscopy was successful in 63/70 (2 using nasendoscope) after increasing midazolam dosage (mean increase = 1.5 mg, 95% CI: 1.0-2.0 mg, p < 0.001). Diagnostic yield for barium radiography, CT and repeat gastroscopy were 69.0%, 54.0% and 64.3% respectively. The concordance of endoscopy indication and pathology on further investigation for IF was 110/192 (57.5%). In patients undergoing barium radiography and repeat gastroscopy, the false negative rate for endoscopy was 17/30 (56.7%), consisting of pharyngeal pathology, particularly if associated with age ≥ 65, dysphagia, and failure of endoscopic progression. Barium Radiography is comparable to repeat gastroscopy in terms of diagnostic yield, and may be helpful in evaluating pharyngeal and functional pathology.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**
1. Ponchon T, GIE, April 2000; 51(4): AB275

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**P0144 DIAGNOSTIC CAPABILITY OF ENDOSCOPY FOR HELICOBACTER PYLORI INFECTION**

Y. Shinji1, K. Mabe2, M. Kato2, N. Sakamoto3
1Department Of Gastroenterology, Sapporo Medical Center Nito E, Sapporo/ Japan
2Department Of Gastroenterology, Hokudate National Hospital, Hokudate/Japan
3Department Of Gastroenterology And Hepatology, Hokkaido University Hospital, Sapporo/Japan

Contact Email Address: shinjyoshi@yahoo.co.jp

**Aims & Methods:** The aim of this study was therefore to determine the usefulness of the Kyoto classification for diagnosis of HP infection status. A total of 498 subjects were recruited during the period from January to October 2015 in this study after providing informed consent in writing. HP infection status was determined by the presence of HP-IgG antibody (Eplate II H. pylori antibody, Eiken Chemical Co., Ltd., Tokyo, Japan) and history of eradication therapy. HP infection status was judged to be “eradicated” if there was a definite history of eradication therapy. Without a history of eradication therapy, HP infection status was judged to be “infected” for an HP antibody titer of less than 3 U/ml, “eradicated” for an HP antibody titer of 3-10 U/ml and “infected” for a HP antibody titer of more than 10 U/ml. Seven endoscopists (5 well-experienced endoscopists and 2 trainees) who were blinded to history of eradication therapy performed the endoscopies. The following endoscopic findings determined the diagnosis of HP infection: Helicobacter pylori

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**References:**
below. Re-look endoscopy post-SBT insertion was performed in 86% patients at a median of 39 hours after insertion with further endoscopic therapy in 47%. Complications of SBT insertion occurred in 31% and included minor oesophageal ulceration (9), significant oesophageal ulceration (3), aspiration pneumonia (4) and oesophageal perforation (1).

Current practice surrounding Sengstaken-Blakemore Tube insertion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results (n = 42)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication for SBT insertion</td>
<td>Incomplete haemostasis 74%, poor view 50%</td>
</tr>
<tr>
<td>SBT insertion site</td>
<td>Oral 32, nasal 8</td>
</tr>
<tr>
<td>Confirmation of position</td>
<td>Direct endoscopic visualisation 13, imaging 25, none 6</td>
</tr>
<tr>
<td>Volume of balloon inflation</td>
<td>Gastric balloon - 306 ml mean (60-450 ml) Oesophageal balloon - 25-300 ml (n = 15)</td>
</tr>
<tr>
<td>Duration of balloon inflation (median hours)</td>
<td>Gastric balloon - 35.1 (1-140.3) Oesophageal balloon - 16 (1-62.8)</td>
</tr>
<tr>
<td>Time to re-look endoscopy after SBT (median hours)</td>
<td>3.93 (11.5-348.2)</td>
</tr>
</tbody>
</table>

Re-bleeding occurred in 45% patients during the admission despite SBT insertion, of which 79% did not survive. Seven other patients subsequently underwent a non-endoscopic intervention for these still died. The mean time of surgical intervention, during procedure, the percentage of the time that the depth of sedation from the Aldrete score reached 9 or over 9 was 70% and 41% respectively. The median duration of hospitalisation, intensive care and mechanical ventilation was 13 days (1–56), 6.2 days (0.3–362) and 120 hours (1–708) respectively.

Conclusion: Primary haemostasis was achieved in 93% of patients; however, re-bleeding occurred in 45% and was associated with a poor survival rate of 20%. Short and longer-term survival overall has not significantly improved since studies in the 1970s-1980s despite advances in pharmacological therapy. Current practices of SBT insertion and surveillance are variable and would benefit from further education. Rates of direct visualisation of balloon position prior to inflation with endoscopy should be improved as with referrals for early TIPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO146 CONSCIOUS SEDATION FOR ENDOSCOPIC SUBMUCOSAL RESSECTION BY USING DEXMEDETOMIDINE

Department of Gastroenterology, Yamashita Hospital, Ichinomiya, Japan

Contact E-mail Address: e.m.6089@gmail.com

Introduction: To evaluate the feasibility and safety of the dexmedetomidine (DEX) for conscious sedation during endoscopic submucosal dissection (ESD). Aims & Methods: This study was a prospective trial, and was conducted at the Yamashita Hospital. Between January 2016 and December 2016, all 50 patients were enrolled in this study. The inclusion criteria for the study was the presence of esophageal, gastric or duodenal tumors. The criteria for exclusion from this study is as follows: patients who were allergic to the drugs used, a baseline heart rate less than 50 beats/minutes, patients who could not use anticholinergic drugs, and lack of patient’s consent. A total 50 patients who underwent ESD by using DEX for conscious sedation during endoscopic submucosal dissection (ESD) for esophageal squamous cell carcinoma (ESCC) is very important to select appropriate therapeutic procedure. The Japan Esophageal Society (JES) classification using narrow-band imaging with magnification (M-NBI) was efficient for predicting invasion depth of ESCC1. Blue laser imaging (BLI) is an image enhanced endoscopy consisted of two different lasers with wavelength 410 and 450 nm as light source, which can enhance microvascular and microsurface structure. In previous study, BLI with magnification (M-BLI) was useful for evaluating gastro-intestinal neoplasms such as predicting invasion depth or tumor detection2. Aims & Methods: We aim to investigate the diagnostic value of M-BLI by comparing that of M-NBI. Our study was a single center retrospective study and approved by the Ethical Review Committee of Kyoto Prefectural University of Medicine, and performed in accordance with the World Medical Association’s Declaration of Helsinki. All patients provided informed consent for undergoing both M-BLI and M-NBI. Consecutive 166 patients underwent endoscopic submucosal dissection (ESD) for esophageal tumor at Kyoto Prefectural University of Medicine between April 2014 and March 2016. Endoscopic images of ESCCs were recorded by both M-BLI and M-NBI prior to ESD. ESCCs were pathologically diagnosed by ESD specimens. Three endoscopists with no information of the lesions evaluated invasion depth of ESCCs using M-BLI and M-NBI images according to JES classification. The diagnostic value of each procedure was then evaluated.

Results: 124 ESCCs were analyzed in this study. The numbers of male/female were 104/20, respectively. Median age was 68.5 years old. Median size of tumor was 17.6 mm. The proportion of tumor location at U/M/Lt was 13/70/17(%), respectively. The proportion of macroscopic type for 0-I/0-IIa/0-IIb/0-IIc was 10/66/23(%), respectively. The proportion of invasion depth of the lesions subclassified as EP or LPM, MM or SM1, and SM2 were 80, 13 and 7(%) respectively. The overall diagnostic accuracy of BLI and NBI were 88.7% and 83.9% (P = 0.35), respectively. The interobserver variability of three endoscopists using BLI and NBI was 0.679/0.560/0.559 and 0.568/0.822/0.560, respectively. The intraobserver variability with BLI and NBI was 0.839/0.718/0.531 and 0.517/0.514/0.441, respectively.

Conclusion: M-BLI was efficient for diagnosing invasion depth of ESCC according to JES classification, similar to M-NBI.

Disclosure of Interest: All authors have declared no conflicts of interest.
References


P0148 IMPACT OF NEEDLE-BASED CONFOCAL LASER ENDOMICROSCOPY (NCLE) IN IMPROVING DIAGNOSIS OF PANCREATIC CYSTIC NEOPLASMS: SINGLE CENTER EXPERIENCE
F. Sharifi1, E. Verter, M. Lucas1, C. Molina, J. Adams, V. Joshi1
1Ochsner Medical Center, New Orleans/United States of America
2Poinciana Labs, Dallas/United States of America

Contact E-mail Address: vjoshi@ochsner.org

Introduction: Endoscopic Ultrasound (EUS) has been found to be an effective tool in diagnosing pancreatic cystic neoplasms (PCN). Cystic neoplastic antigen (CEA) tumor marker has also been used to differentiate PCN and is the most accurate marker of mucinous cystic neoplasms. Recently, needle-based confocal laser endomicroscopy (nCLE) has been increasingly used for the diagnosis of PCN. nCLE allows for evaluation of pancreatic cysts with results similar to that of a pathological diagnosis. In this study, we will compare our standard of care, EUS alone with combined CEA and nCLE to determine which combination of diagnostic modalities is a better predictor of PCN.

Aims & Methods: In this retrospective chart review, 22 patients with pancreatic cysts were evaluated. Specificity and Negative Predictive Value (NPV) of EUS alone, EUS with CEA and nCLE combined were evaluated and diagnostic accuracy was compared with pathology using McNemar’s test. Worrisome features (increased cyst size, wall thickness, main pancreatic duct size, and presence of non enhanced mural nodules, abrupt changes, distal atrophy and lymphadenopathy) were tested by determining dissimilar calculations using Euclidean distance and later were used in hierarchical clustering to create two clusters based on Euclidean distance.

Results: Diagnosis of PCN using EUS alone had a specificity of 0.75 and a NPV of 0.88. EUS and CEA had a specificity of 0.95 and a NPV of 0.90. Finally, EUS with CEA and nCLE combined had a specificity of 0.80 and a NPV of 0.94. Worrisome features clustering was able to predict pathology, p = 0.000289.

Conclusion: We concluded that specificity and NPV of EUS predicting PCN are positively impacted by the addition of CEA and nCLE. We also found that clustering of worrisome features predicts pathology, however, a larger cohort is required for future studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0149 FULL-SPECTRUM ENDOSCOPY FOR UPPER GASTROINTESTINAL SCREENING INCLUDING PRECISE OBSERVATION OF THE AMPULLA OF VATER AND THE ANAL Sphincter Ring
H. Yamada1, T. Shibata1, T. Kawamura1, N. Horiguchi1, M. Okubo1, T. Tahara1, M. Nagasaki1, Y. Nakagawa1, N. Ohnmy1
1Gastroenterology, Fujita Health University, Toyoake/Japan

Contact E-mail Address: hyugayama1988@yahoo.co.jp

Introduction: Endoscopic submucosal dissection (ESD) is accepted as the treatment of intestinal-type early-stage gastric cancer. However, ESD occasionally results in unfavourable outcome due to technical difficulties. Therefore, predictions of difficulties in ESD would preclude complications associated with ESD. Aims & Methods: The aim of this study is to determine the predictive factors of procedural difficulties in ESD. Between January 2009 and July 2016, 577 consecutive patients who underwent ESD for gastric neoplasms were enrolled. These patients were classified into 3 groups: group S, group L, and others. Group S comprised 30 patients who underwent ESD for the shortest duration (10–16 min). Group L comprised 30 patients who underwent ESD for the longest duration (149–215 min). Multivariate analysis was performed between Groups L and S using the following factors: location (cardia, posterior wall of angle, lesser curvature of lower gastric body and/ or others), macroscopic type (protruded, depressed or mixed), size of the resected specimen, preoperative scar, number of preoperative biopsies, (others), and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

Results: Significant differences were found regarding the number of biopsies (group L: 8, group S: 6.8, P = 0.0231), biopsy visualization of SCJ was 92% (0.0097), and size of the resected specimen >800mm²: 3 points, difficult location: 2 points, the number of biopsies > 7 pieces: 1 point, Group 5 on biopsy diagnosis: 1 point. Cases of 6 points or more was regarded as difficult to remove that takes over 70 minutes. We examined 43 patients who underwent ESD for gastrointestinal neoplasms between August to November 2016 the sensitivity was 87.5% and the specificity was 80%.

Conclusion: Our results suggest that the number of biopsies, size of the resected specimen, biopsy diagnosis, preoperative scar, number of preoperative biopsies, (others), and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0150 PREDICTIVE FACTORS OF PROCEDURAL DIFFICULTIES IN ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY-STAGE GASTRIC CANCER
H. Yamada1, T. Shibata1, T. Kawamura1, N. Horiguchi1, M. Okubo1, T. Tahara1, M. Nagasaki1, Y. Nakagawa1, N. Ohnmy1
1Gastroenterology, Fujita Health University, Toyoake/Japan

Contact E-mail Address: hyugayama1988@yahoo.co.jp

Introduction: Endoscopic submucosal dissection (ESD) is accepted as the treatment of intestinal-type early-stage gastric cancer. However, ESD occasionally results in unfavourable outcome due to technical difficulties. Therefore, predictions of difficulties in ESD would preclude complications associated with ESD. Aims & Methods: The aim of this study is to determine the predictive factors of procedural difficulties in ESD. Between January 2009 and July 2016, 577 consecutive patients who underwent ESD for gastric neoplasms were enrolled. These patients were classified into 3 groups: group S, group L, and others. Group S comprised 30 patients who underwent ESD for the shortest duration (10–16 min). Group L comprised 30 patients who underwent ESD for the longest duration (149–215 min). Multivariate analysis was performed between Groups L and S using the following factors: location (cardia, posterior wall of angle, lesser curvature of lower gastric body and/ or others), macroscopic type (protruded, depressed or mixed), size of the resected specimen, preoperative scar, number of preoperative biopsies, (others), and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

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Conclusion: Our results suggest that the number of biopsies, size of the resected specimen, biopsy diagnosis, preoperative scar, number of preoperative biopsies, (others), and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

in the lesser curvature (43.9%, 284/647). Posterior EGC was more frequent in the middle third stomach, traction assist contributes to a remarkable reduction of procedure time.

Results: Between July 2015 and September 2016, 640 patients underwent randomization. 316 patients assigned to conventional ESD and 319 patients assigned to DFC-ESD were included in the analysis set. Mean ESD procedure time was 60.7 minutes in the conventional ESD group and 58.1 minutes in the DFC-ESD group (p = 0.45). Perforation was less frequent in the DFC-ESD group (conventional ESD vs. DFC-ESD: 2.2% vs. 0.3%, p = 0.04). Among the lesions in the greater curvature of the upper or middle stomach, mean procedure time in the DFC-ESD group was shorter than the conventional ESD group (conventional ESD vs. DFC-ESD: 104.1 vs. 157.2 minutes, p = 0.01).

Conclusion: This study reveals that traction-assisted ESD does not result in quicker procedures in the entire population, but it can reduce the risk of perforation. Selectively applied to the lesions in the greater curvature of the upper or middle stomach, traction assist contributes to a remarkable reduction of procedure time.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0152 A STUDY OF THE RECOGNITION OF ENDOSCOPIC IMAGES BY MACHINE LEARNING WITH CONVOLUTIONAL NEURAL NETWORK AND DEEP LEARNING

R. Yamakawa, M. Harada, K. Kawauchi, S. Nuzuki, M. Iwata
Gastroenterology, Kaeantsu Hospital, Niiigata, Japan

Contact E-mail Address: yamakawa_rj@niiigata-min.or.jp

Introduction: The recognition of general images by machine learning (ML) with the convolutional neural network (CNN) and deep learning (DL) is good. However, the possibility of the recognition of endoscopic images by ML with CNN and DL is underdetermined.

Aims & Methods: The aim of this study was to clarify the possibility of the recognition of endoscopic images by ML with CNN and DL.

We selected 816 endoscopic images of 8 categories which include laryngopharynx (LP), thoracic esophagus (TE), abdominal esophagus (AE), gastric fundus (GF), gastric body (GB), gastric antrum (GA), duodenal bulb (DB) and descending part of the duodenum (DD). Each category had approximately 100 images. These images were randomly separated into two groups, 60% (489 images) for learning and 40% (327 images) for testing. We increased the learning group images to 8313 by adding additionally rotated images of each five degrees.

We made an ML model with three CNN layers, three Activation Function layers, two Max-Pooling layers and two Dens layers by TensorFlow and Keras. We trained the ML model with the learning group images (n = 8313) and then tested it with the testing group images (n = 327) to determine whether it can recognize the endoscopic site. Two members of our hospital staff performed the same test utilizing the same images.

Results: It took 73 minutes for the ML model to learn and 6 seconds to answer the test. The percentage of correct answers of the ML model was 70.6% in all categories (n = 327), 77.1% in LP (n = 48), 91.5% in TE (n = 47), 64.4% in AE (n = 45), 73.3% in GF (n = 38), 61.5% in GB (n = 39), 52.8% in GA (n = 36), 65.6% in DB (n = 32) and 71.4% in DD (n = 42). The average percentage of correct answers of humans was 95.4% in gastroenterologists (n = 5), 85.2% in junior residents (n = 2), 81.2% in endoscopy nurses (n = 5), 54.4% in medical clerks (n = 5) and 51.8% in floor nurses (n = 4). The percentage of correct answers of the ML model was lower than those of humans who have knowledge about endoscopic images. However, it was higher than those of other humans who do not. Concerning the possibility of the recognition of endoscopic images by ML with CNN and DL. Further study is necessary to confirm the ability of it because this study was conducted in a simple ML model with three CNN layers and a small number of images.

Disclosure of Interest: All authors have declared no conflicts of interest.
PO155 ENDOSCOPIC TREATMENT OF FISTULAS AFTER SLEEVE GASTRECTOMY: ASSESSMENT FOR SWITCHING TOWARDS INTERNAL DRAINAGE IN A REFERENCE CENTER

D. Lorenzo1, T. Guillaud1, J. Gonzalez2, A. Benezech2, S. Berda&3, T. Be&2, M. Barthel1
1Hôpital Nord, Marseille/France
2Dept. De Gastroentérologie, APHM – North Hospital, Marseille/France
3Gastroenterology, Hôpital Nord, Marseille/France

Contact E-Mail Address: diane.lorenzo@gmail.com
Introduction: Post-sleeve gastrectomy fistulas (PSGF) are major complication of bariatric surgery. Endoscopic management evolved from a fistula closure to an internal drainage (ID) strategy within the 2013 year. The main objective of this study is to evaluate the different endoscopic approaches.

Aims & Methods: This retrospective study included all patients treated for PSGF in a referral center. Closure management was defined as: initial treatment using covered-metal-stent and/or endoclips. ID management was defined as: initial treatment by nasocystic drain and/or double-pigtail-stent. The failure was defined as: need for surgery, or death.

Results: Between 2007 and 2015, 101 patients (women: N=78; mean age: 42±12years) were included. The mean delay between SG and the first endoscopy was 92±60 days. Overall success of endoscopic treatment was 86% within 6±27months. Two patients died. Primary success of ID and closure management occurred in 19/22 (86%) and 49/77 (63%) patients, respectively. Among patients in failure of closure management, 22 had secondary ID (18 being successful).

Conclusion: Endoscopic management of PSGF healed in 86% of cases. In case of collection greater than 5cm, an internal drainage should be proposed first. A second treatment by nasocystic drain should be associated with long-term care. Management in our center has changed over time with earlier first endoscopy and management of more severe patients.

Disclosure of Interest: M. Barthet: Boston scientific consultant All other authors have declared no conflicts of interest.

PO156 CLOSURE BY USING OVER-THE-SCOPE CLIPS AFTER ENDOSCOPIC FULL-THICKNESS RESECTION

J. Guo
Endoscopy Center, Shengjing Hospital of China Medical University, Shenyang/China

Contact E-Mail Address: gaoguiyi@hospital.org
Introduction: Endoscopic full-thickness resection (EFR) is a mini-invasive technique for gastrointestinal subepithelial tumors, which enables a full-thickness resection of tumors and can provide a complete basis for pathological diagnosis. Gastrointestinal fistula closure after EFR is a challenge for endoscopists. In this study, we introduced EFR with fistula closure using the over-the-scope clip (OTSC) system for gastrointestinal subepithelial tumors originating from the muscula propria.

Aims & Methods: We aimed to evaluate the feasibility and safety of fistula closure with OTSC by a retrospective analysis on the cases of EFR with defect closure using OTSC for gastrointestinal subepithelial tumors in our hospital. The patients were selected who underwent EFR for gastrointestinal subepithelial tumors originating from the muscularis propria (tumor diameter ≤3cm) in our hospital from May 2014 to December 2016. After a full-thickness resection of tumors, one or two OTSCs were released to close the defect. The success rate of defect closure with OTSC was observed and the endoscopic follow-up was performed at 1 week, 1 month, 6 months, 24 months after operation to check OTSC closure.

Results: In total 49 patients were included into the study. The full-thickness resection rate of gastrointestinal tumors in the muscularis propria was 100% (49/49), the success rate of defect closure was 100%, and the average time of defect closure was 7.3min (range: 3-27min). All patients experienced no postoperative complications such as bleeding and perforation. The postoperative follow-up time was 1-24 months (mean: 11 months), and no late complications was found.

Conclusion: OTSC can be used to perform EFR with defect closure for gastrointestinal tumors in the muscularis propria (tumor diameter ≤3cm). It is simple, convenient, safe and effective.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO157 EFFICACY OF ORAL MIXTURE OF HYDROCORTISONE SODIUM SUCCINATE AND ALUMINUM PHOSPHATE GEL FOR THE PREVENTION OF STRICURE AFTER ≥2/3 CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR ESOPHAGEAL CANCER—A SINGLE CENTER PILOT STUDY FROM CHINA

Y. Huang, X. Yan, H. Chang, Y. Zhang, W. Yao, K. Li
Gastroenterology And Hepatology, Peking University Third Hospital, Beijing/China

Contact E-Mail Address: 13911765522@163.com
Introduction: ESD has been performed on many patients with early stage esophageal squamous cell carcinoma were included in this study. They all received preventative strategy for stricture and were divided into three groups chronologically. Four patients received systemic steroid treatment (ST group), three patients received endoscopic intraluminal steroid (otramiclonel acetone 80mg) injection accompanied with systemic steroid treatment (IT + ST group), six patients received oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel (OHG group). We compared the two groups in terms of stricture rate and total number of endoscopic balloon dilatation (EBD) sessions.

Aims & Methods: To evaluate the efficacy of this mixture in single center of Beijing, China.

Patients and Methods: In total, 13 patients who underwent more than 2/3 circular or complete circular ESD for esophageal superficial squamous cell carcinoma were included in this study. They all received preventative strategy for stricture and were divided into three groups chronologically. Four patients received systemic steroid treatment (ST group), three patients received endoscopic intraluminal steroid (triamiclonel acetone 80mg) injection accompanied with systemic steroid treatment (IT + ST group), six patients received oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel (OHG group). We compared the two groups in terms of stricture rate and total number of endoscopic balloon dilatation (EBD) sessions. ST groups started with 30mg/day prednisolone on the second day post-ESD, and continued with a gradually tapering prednisolone dose, finally discontinuing systemic steroid administration 8 weeks later. IT + ST group started with 80mg intraluminal steroid at the end of ESD procedure, and 30mg/day prednisolone on the second day post-ESD which exactly was the same as ST group of tapering process. OHA group started with mixture of hydrocortisone sodium succinate and aluminum phosphate gel for prevention of the stricture after endoscopic submucosal dissection for esophageal cancer: a controlled prospective study.

Methods: In total, 13 patients who underwent more than 2/3 circular or complete circular ESD for esophageal superficial squamous cell carcinoma were included in this study. They all received preventative strategy for stricture and were divided into three groups chronologically. Four patients received systemic steroid treatment (ST group), three patients received endoscopic intraluminal steroid (otramiclonel acetone 80mg) injection accompanied with systemic steroid treatment (IT + ST group), six patients received oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel (OHG group). We compared the two groups in terms of stricture rate and total number of endoscopic balloon dilatation (EBD) sessions. ST groups started with 30mg/day prednisolone on the second day post-ESD, and continued with a gradually tapering prednisolone dose, finally discontinuing systemic steroid administration 8 weeks later. IT + ST group started with 80mg intraluminal steroid at the end of ESD procedure, and 30mg/day prednisolone on the second day post-ESD which exactly was the same as ST group of tapering process. OHA group started with mixture of hydrocortisone sodium succinate and aluminum phosphate gel for prevention of the stricture after endoscopic submucosal dissection for esophageal cancer: a controlled prospective study.

Results: There were two complete and two 75% circular ESD cases in IT + ST group, and one complete and five 75% circular ESD cases in OHG group, and one complete and five 75% circular ESD cases in OHG group.

Conclusion: Short period, oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel showed promising results for the prevention of stricture after ESD for early stage esophageal cancers.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P0158 LONG-TERM OUTCOMES OF COLD POLYPECTOMY FOR NONAMPULLARY DUODENAL ADENOMAS**


Department Of Gastroenterology, Graduate School of Medicine, Chiba University, Chiba City/Japan

Contact E-mail Address: d.maruoka@bscuit.ocn.ne.jp

**Introduction:** Cold polypectomy has a high incidence of complications such as perforation in endoscopic mucosal resection (EMR) as well as in endoscopic submucosal dissection (ESD), compared with resection of other parts of the digestive tract. We had written the first report on the safety and efficacy of cold polypectomy (cold forceps polypectomy [CFP] and cold snare polypectomy [CSP]) for sporadic SNADETs. However, there is no report on the long-term outcomes of cold polypectomy for sporadic SNADETs. In this study, we aimed to assess the long-term outcomes of cold polypectomy for sporadic SNADETs.

**Aims & Methods:** Patients without polyposis syndrome who underwent cold polypectomy for one or more SNADETs ≤5 mm in size and were diagnosed with adenomas between March 2015 and November 2016, and were followed up by endoscopy for more than 1 year were analyzed. All patients subsequently underwent upper gastrointestinal endoscopy 3 months after the intervention. The presence of residual tumors was evaluated by conducting endoscopic examinations and histopathological tests with tissue samples obtained from the cold polypectomy scars. Subsequently, patients underwent upper gastrointestinal endoscopy annually, and when residual tumors could not be denied, biopsies were taken from the scars.

**Results:** A total of 43 lesions in 33 patients were removed using cold polypectomy. Twenty patients were followed-up for more than 1 year. The mean follow-up period by upper gastrointestinal endoscopy was 13.1 (12–18) months. Of these 20 patients, 12 (60%) were men and the mean age of the subjects was 63 ± 11 years. The number of lesions were 5, 16, and 3 (21%, 69%, 8%) at the location 1st, 2nd, and 3rd portion, respectively, and 2, 3, 13, and 2 (8%, 13%, 54%, 17%) per macroscopic appearance (Isp, Ia, Ia + IIc, and IIc), respectively. Nine lesions in 8 patients were resected using CFP, while 15 lesions in 12 patients were resected using CSP. Seven of 9 (78%) and 14 of 15 (93%) lesions were removed en bloc using CFP and CSP, respectively; the other 3 lesions were removed by piecemeal resection in 2 pieces. All specimens resected using both CFP and CSP were successfully retrieved.

Histopathologic analysis showed that 21 of 24 lesions (88%) were low-grade adenomas and 9 of 24 (38%) were high-grade adenomas. The mean size of the adenomatous lesions was 4.0 ± 1.3 mm (2–6 mm). Eleven of 24 adenomas (46%) were R0 resections; 3 of 9 (33%) and 8 of 15 (53%) were R0 resections using CFP and CSP, respectively. Delayed bleeding and intraprocedural/delayed perforation were not observed in any case. The subjects were identified and biopsied at follow-up endoscopy performed 3 months after cold polypectomy, and no residual or recurrent tumor was detected morphologically or histopathologically. Although there was no recurrent case during the follow-up period, one patient died 6 months after resection because of heart failure.

**Conclusion:** Cold polypectomy is a safe and effective treatment for diminutive and small sporadic SNADETs that have been subjected to long-term follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P0160 ARTIFICIAL INTELLIGENCE DIAGNOSIS OF HELICOBACTER PYLORI INFECTION USING LINKED COLOR IMAGING**

H. Nakashima1, H. Kawahira2, H. Kawachi3, N. Sasaki1

1Foundation For Detection Of Early Gastric Carcinoma, Tokyo/Japan
2Center For Frontier Medical Engineering, Chiba University, Chiba/Japan
3Department Of Pathology, The Cancer Institute Hospital, Japan Foundation for Cancer Research, Tokyo/Japan

Contact E-mail Address: nak22515@gmail.com

**Introduction:** Esophagogastroduodenoscopy (EGD) is of growing importance in the diagnosis of *Helicobacter pylori* (HP) gastritis, because HP infection is strongly associated with gastric carcinogenesis. However, the accuracy of endoscopic diagnosis of HP infection may vary according to the experience and technique of the attending endoscopist. Here, we challenged to establish a computer-aided endoscopic diagnosis system for HP infection using two novel technologies. First is a Linkor color imaging (LCI). It is a new Image-enhanced endoscopy (IEE) using a LASER light source to enhance slight differences in tissue color. The other is Artificial Intelligence (AI). Deep Learning has attracted attention in diagnostic imaging. It is a type of AI which imitates neural network in the brain.

**Aims & Methods:** The aim of this study was to establish an AI diagnosis of HP infection using LCI. We designed a prospective study of all patients who underwent EGD and were tested for serum anti-HP IgG antibodies at our medical clinic. Subjects who had a history of HP eradication therapy were excluded in this study. A total of 220 examinees were candidates who underwent EGD and serum antibody testing. The positive IgG antibody titer of each subject was taken as the gold standard for HP infection status for this study. During EGD an endoscopist took 3 LCI pictures of the lesser curvature, greater curvature and antrum of the stomach by EG-L580NW (FUJIFILM Co., Japan). Finally, we used a total of 639 LCI pictures in the study. The specifications of the AI used in this study were as follows: Operating system: Linux (Ubuntu 14.04 LTS), Neural network: GoogleLeNet2, Framework: Caffe3, and Graphic processor unit: Geforce GTX TITAN X (NVIDIA Co., Japan). We used the convolutional neural network (CNN) architecture, and we used R (version 3.3.2.) for all statistical analyses.

**Results:** The area under the curve (AUC) of receiver operating characteristics (ROC) was 0.95 for the lesser curvature. Compared to this, the AUC of the greater curvature and antrum was 0.81 and 0.67, respectively. The AUCs obtained in the lesser curvature was significantly larger than that in the greater curvature and antrum (P < 0.01).

**Conclusion:** The results demonstrate that the AI has excellent ability to diagnose HP infection using LCI in the lesser curvature. The authors believe that AI technology with IEs is likely to become a useful image diagnostic tool.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**References**


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**P0159 ENDOSCOPIC TREATMENT OF BOERHAAVE SYNDROME: A SURPRISINGLY QUICK HEALING**

G. Sakizlis, D. Karagianannis

Gastroenterology, Iatrikon Medical Center, Athens/Greece

Contact E-mail Address: sakizlis@gmail.com

**Introduction:** Endoscopic treatment of Boerhaave Syndrome: A Surprisingly Quick Healing. Endoscopes (snakes) have a high incidence of complications such as perforation in endoscopic mucosal resection (EMR) as well as in endoscopic submucosal dissection (ESD), compared with resection of other parts of the digestive tract. We had written the first report on the safety and efficacy of cold polypectomy (cold forceps polypectomy [CFP] and cold snare polypectomy [CSP]) for sporadic SNADETs. However, there is no report on the long-term outcomes of cold polypectomy for sporadic SNADETs. In this study, we aimed to assess the long-term outcomes of cold polypectomy for sporadic SNADETs.

**Aims & Methods:** Patients without polyposis syndrome who underwent cold polypectomy for one or more SNADETs ≤5 mm in size and were diagnosed with adenomas between March 2015 and November 2016, and were followed up by endoscopy for more than 1 year were analyzed. All patients subsequently underwent upper gastrointestinal endoscopy 3 months after the intervention. The presence of residual tumors was evaluated by conducting endoscopic examinations and histopathological tests with tissue samples obtained from the cold polypectomy scars. Subsequently, patients underwent upper gastrointestinal endoscopy annually, and when residual tumors could not be denied, biopsies were taken from the scars.

**Results:** A total of 43 lesions in 33 patients were removed using cold polypectomy. Twenty patients were followed-up for more than 1 year. The mean follow-up period by upper gastrointestinal endoscopy was 13.1 (12–18) months. Of these 20 patients, 12 (60%) were men and the mean age of the subjects was 63 ± 11 years. The number of lesions were 5, 16, and 3 (21%, 69%, 8%) at the location 1st, 2nd, and 3rd portion, respectively, and 2, 3, 13, and 2 (8%, 13%, 54%, 17%) per macroscopic appearance (Isp, Ia, Ia + IIc, and IIc), respectively. Nine lesions in 8 patients were resected using CFP, while 15 lesions in 12 patients were resected using CSP. Seven of 9 (78%) and 14 of 15 (93%) lesions were removed en bloc using CFP and CSP, respectively; the other 3 lesions were removed by piecemeal resection in 2 pieces. All specimens resected using both CFP and CSP were successfully retrieved.

Histopathologic analysis showed that 21 of 24 lesions (88%) were low-grade adenomas and 9 of 24 (38%) were high-grade adenomas. The mean size of the adenomatous lesions was 4.0 ± 1.3 mm (2–6 mm). Eleven of 24 adenomas (46%) were R0 resections; 3 of 9 (33%) and 8 of 15 (53%) were R0 resections using CFP and CSP, respectively. Delayed bleeding and intraprocedural/delayed perforation were not observed in any case. The subjects were identified and biopsied at follow-up endoscopy performed 3 months after cold polypectomy, and no residual or recurrent tumor was detected morphologically or histopathologically. Although there was no recurrent case during the follow-up period, one patient died 6 months after resection because of heart failure.

**Conclusion:** Cold polypectomy is a safe and effective treatment for diminutive and small sporadic SNADETs that have been subjected to long-term follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.
Resolution White Light Endoscopy (HR-WLE) followed by HR-NBI. A careful evaluation of the antrum and corpus mucosa was performed and EGGIM score was calculated. Five different areas were considered (lesser and greater curvature in the antrum, lesser and greater curvature in the corpus and incisura) and in each area 0 (no IM), 1 (focal IM, less or equal than 30% of the area) or 2 points (extensive IM in that area, more than 30% of the area) were attributed for a total of 10 points. Biopsies were taken where the endoscopists observed IM and, if IM was not present, random biopsies were taken using the updated Sydney System protocol. Biopsies from the different sites were sent for histopathologic evaluation in specialized labs. The diagnostic performance of EGGIM was then compared to OLGIM (gold standard) and sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated. Results: IM was staged as OLGIM 0, 2, 3 and 4, respectively; 32 (41.0%), 23 (29.5%), 17 (21.8%), and 6 (7.7%) pts (no patients with OLGIM 1 were found). Table 1 shows detailed the EGGIM scores compared to OLGA. Compared to OLGIM as gold standard for the evaluation of IM, sensitivity, specificity, PPV and NPV of EGGIM classification were 97.8%, 81.2%, 88.2% and 96.3%, respectively. Eight of 6 patients were positive results using the EGGIM classification were H. pylori positive. Analyzing the subgroup of patients with OLGIM 3 and 4, the diagnostic performance of EGGIM was: sensitivity 95.6%, specificity 90.9%, PPV 81.5% and NPV 98.0%. Two of the 5 patients who resulted false positive using the EGGIM classification were H. pylori positive. A high agreement between EGGIM and OLGIM scores was observed (83.3%).

Conclusion: The EGGIM classification showed a high diagnostic performance compared to OLGIM, in particular in patients with OLGIM 3 and 4. A possible confounding factor leading to overestimation of presence of intestinal metaplasia might be the presence of H. pylori infection. This approach could be used to simplify the surveillance of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Capelle LG et al. The staging of gastritis with the OLG system by using intestinal metaplasia as an accurate alternative for atrophic gastritis. Gastrointest Endosc 2010.
3. Bansal A et al. Correlation between narrow band imaging and nonneoplastic gastric pathologic; a feasibility trial. Endoscopy 2016. EGGIM score


<table>
<thead>
<tr>
<th>% of total (within each OLGIM grade)</th>
<th>EGGIM score</th>
<th>0</th>
<th>1–2</th>
<th>3–4</th>
<th>5–7</th>
<th>8–10</th>
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COMPREHENSIVE EVALUATION OF THE LEARNING CURVE FOR PERORAL ENDOSCOPIC MYOTOMY: LESSONS FROM 1346 PATIENTS

Z. Liu1, X. Zhang1, Q. Li1, P. Zhou1
1Zhongshan Hospital, Endoscopy Center and Endoscopy Research Institute, Zhongshan Hospital, Fudan University - Zhongshan, Shanghai, China

Contact Email Address: liuzq16@fudan.edu.cn

Introduction: Peroral endoscopic myotomy (POEM) is being increasingly performed worldwide. However, studies on its learning curve are limited. A comprehensive evaluation based on risk factors is needed.

Aims & Methods: This study was aimed to evaluate the impact of various factors on the learning curve of POEM. From August 2010 to July 2015, 1346 POEM procedures performed in Zhongshan Hospital were analyzed. The primary outcome of the study was a composite outcome of aborted procedures and complication. The secondary outcomes included procedure time and hospital stay. The impact of risk factors was assessed by backward conditional logistic regression on primary and secondary outcomes. The risk-adjusted CUSUM and moving average methods were used to evaluate the outcomes.

Results: Fifty-four (4%) patients had the composite outcome with 10 aborted procedures and 44 adverse events. The composite outcome was related to case number, full-thickness myotomy and procedure time in the multivariate logistic regression. Adjusted for these risk factors, the CUSUM analysis showed that the composite outcome gradually decreased after 150 cases. The procedure time was higher in the early stage and decreased after 71 cases. Case number, in representativeness of the operative experience, is also an independent risk factor for a longer procedure time and hospital stay.

Conclusion: For POEM operators, seventy cases might be considered a threshold for learning, i.e., technical proficiency. A hundred-and-fifty cases might be considered a threshold for the decrease of aborted procedures and adverse events, i.e., technical reliability.

Disclosure of Interest: All authors have declared no conflicts of interest.

CLINICAL CURATIVE EFFECT ANALYSIS OF 162 GASTRIC STROMAL TUMORS RESECTED BY ENDOSCOPIC TREATMENTS

L. Liu, W. Liu, Z. Fan
Digestive Endoscopy Center, The First Affiliated Hospital of Nanjing Medical University, Nanjing, China

Contact Email Address: kit9178@sina.com

Introduction: Gastrintestinal stromal tumor (GIST) is one of the most common tumors originating from mesenchymal tissue of gastrointestinal tract, which accounts for about 0.2% of gastrointestinal tumors. Gastric stromal tumors are more common, accounting for about 40%–70% of GIST. At present, the endoscopic treatments of gastric stromal tumors includes endoscopic submucosal dissection (ESD), endoscopic full-thickness resection (EFR) and combined endoscopic and laparoscopic surgery.

Aims & Methods: Our study is aimed to assess the safeness and effectiveness of endoscopic treatments for gastric stromal tumor. Clinical data of 162 patients with gastric stromal tumor who underwent endoscopic treatments from June 1, 2011 to July 31st 2015 were analyzed retrospectively. The mean diameter of the tumors was 1.5 cm (0.3–5.0 cm). 104 patients received endoscopic submucosal dissection, 58 patients received endoscopic full-thickness resection. Among them, 4 operations were failed under the monitor of laparoscopy.

Results: Complications were observed in 8 patients (4.9%): bleeding during operation: 3 patients, post-operation perforation: 3 patients, respiratory tract infection: 2 patients. The mean post-operation feeding time was 2.67 days (range 1–9 days) and post-operation hospital stays were 5.39 days (range 2–10 days). The mean time of follow-up was 26.4 months (range 5–51 months). The follow-up showed that 6 patients kept on treating with oral administration of imatinib. No patient was found recurrence or death.

Conclusion: Endoscopic treatments were demonstrated as safe and effective ways to resect gastric stromal tumors in this study.

Disclosure of Interest: All authors have declared no conflicts of interest.

REFERENCES


GASTROENTEROLOGY REGISTRAR OF THE WEEK: A SOLUTION FOR AUGIB ENDOSCOPY TRAINING?

S. Budihal1, P. Wurm1
1Digestive Diseases Centre, University Hospitals Leicester, GB/United Kingdom

Contact Email Address: shivbudihal@yahoo.co.uk

Introduction: Much concern surrounds Gastroenterology Specialist Registrar (SIR) endoscopy training, especially in regards to endoscopic management of Acute Upper Gastrointestinal Bleeding (AUGIB). Recent evidence suggests there has been a decline in experience and exposure in AUGIB endoscopy.1 In July 2013 our University Hospital introduced a Consultant-led and Registrar-supported Monday to Friday, 9 to 5pm in-reach service. It comprises of a morning visit to the acute medical units and a daily inpatient emergency list. This study looked at registrar AUGIB endoscopy training after its implementation.

Aims & Methods: Endoscopy reports of patients presenting with haematemesis, melena or both who had undergone surgery during the period of 1st of May 2012 to 31st August 2013 were retrieved using the endoscopy reporting tool Unisoft and analysed. Reports where SIRs were the primary operator were considered. Number of procedures, haemostatic intervention and nature of haemostasis was analysed. This was then compared to data from the year before implementation (01/03/2012 to 31/08/2012)

Results: A total of 7 SIRs (5 Full Time and 2 Less than Full Time) performed gastroscopies on AUGIB patients as first operators under Consultant supervision. Over the 6-month period a total of 166 gastroscopies were undertaken (Mean 24). On 26 occasions, endoscopic intervention (EI) was performed (Mean 4). On average, 16% of the AUGIB patients required EI. In cases of Non Variceal Bleeding, Dual therapy was applied in 87.5% of the cases. In cases of hematemesis cases Haemospray was used. On average each SIR on an average able to perform one case of oesophageal varical banding and one case where Haemospray was utilised. Data from the 2012 cohort in comparison showed a total of 66 gastroscopies over 6 months with 13 EI. On average 13 procedures and 2–6 EI were performed by each SIR. Dual therapy was applied in only 28.5% of the cases.

Conclusion: The introduction of the Registrar of the Week Service provides a valuable opportunity for SIRs to be trained in endoscopic haemostasis and augmentation to their exposure to AUGIB patients. As per this study each SIR on an average performed endoscopy on 24 AUGIB patients. If this is extrapolated, each SIR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of EI, on average a SIR can perform around 4 interventions over 6 months, which comes to 8 per year and 40 in 5 year program. This is significantly better than in the previous cohort and other centres1. Hospitals should consider developing similar services not only to meet demands for 24/7 Consultant led AUGIB endoscopy service but provide adequate endoscopic training provision for current specialist registrars in order to ensure future competent and confident consultants.

Disclosure of Interest: All authors have declared no conflicts of interest.

REFERENCES


HIGH PERCENTAGE OF VISIBLE LESIONS IN PATIENTS WITH BARRETT’S ESOPHAGUS REFERRED WITH DYSPLASIA IN RANDOM BIOPSY

L. C. Noordzij1, W. L. Curvers1, J. Van Linschoten2, C. J. Huygen3,4, E. J. Schoon1
1Gastroenterology And Hepatology, Catharina Hospital, Eindhoven/Netherlands
2Eurhopat Of Pathology And Medical Microbiology, PAMM, Eindhoven/ Netherlands
3Laboratory Of Pathology And Medical Microbiology, PAMM, Eindhoven/ Netherlands

Contact Email Address: irma.noordzij@catharinaziekenhuis.nl

Introduction: Endoscopic recognition of dysplasia or early cancer in Barrett’s esophagus (BE) is difficult. Experience in recognition of early neoplastic lesions is thought to increase the detection of visible dysplastic lesions. A previous study reported that endoscopists in community hospitals detect neoplastic lesions at a significant lower rate than referral centres. The aim of the study was to assess the significance of dysplasia in random biopsies in BE, in the absence of reported visible lesions as well as the final outcome of pathology.

Aims & Methods: We retrospectively analysed all patients referred from 19 community hospitals to our tertiary referral centre with the diagnosis of BE with dysplasia or early adenocarcinoma (EAC) between February 2008 and April 2016. All patients underwent a dedicated imaging endoscopy with high-definition endoscopy supplemented with virtual chromoendoscopy and/or acetate acid staining at the discretion of the endoscopist. All procedures were performed by an endoscopist with extensive experience in the detection of early neoplastic lesions in BE. During endoscopy all visible lesions were noted and biopsied and/or removed by endoscopic resection (ER). Patients were included for analysis in case of absence of reporting visible lesions at referral.

Results: In total 184 patients were referred with dysplasia or EAC of which 82 patients (45.6%) referred with LGD, a visible lesion during imaging endoscopy was detected. Two cases of histology proved EAC and one confirmed LGD. In twenty-six of 31 patients (60.5%) referred with HGD, a visible lesion with histology specimens corresponding to HGD (10) and EAC (16) were found.
respectively. All cases of EAC were detected (7/7). In 18/75 (24%) patients referred with dysplasia (LGD/HGD) without a visible lesion, the referral diagnosis was thus upstaged to EAC. Overall, 41/82 (50%) lesions were found additionally.

**Conclusion:** The presence of any grade of dysplasia in random biopsies in BE screening in community hospitals is a potential marker for more severe focal pathology after endoscopic work-up in an expert centre. Training in Barrett imaging is mandatory for non-expert endoscopists.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0169 ENDOSCOPIC MANAGEMENT OF BENIGN ESOPHAGEAL FISTULAS**

A. Debourdeau, J. Gonzalez, A. Benezech, M. Barthet
Gastroenterology, Aix Marseille University, AP-HM, Hôpital Nord, Marseille; France

**Contact E-mail Address:** antoine.debourdeau@hotmail.com

**Introduction:** Nonmalignant esophagogastric fistulas (ERF) are rare but frightening clinical situations. They usually involve surgery, but the morbidity and the mortality is high. The knowledge about the modalities and outcomes after endoscopic management of ERF remain limited.

**Aims & Methods:** The aim of this study was to describe and assess the endoscopic management of benign ERF in our center. This was a retrospective study involving patients manage for benign ERF in our tertiary center between July 2012 and December 2016. The inclusion criterion was the presence of communication between esophagus and bronchial tree diagnosed and treated by endoscopy, and malignant ERFs were excluded. The ERFs were classified into three groups of sizes: punctiform (if the orifice was no larger than a straight catheter), medium and large (with visibility of bronchial tree). The primary endpoint was to document any clinical success defined as the closure of the fistula confirmed by endoscopy and persisting >6 months. The secondary endpoints were to document the characteristics of endoscopic treatment, the functional success and death, and to identify factors associated with success and death.

**TABLE 1: Demographics & Results**

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<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Timing of closure</td>
<td>Resolution at 3 months</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Resolution at 6 months</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>No resolution at 6 months</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Endoscopic treatment</td>
<td>Mean number of esophageal stents</td>
<td>3.6 (±3.9)</td>
<td>2.3 (±2.7)</td>
</tr>
<tr>
<td></td>
<td>Mean number of OTSc</td>
<td>1.2 (±1.8)</td>
<td>0.4 (±0.7)</td>
</tr>
<tr>
<td></td>
<td>At least one esophageal stent</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>At least one OTSc</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

**Results:** A total of 22 patients were included and analyzed. The endoscopies of ERF were esophageal surgery in 12 patients (54.5%), esophageal dilatation in 3 (13.6%), invasive ventilation in 3 (13.6%), radiation therapy in 2 (9.1%) and tracheostomy in 2 (9.1%). A total of 93 procedures were performed with a mean of 4.2±4.5 per patient. At some point of the management, twenty-one patients (95%) had esophageal stents placement, eight patients (36%) had over the scope clips (OTSC) placement and seven had OTSC associated with esophageal stent. The clinical success rate was 45.5% (n = 10), and 55% of the patients had a functional success (n = 12). Serious adverse events occurred in 9 patients (40.9%) such as gastrointestinal bleeding (4 patients, 18.2%), stent migration (4 patients, 18.2%), thoracic spondylodiscitis (2 patients, 9.1%) alimentary esophageal impaction (1 patient, 4.5%), stent mucosal impaction (1 patient, 4.5%), major chest pain (1 patient, 4.5%). Six patients died (27%). Clinical success was reached for 67% of punctiform ERF (p = 0.193), 50% of medium ERF (p = 1) and 14% of large ERF (p = 0.17). The factor associated with the failure of endoscopic treatment was the persistence of the fistula after 6 months (OR = 44; IC95: 3.38–573, 4; p = 0.004 multivariate analysis). The orifice’s size was associated with the mortality with 71% of death among large fistulas (p = 0.001 univariate analysis).

**Conclusion:** Endoscopic treatment of ERF can lead to 45.5% of clinical success and 55.5% of functional success. However, this outcome appears associated with the size of the fistula. Moreover, the absence of resolution after 6 months of endoscopic treatment dramatically decreases the chance for ERF healing. In conclusion, the endoscopic approach seems reasonable for small or medium orifices, and has to be attempted during six months. After this time or for larger orifices, surgery or palliative therapy should be considered.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0170 CLINICAL UTILITY OF NARROW BAND IMAGING MAGNIFYING ENDOCOPY FOR MM/MM1 ESOPHAGEAL SQUAMOUS CELL CARCINOMA**

M. Inoue1, T. Omori1, K. Nastu1, K. Aiura1
1Department Of Surgery, Kawasaki Municipal Kawasaki Hospital, Kawasaki; Japan

**Contact E-mail Address:** masaz.inoue@gmail.com

**Introduction:** Esophageal squamous cell carcinoma (ESCC) is common in Asia. Predicting invasion depth of superficial ESCC is crucial in determining the pre-operative examination because of the lymph node metastasis increases in proportion of the invasion depth of the carcinoma. According to Japanese guidelines for diagnosis and treatment of esophageal cancer, superficial invasions are divided into 5 categories: carcinoma in situ (EP), tumors invades lamina propria mucosa (LPM), lamina muscularis mucosa (MM), the submucosa to a depth of 200 μm or less from the muscularis mucosa (SM1), and the submucosa to a depth more than 200 μm (SM2). The rate of lymph node metastasis is extremely low in EP/LPM tumors, and esophageal resection (ER) is certified as precise treatment. On the other hand, the rate of lymph node metastasis in MM/MM1 tumors are reported to 10-20%, and both operation and ER are considered as their treatment. Accurate pretherapeutic diagnosis of MM/MM1 tumor is very important for selection of appropriate treatment and interests of patients. In this point, endoscopic diagnosis is very important diagnostic approach.

**Aims & Methods:** The purpose of this study is to investigate the utility of Narrow Band Imaging (NBI) magnifying endoscopy for the diagnosis of MM/MM1 ESCC. From January 2011 to April 2017, 23 patients were diagnosed as pathologically MM/MM1 ESCC in our hospital. We retrospectively analyzed their endoscopic findings and pathological findings. The depth of invasion was diagnosed by NBI magnifying endoscopy according to the Japan Endoscopy Society (JES) magnifying endoscope classification. Diagnostic criteria are based on the degree of microvascular irregularity in the target lesion observed by NBI magnifying endoscopy. Microvessels are grouped into 2 types. Type A microvessels are normal intrapapillary capillary loops or abnormal microvessels without severe irregularity. Type B microvessels are abnormal vessels with severe irregularity and highly dilated abnormal vessels, and subclassified into B1, B2, and B3 based on the running pattern or degree of dilation of severely irregular microvessels. When target lesions have B1 vessels, the invasion depth is predicted as EP or LPM. When B2 or B3 vessels are seen, the invasion depth is predicted as MM or SM1 or SM2 or deeper, respectively.

**Results:** In 23 pathologically MM/MM1 cases, clinical type diagnosed by endoscopy was 0-Hc in 16 cases (70%), 0-Hb in 3 cases (13%), 0-Hb in 3 cases (13%), and 0-Hp in 1 case (4%). Predicted depth of invasion by NBI magnifying endoscopy based on the JES classification was EP in 2 cases (9%), LPM in 7 cases (30%), MM in 10 cases (43%), SM1 in 3 cases (13%) and SM2 in 1 case (4%). Total diagnostic accuracy of MM/MM1 was 57% (13/23). When the B2 vessels were observed, diagnostic accuracy of MM/MM1 was 90% (9/10). In the cases that MM or SM1 invasion remained pathologically quite localized, B2 vessels could not be observed by NBI magnifying endoscopy. And also, in the cases with inflammation or keratinizing epithelium, precise diagnosis of microvessels were difficult.

**Conclusion:** Our data indicate that diagnosis of MM/MM1 ESCC by NBI magnifying endoscopy based on the JES classification is useful when the abnormal microvessels are observable by NBI. NBI magnifying endoscopy is essential method for pretherapeutic examination.

**Disclosure of Interest:** All authors have declared no conflicts of interest.


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**P0171 PER-ORAL ENDOSCOPIC PYLOROVOMYOTOMY (POEP) IN THE TREATMENT OF REFRACTORY GASTROPARESIS – A SINGLE CENTRE EXPERIENCE**

R. Hustak1, Z. Vackova1, J. Spicak2, L. Jurgos3, J. Martinek2
1Department Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
2Dept. Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
3Poliklinika Myrina, Bratislava/Slovak Republic

**Contact E-mail Address:** rhustak@gmail.com

**Introduction:** Gastroparesis is a chronic, debilitating motility disorder. Effective treatment is challenging especially in patients with severe symptoms. POEP is an
emerging modality for refractory gastroparesis with promising preliminary results.

Aims & Methods: The aim of this prospective case series was to assess our first (single center) experience with POEP. Main outcomes were: 1) the efficacy defined by improvement of GCSI score; 2) gastric emptying evolution and 3) satisfaction. From Nov 2015, a total of 7 patients underwent POEP. The etiology of gastroparesis was post-operative in 4, diabetic in 2 and idiopathic in 1 patient. One patient underwent POEP for gastroparesis following a multivisceral transplantation; one patient underwent both POEP and POEM (as a single procedure) for coexisting refractory idiopathic gastroparesis and achalasia. All patients had severe gastroparesis as defined by elevated GCSI score and delayed gastric emptying scintigraphy. Follow visit at 3, 6, 12-months were completed in 7/7 (100%), 5/7 (71%) and 1/7 (14%) patients, respectively. Upper GI endoscopy and scintigraphy were performed 3 months after the procedure.

Results: POEP was successfully performed in all patients. Mean procedure time was 70 minutes (range 63–106). After POEP, mean GCSI decreased from 3.0 ± 1.2 to 0.8 ± 0.7 (at 3-months) and 0.9 ± 0.8 (at 6-months). One woman developed a delayed follow maintaining excellent outcome. Treatment success was reached in 6/7 (85%) of patient, one female patient with diabetic gastroparesis did not have a major symptomatic improvement despite normalisation of gastric emptying study. Gastric scintigraphy normalized in all patients, mean half emptying time decreased from 108 ± 30 min to 62 ± 25 min; and mean bolus retention at 4 hours decreased from 17 ± 9.2% to 2.0 ± 2.0%. One patient developed bleeding ulcer 10 days after POEP, this adverse event was successfully managed endoscopically (clips) and by parenteral proton pump inhibitor.

Conclusion: We report our first experiences with POEP for refractory gastroparesis, demonstrating its feasibility and safety with promising clinical efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

<table>
<thead>
<tr>
<th>Pit pattern</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>96.0 (91.5–98.5%)</td>
<td>83.8 (94.1–99.3%)</td>
<td>98.6 (94.8–99.7%)</td>
<td>95.2 (98.9–97.7%)</td>
</tr>
<tr>
<td>Vessel pattern</td>
<td>94.7 (89.8–97.7%)</td>
<td>93.3 (87.3–99.1%)</td>
<td>94.7 (90.1–97.2%)</td>
<td>95.2 (98.9–97.7%)</td>
</tr>
<tr>
<td>Colour</td>
<td>86.7 (80.2–91.7%)</td>
<td>78.3 (69.8–85.1%)</td>
<td>83.3 (76.0–87.9%)</td>
<td>82.5 (75.6–87.8%)</td>
</tr>
</tbody>
</table>

Conclusion: We have developed the first internally validated simple classification system for the diagnosis of Barrett’s neoplasia using BLI. The classification criteria demonstrated high sensitivity and specificity particularly with regards to mucosal pit and vessel patterns. We aim to use the proposed classification in future studies for real time optical diagnosis of Barrett’s neoplasia.

Disclosure of Interest: P. Bhandari: Educational grants for research received from Olympus, Pentax and Fujifilm. All other authors have declared no conflicts of interest.

P0173 TREATMENT OF MULTIPLE GASTROINTESTINAL SUBMUCOSAL TUMORS BY SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION

J. Liu, W. Qin, Y. Huang, Z. Ren, P. Zhou
Endoscopy Center And Endoscopy Research Institute, Fudan University Zhongshan Hospital, Shanghai/China

Contact E-mail Address: liu.jingzheng@zs-hospital.sh.cn

Introduction: Submucosal tunneling endoscopic resection (STER) is a novel technique to remove the gastrointestinal submucosal tumors. Previous studies mainly focused on technical feasibility for patients with one single gastrointestinal submucosal tumor. No systematic studies about multiple upper gastrointestinal submucosal tumors synchronously removed by STER are addressed. The aim of this study was to evaluate the safety and outcome of STER in treatment of multiple gastrointestinal submucosal tumors.

Aims & Methods: From January 2011 to January 2017, 42 patients with multiple gastrointestinal submucosal tumors undergoing STER were included. Variables of each tumor and patient were analyzed. Detailed tumor characteristics included max size, sum of max size and number of tumors, and longest distance of tumor. While detailed technique information included number of tunnels, tunnel length, hospital stay, procedure time, complication, follow-up, recurrence, and metasta.

Results: Among all the cases, 96 lesions of upper gastrointestinal submucosal tumors were removed by STER. The median procedure time was 50 min (range 13.6–84.9 min). The median number of tumors was 2 (2–4). The median max size of each tumor was 1.8 cm (range 0.7–3.5 cm) and the median sum of max size of each tumor of each patient was 3 cm (range 1.3–8.6 cm). Six patients had perforative complications (14.2%), with 3 pneumothorax/hydrothorax (7.2%), 1 mucosal injury (2.4%), 1 pneumonia (2.4%), and 1 major bleeding (2.4%). Patients with different number of tunnels had similar tumor characteristics and techniques. There were significant differences in longest distance of tumors comparing two groups (p < 0.001). No local recurrence or distant metastasis was detected with a median follow-up of 33 months.

Conclusion: STER is a safety and feasible technique for multiple upper gastrointestinal submucosal tumors no matter in one tunnel or two tunnels resection. Based on the longest distance of tumors, different number of tunnels can be performed with similar procedure technique and prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0174 COMPARISON OF THE LINKED COLOR IMAGING (LCI) TECHNOLOGY AND CHROMOENDOSCOPY WITH ACETIC ACID FOR DIAGNOSIS OF BARRETT’S ESOPHAGUS

H. Neumann1, H. Neumann Sen2, P. Grimminger3, E. Corvinus1, F. Rahman1, F. Thieringer1, G.E. Tontini4, P. R. Gale4
1Universitätssmedizin Johannes Gutenberg University Mainz, Mainz/Germany
2Gastroenterologische Schwerpunktpraxis, Bad Salzuflen/Germany
3Department Of General, Visceral And Transplant Surgery, University Medical Center Mainz, Mainz/Germany
4Interdisciplinary Endoscopy, University Medical Center Mainz, Mainz/Germany

Introduction: LCI is a new imaging technique based on 4 independently acting LEDs that is enhancing the mucosal vascular pattern and surface pattern morpholgy. To date, chromoendoscopy with acetic acid is considered the gold standard for diagnosis of Barrett’s esophagus. Aims & Methods: The aim of this prospective study was to evaluate the recently introduced LCI technique compared to conventional dye spraying with acetic acid for diagnosis of Barrett’s esophagus. Therefore, consecutive patients with Barrett’s esophagus from the Prague classification and prospectively included. All Barrett segments were carefully evaluated by using high-definition white-light imaging, followed by LCI and acetic acid spraying. At each examination targeted biopsies were taken from all visible lesions, followed by random four-quadrant biopsies were applicable. Results: The diagnostic yield of conventional dye spraying was significantly higher for diagnosis of Barrett’s esophagus compared to high-definition white-light imaging. Of note, no significant difference for diagnosis of Barrett’s esophagus was noted between acetic acid chromoendoscopy and the LCI technique. LCI diagnosis was always consistent to traditional dye spraying (100% concordance). The random four-quadrant biopsy protocol did not add additional biopsies and corresponded to the one already obtained by using LCI. Conclusion: The newly introduced LCI technique is superior to high-definition white-light endoscopy for diagnosis of Barrett’s esophagus and equally effective to acetic acid dye spraying. Therefore, the LCI technique has the potential to facilitate the diagnosis of Barrett’s esophagus and to overcome the limitations of a random 4-quadrant biopsy protocol. Disclosure of Interest: All authors have declared no conflicts of interest.

P0175 ALBERTA FAMILY PRACTICE ELECTRONIC ENDOSCOPY STUDY (AFPEE)

M. Kolber1, L. Green1, N. Olivier1, R. Torrie2, O. Babenko1
1Family Medicine, University of Alberta, Edmonton/Canada/AB
2Tabor Medical Clinic, Tabor/Canada/AB

Contact E-mail Address: mkolber@ualberta.ca

Introduction: In Canada, gastroenterologists and general surgeons perform 97% of all colonoscopies. There are a number of rural Canadian Family Physicians involved in performing colonoscopies. These gastroenterologists may improve access for rural patients who require endoscopy and help improve provincial endoscopy wait times. Although some studies demonstrate that adequately trained Family Physicians are able to perform quality endoscopy, other studies question the quality of colonoscopies performed by non-gastroenterologists. Aims & Methods: The Alberta Family Physician Electronic Endoscopy Study (AFPEE) study aimed to examine the quality of colonoscopies performed by Family Physicians in Alberta, Canada. Primary outcomes include the proportion of males and females completing colonoscopies (ranging from 95.2 to 100%) The proportion of males and females who completed colonoscopies (ranging from 95.2 to 100%) The proportion of males and females who completed colonoscopies (ranging from 95.2 to 100%). Results: In this six-month study, 9 Family Physicians performed 1769 colonoscopies in 11 rural Alberta sites. The proportion of successful cecal intubations was 97.9% (95% CI: 97.2, 98.5). All physicians had over 90% successfully completed colonoscopies (ranging from 95.2 to 100%). The proportion of males and females aged 50 years old with an adenoma on a first-time colonoscopy was 67.4% (95% CI: 62.4, 72.7) and 51.1% (95% CI: 45.5, 56.7) respectively. All physicians achieved benchmarks of 30% of males and 20% for females having at least one adenoma. From all colonoscopies in the study there were 2099 pathologically confirmed adenomas or SSA of 628 advanced adenomas and 17 cancers, corresponding to 120 adenomas, 36 advanced adenomas and 1 colon cancer per 100 colonoscopies. There were 2 post-polypectomy bleeds, no perforations and no deaths. Conclusion: Alberta Family Physician colonoscopists are meeting benchmarks in endoscopy quality. Ongoing electronic collection of endoscopy quality markers should be encouraged. Supporting and training rural Family Physicians who perform endoscopy may help alleviate current wait times and improve access for rural Canadian patients. Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0176 PREDICTORS OF ADENOMA DETECTION AT COLONOSCOPY AFTER BOWEL SCOPE SURVEILLANCE: RESULTS FROM A UK PILOT SCREENING CENTRE

A. Yew1, K. Sia2, S. Jewes1, A. Veitch1, S. Ishag1, M. Brookes1, R. Mckay1, A. Veitch1, S. Shetty2, M. Maruganathan3
1Department Of Gastroenterology, Royal Wolverhampton Hospitals NHS Trust, Wolverhampton/United Kingdom
2Gastroenterology, Dudley Group Hospitals NHS Foundation Trust, Dudley/United Kingdom
3Gastroenterology And Digestive Endoscopy Unit, IRCCS Policlinico San Donato, San Donato Milanese/Italy

Contact E-mail Address: helmut.neumann@unimedizin-mainz.de

Introduction: In a randomised controlled trial, flexible sigmoidoscopy (bowel scope) reduced colorectal cancer incidence and mortality in a population aged 55-64.[1] Patients progressed to colonoscopy based on ‘high risk’ features (Table 1).[1] Based on these pivotal findings, the UK bowel scope (BS) surveillance programme was introduced in 2013 to individuals aged 55. The Wolverhampton Bowel Cancer Screening Centre was the first UK site to roll out the programme. The prevalence of BS findings and subsequent colonoscopy has not previously been evaluated in this specific cohort. Aims & Methods: We prospectively collated data from all BS patients at our centre and identified those undergoing colonoscopy between August 2013-2016. We assessed conversion rates, compliance with BS protocol and correlated endoscopic and histological findings to identify predictors of detection of pathology at colonoscopy. Univariate analysis was performed using Pearson’s chi². Results: 11,711 bowel scopes were performed, with an adenoma detection rate (ADR) of 8.5%, and conversion to colonoscopy in 421 patients (3.6%). 386 were included for analysis after excluding incomplete colonoscopy/histology. All patients were aged 55 (64.8% male). Additional ADR at colonoscopy was 35.2%, with malignant diagnoses in 1.5% (all detected at BS). The adenoma miss rate at BS was 5.2%. On univariate analysis (Table 1), polyt ≥10mm was the only indication associated with increased ADR at colonoscopy (OR 2.13, p < 0.001). Additional predictors identified included villous (not tubulovillous) histology (OR 4.41, p = 0.002), and male gender (OR 2.35, p < 0.001). These factors also significantly predicted new ≥10mm adenoma. 57 (14.8%) underwent colonoscopy outside protocol, which reduced ADR (OR 0.29, p = 0.003). After adjusting for high risk indications, changing the conversion criteria from any villous to villous only histology altered sensitivity from 27.2% to 83.3%, and specificity from 84.5% to 80.5%. Table 1: Indications for progression from BS to colonoscopy (in bold), and indication of new adenoma detection. Patients in multiple categories are included multiple times. **p < 0.05

<table>
<thead>
<tr>
<th>Indication</th>
<th>N*</th>
<th>New adenoma</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 3 polyps</td>
<td>82</td>
<td>45 (57.7%)</td>
<td>1.64 (0.88-2.34)</td>
<td>0.14</td>
</tr>
<tr>
<td>Size at least 10mm</td>
<td>196</td>
<td>86 (43.9%)</td>
<td>2.13 (1.39-3.27)</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>High grade dysplasia</td>
<td>16</td>
<td>5 (31.3%)</td>
<td>0.82 (0.28-2.41)</td>
<td>0.72</td>
</tr>
<tr>
<td>Any villous component</td>
<td>190</td>
<td>69 (36.3%)</td>
<td>1.09 (0.72-1.67)</td>
<td>0.66</td>
</tr>
<tr>
<td>&gt;2 hyperplastic polyps</td>
<td>3</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>None of the above</td>
<td>57</td>
<td>9 (15.8%)</td>
<td>0.29 (0.14-0.62)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Villous only histology</td>
<td>10</td>
<td>7 (70.0%)</td>
<td>4.41 (1.12-17.36)</td>
<td>0.02**</td>
</tr>
</tbody>
</table>

Conclusion: At BS, male gender, ≥10mm polyps, and villous histology are predictors of proximal colonic pathology. Further analyses are required to clarify the benefits of converting low-risk tubulovillous adenomas at BS to colonoscopy. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

1. WS Atkin, Lancet 2010, 375:1624-33
COLD SNARE POLYPECTOMY WITH SUBMUCOSAL COLD SNARE LIFT VERSUS ENDOSCOPIC MUCOSAL RESECTION FOR 6–10MM COLORECTAL POLYPS: A RANDOMIZED NON-INFERIORITY TRIAL

V. Papastergiou1, M. Fragaki2, I. Dimas3, A. Mpitoul2, E. Vardas2, A. Theodoropoulou1, N. Mathiou1, A. Giannakopoulou1, K. Karmiris1, D. Apsesiou1, L. Giannikaki1, G. Chlouverakis1, K. Paraskeva1, G. Pasqatis1

1Gastroenterology, Konstantopoulio Hospital, Athens/Greece
2Gastroenterology, Venticelion General Hospital, Heraklion/Greece
3Histopathology, Konstantopoulio Hospital, Athens/Greece
4Histopathology, Venticelion General Hospital, Heraklion/Greece
5University of Crete Medical School, Heraklion/Greece

Contact E-mail Address: ggraspatis@gmail.com

Introduction: Cold snare polypectomy is an established method for the resection of small colorectal polyps (SCPs); however, significant incomplete resection rates still leave room for improvement. We aimed to assess the efficacy of cold snare polypectomy with submucosal lift (SL-CSP) versus endoscopic mucosal resection (EMR), for non-pedunculated polyps 6–10 mm (ClinicalTrials.gov NCT02678663).

Aims & Methods: Dual-center, randomized, noninferiority trial. Consecutive adult patients with at least one nonpedunculated polyp 6–10 mm were enrolled. Eligible polyps were randomized (1:1) to be treated with either SL-CSP or EMR. The primary noninferiority endpoint was histologic eradication, with a noninferiority margin of –1. Evaluation of histologic complete resection relied on a postpolypectomy biopsy protocol (4 biopsies obtained in a 4-quadrant fashion from the polypectomy site margins; 1 biopsy from the base). Secondary outcomes included occurrence of intraprocedural bleeding (IPB; defined as any immediate episode requiring endoscopic haemostasis), clinically-significant postprocedural bleeding (CSPPP; any episode requiring emergency department presentation, hospitalization, or reintervention within 30 days of the procedure) and perforation.

Results: Among 689 patients screened, 155 patients with 164 eligible polyps (SL-CSP: n = 83, EMR: n = 81) were included. The overall rate of histologic complete resection was 92.8% (77/83) in the SL-CSP group and 96.3% (78/81) in the EMR group (difference 3.5%; 95% CI, –4.1 to 11.6), showing noninferiority of SL-CSP versus EMR. The SL-CSP technique was noninferior to EMR for polyps measuring 6–7 mm (SL-CSP, 93.3%; EMR, 100%; 95% CI, –7.95 to 21.3) and those 8–10 mm (SL-CSP, 92.5%; EMR, 94.7%; 95% CI, –7.91 to 13.16). By multivariate analysis, female gender (OR, 0.15; 95% CI, 0.02–1.06; P = 0.07) and Parts 0–IIa morphology (OR, 0.12; 95% CI, 0.01–1.19; P = 0.07) were marginally significant predictors correlating negatively with complete resection. Rates of IPB were similar between the two groups (SL-CSP, 3.6%; EMR; 1.2%, P = 0.3). No CSPPP or perforation occurred in either group.

Conclusions: SL-CSP appears to be an effective modification of standard cold snare technique, obviating the need to use diathermy for 6–10 mm colorectal polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO177 ASSESSMENT OF TRAINING NEEDS AND DEVELOPMENT OF A SIMULATION BASED TRAINING PROGRAMME FOR SEMI-AUTOMATED ROBOTIC COLONOSCOPY

M. Kopczynska1, R. Hopps1, S. Smith1, N. Warren2, S. Goddard1, X. Ye2, S. Dolan2

1Cardiff University School of Medicine, Cardiff/United Kingdom
2Welsh Institute For Minimal Access Therapy, Cardiff University School of Medicine, Cardiff/United Kingdom
3School Of Postgraduate Medical, Cardiff University, Cardiff/United Kingdom
4University of Lincoln, Lincoln/United Kingdom
5Population Medicine, Cardiff University, Cardiff/United Kingdom

Contact E-mail Address: dolwani@cardiff.ac.uk

Introduction: Early diagnosis of colorectal cancer whether through a symptomatic or screening pathway results in better outcomes for patients. Various studies have reported barriers to screening amongst non-responders as well as delays due to diagnostic pathways. Current constraints in the NHS include delays in diagnostic pathways. Current constraints in the NHS include access to and engagement with non-responders (1, 2).

Aims & Methods: This project forms part of the development of a training programme with the use of a simulation based training model to understand the specific training needs and methods of fulfilling these for the potential ultimate users of community-based robotic colonoscopy. This study involved participants with varying degree of skills and background knowledge in the field of colonoscopy. We enrolled three expert endoscopists, three trainee endoscopists, two novices and two experienced video gamers. All participants performed colonoscopy on a validated ‘surgical’ simulator model developed at Welsh Institute for Minimal Access Therapy (WIMAT) centre. Before testing each participant received both verbal and written instructions on the goals of the study and information about the semi-automated robotic scope along with a familiarisation period with the device. Quantitative parameters were recorded related to procedure times and lesion detection during the procedure. Afterwards participants filled out a questionnaire evaluating the robotic
colonscope. Some operators participated in a follow up session in order to assess the effect of the robotic microvasculature on their diagnostic accuracy.

Results: On average, experts required the shortest time to reach the caecum, followed by video gamers, trainees then novices. Polyp detection rate (as a proportion of total number in the model simulator colon) was the highest in the novices (91.67%) followed by the experts (86.11%), then equally, trainees and video gamers (79.17%). Four out of nine participants attended the second session where they were asked to repeat the procedure from the first session. Each participant had a lower caecal intubation time during session 2 in comparison with session 1, with a median improvement of 40% and 80%, respectively. Each of the participants also had the same or higher polyp detection rate with range of improvement between 0% and 25%. Qualitative assessment of feedback from all participants indicated that most operators felt that the role of the novel test would likely be greater in a diagnostic polyp search in an out of hospital setting. Expert operators felt that training in the device was easier but also provided less ability to torque steer due to automated sequences.

Conclusion: This is the first step in identifying specific training needs and potential for use in early diagnosis of cancer. This study also evaluated the potential to reduce the length of time for skills acquisition associated with standard colonoscopy training through the use of semi-automated robotic devices.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0183 ACHIEVING ADEQUATE LEVEL BOWEL PREPARATION WITH EVENING/MORNING OR MORNING-ONLY SPLIT-DOSING REGIMENS OF NER1006 VERSUS STANDARD 2L PEG WITH ASCORBATE: POST HOC ANALYSIS OF A PHASE 3 TRIAL

R. Biscops1, L. Clayton2
1Gastroenterology, Katholieke Universiteit Leuven, Leuven/Belgium
2Clinical Development, Norgine Ltd., Harefield, Uxbridge/United Kingdom

Contact E-mail Address: raf.biscops@uliege.be

Introduction: Effective colonoscopy requires effective bowel preparation. For detection of polyps larger than 5 mm, an adequate” segmental cleansing level has recently been defined as ≥2 or more on the Boston Bowel Preparation Scale (BBPS). The Phase 3 trial MORA compared NER1006 as an evening/morning split-dosing or a morning-only dosing regimen, against 2L PEG with ascorbate as an evening/morning split-dosing regimen (2L PEG + Asc). Treatment-blinded central readers assessed the bowel cleansing efficacy using both the Harefield Cleansing Scale (HCS) and the BBPS. This post hoc analysis shows the BBPS scores for the two primary endpoints, in those patients who had a readable colonoscopy.

Aims & Methods: In the MORA trial, 784 patients aged 18–85 were randomised to bowel preparation with morning-only or evening/morning split-dosing using either NER1006 or 2L PEG + Asc. Adequate level cleansing success was assessed according to the BBPS for both overall colon (all segments ≥2) and right colon cleansing (segmental score ≥2). The analysis includes all subjects for whom colonoscopy videos were available for assessment by central readers.

Results: A total of 792 patients were analysed. When using an evening/morning split-dosing, 249/262 (95%) patients on NER1006 achieved adequate level overall colon cleansing compared to 232/260 (89%) on 2L PEG + Asc (Table 1). Using morning-only dosing, 243/270 (90%) patients on NER1006 achieved the same. Using evening/morning split-dosing, 254/262 (97%) patients on NER1006 achieved adequate level right colon cleansing compared to 242/260 (93%) on 2L PEG + Asc. Using morning-only dosing, 253/270 (94%) patients on NER1006 achieved adequate level right colon cleansing. Adequate level cleansing success was achieved significantly more often with NER1006 evening/morning split-dosing than 2L PEG + Asc, both in the overall colon (P = 0.013) and in the right colon (P = 0.042). The slight improvement seen with NER1006 morning-only dosing in the cleansing rate of the overall colon and right sided colon was not statistically significant. Table 1: Adequate level cleansing of the overall colon and right colon segments scores 2–3 as determined by treatment-blinded central readers.

Disclosure of Interest: R. Biscops: Norgine, self: salary, speaking and teaching; funded attendance by Norgine for Investigator’s Meeting trip for the MORA trial.

L. Clayton: Employee of Norgine

References

P0184 ASSESSMENT OF COLONOSCOPY QUALITY IN CLINICAL PRACTICE COMPARED WITH EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY PERFORMANCE INDICATORS

E. Toth1, R. Jover2, C. Spada3, A. Agrawal4, P. Amaro5, L. Brink6, W. Fischbach3, M. Hütter2, A. Ono4, L. Petruzziello5, A. Naidoo1, J.F. Riemann1
1Nikhe University Hospital, Malmo/Sweden
2Hospital General Universitario de Alicante, Alicante/Spain
3Digestive Endoscopy Unit, Catholic University Rome, Rome/Italy
4Doncaster Royal Infirmary, Doncaster/United Kingdom
5Gastroenterology, Coimbra University Hospital, Coimbra/Portugal
6RI Gastrointest, Herlev Hospital Gastro/Surgical, Herlev/Denmark
7Medizinische Klinik II, Klinikum Aschaffenburg II, Med, Aschaffenburg/Germany
8Aschaffenburg Hospital, Aschaffenburg/Germany

Abstract No: P0184

Patients with successful cleansing, n (%)

<table>
<thead>
<tr>
<th></th>
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<th>NOCT (1:1)</th>
<th>MORA (1:1:1)</th>
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<td>NER1006</td>
<td>Trisulfate</td>
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<td>115/205 (56.1)</td>
<td>192/208 (92.3)</td>
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</table>

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)

Reference
Abstract No: P0184

NER1006 evening/morning split dosing
NER1006 morning only dosing
2L PEG + Asc evening/morning split dosing

Patients (N) 262 270
Patients with an adequate level cleansing success of the overall colon, n (%) 249 (95) 243 (90)
Patients with an adequate level cleansing success of the right colon, n (%) 254 (97) 253 (94)
P vs. 2L PEG + Asc (overall colon) 0.013 0.772
P vs. 2L PEG + Asc (right colon) 0.042 0.772

References

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Aims & Methods: We locally adapted a company reporting system for colonoscopy by adding in a dedicated tab, selected procedure indicators. Endoscopic QI data from reporting system DB and pathological results from another DB were extracted and merged together in a separated DB. On a regular period basis or on request, key QI are calculated and extracted. It includes adenoma detection rate (ADR), polyp detection rate, caecal intubation rate, quality of bowel preparation (using the Boston bowel preparation scale) and type of sedation. During a first period of 6 months starting in January 2016, endoscopists were encouraged to fulfill the dedicated tab on a voluntary basis. In a second period, filling of QI was mandatory. The completeness of recording was evaluated and compared between both periods, and results from second period are presented. Performance measures of all endoscopists were compared to global results of our department and to published targets.

Results: During the 6 months "mandatory-filling" period (July-December 2016), 1802 colonoscopies were performed with a QI tab fully filled in 100% of cases compared to 63.1% after the "free-filling period" (p = 0.0001). The global caecal intubation rate for screening colonoscopy was 92.9%. Mean Boston bowel preparation score was 7.2 ± 0.76 with 86.9% of cases with adequate preparation (Boston score ≥ 5; 89.9% among outpatients and 81.9% among inpatients). Colonoscopies were performed under propofol sedation in 94.1%. During this second period, the global ADR was 32.4% (range: 0%-55.7%). The polyp detection rate was 44.4% with a mean of 1.19 polyp removed by colonoscopy. The positive predictive value (PPV) of CTC in terms of the outcome “detection of ACN” was also calculated, comparisons were made after considering patients in all included studies.

Discussion of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: The aim of this study was to develop a computer-aided detection (CAD) algorithm for colonoscopy using deep learning. To evaluate the developed CAD algorithm, we retrospectively viewed colonoscopy videos from a previous randomized controlled study (UMIN000017083) conducted from April 2015 to October 2015. All examinations were performed using CF-H190i (Olympus Medical Corp., Tokyo, Japan). The videos were divided into 300 short video for machine learning and validation process. Among 300 short videos, 246 were used for the machine-learning process. The remaining 54 (33 included a lesion used to validate the CAD algorithm and 21 for in vivo evaluation of CAD algorithm) were used to evaluate the performance of the CAD algorithm. The validation samples were analyzed using the CAD algorithm and its output as the probability of the presence of a lesion in each video was computed. A receiver operating characteristic (ROC) analysis was performed to evaluate the efficacy of the CAD algorithm.

Results: The mean probability of a poly positive video was 62.1 ± 27.9%, whereas that of a poly-negative video was 18.1 ± 24.6% (P < 0.001). The area under the ROC curve for probability estimation was 0.87, which was statistically significant from chance level (P < 0.001). The present CAD algorithm could detect a polyp with 90.9% sensitivity and 76.2% specificity.

Conclusion: Our preliminary results showed that state-of-the-art artificial intelligence has the potential for achieving automatic detection of colorectal polyps. A prospective study is now planned after more machine-learning sessions.

Acknowledgment: This study was supported by JSPS KAKENHI Grant Number JP17K02972.

Disclosure of Interest: K. Mori: Kensaku Mori received research funding from Cybernet System Company and Olympus Company. All other authors have declared no conflicts of interest.

References

P0191 MOTORIZED SPIRAL COLONOSCOPY (MSC) – A FIRST FEASIBILITY TRIAL

T. Beyna, M. Schneider, D. Pullmann, H. Neuhaus
Department Of Internal Medicine, Evangelisches Krankenhaus Düsseldorf, Düsseldorf/Germany

Contact E-mail Address: tobien.beyna@evk-duesseldorf.de

Introduction: Colonoscopy is widely accepted for the diagnosis and treatment of colon diseases. Accepted quality parameters for colonoscopy include a cecal intubation rate of ≥ 90%, 10% of all colonscopies are difficult and intubation of the cecum can sometimes be impossible. The novel motorized endoscope was recently developed (Olympus Medical Systems Corporation, Tokyo, Japan) to overcome some of the limitations of standard colonoscopy with push technique by actively pleating the bowel onto the endoscope with motorized rotation of the spiral overtube. This may have advantages in cases of difficult standard colonoscopy to facilitate cecal intubation on the one hand and in all colonscopies in terms of patient comfort, sedation and also in therapeutic situations.

Aims & Methods: To evaluate feasibility and safety of MSC for diagnostic colonoscopy. Secondary endpoints were ileum intubation rate, procedure time, need for sedation and external compression, patients' pain and satisfaction, adenoma detection rate (ADR) and feasibility of therapeutic interventions. 30 consecutive patients with indication for colonoscopy meeting the inclusion criteria at a single tertiary referral center were enrolled in the trial between December 2016 and January 2017. The study was conceived as proof of concept trial with the primary aim to achieve a cecal intubation rate of at least 90% according to quality guideline recommendations.

Results: 13 male and 17 female patients were enrolled. Mean age was 68.9 years (30–90), health status was ASA-1: 16.7%, ASA-2: 36.7% and ASA-3: 46.6%. 42% of the patients had comorbidities. Indications for colonoscopy were clarification of indeterminate iron deficiency anemia (IDA, n = 5), lower gastrointestinal bleeding (GIB, n = 6), surveillance after previous polypectomy (n = 6), screening for polyps and colorectal cancer (n = 11) and others (n = 2). Sedation level (Ramsay Sedation Scale) in all patients was 3 (deep sedation). Mean amount of propofol was 305 [130–880] mg. Mean procedure time was 20.8 [11.4–55.3] min. Cecal intubation rate (technical success) was 96.7% (29/30). One incomplete colonoscopy occurred due to an unexpected postinflammatory stricture of the sigmoid. All colonscopies reaching the cecum also successfully intubated the ileum (96.7%). Only in one case external compression was needed. Adenoma detection rate was 46.7%. EMR was performed in 9 cases, 5 patients had forceps polypectomy. One case of incidental finding of submucosal invasive adenocarcinoma in EMR specimen was histologically proven to have R0 en-bloc resection. All other therapeutic interventions could also successfully be conducted (clip n = 3, argon plasma coagulation n = 1, tissue sampling n = 2). Two mild adverse events were recorded (mild superficial mucosal lesions without proctitis were observed).

Conclusion: This study represents the first clinical evaluation of the novel motorized spiral endoscope for examination of the colon. Our data show that it is effective and safe for diagnostic and therapeutic colonoscopy. It may also have potential advantages over standard colonoscopy technique in terms of effectiveness and convenience of colonoscopy.

Disclosure of Interest: H. Neuhaus: Honoraria and consultancy fees from Olympus Medical Systems Corporation. All other authors have declared no conflicts of interest.

References

P0192 TREATMENT OUTCOMES OF COLD FORCEPS POLYPECTOMY FOR PATIENTS WITH DIMINUTIVE POLYPS: A PROSPECTIVE FOLLOW-UP STUDY

H. Hasegawa1, S. Bambu2, H. Han1, H. Imaeda1, A. Nishida1, O. Inatomi2, M. Sasaki1, M. Sugimoto1, A. Andoh1
1Dept. Of Gastroenterology, JCHO Shiga Hospital, Otsu,Japan

Contact E-mail Address: hiroyase@belle.shiga-med.ac.jp

Introduction: The results of the National Polyp Study are premised on the removal of all adenomatous lesions. Cold forceps polypectomy (CFP) using jumbo biopsy forceps is a simple and safe technique used for diminutive polyps (<5 mm). The recurrence rate after CFP for patients with diminutive polyps has not been elucidated.

Aims & Methods: We have prospectively enrolled patients with diminutive polyps treated by CFP from June 15 to March 2017. Multifocal polypectomy was used for all procedures. The location, size, endoscopic findings and procedures were recorded. The patients who have undergone CFP had their follow-up colonoscopy in one year after CFP.

Results: 246 patients were enrolled for total 515 polyps from 277 patients. The size of the polyps was <3 mm/3+mm/5 mm = 379/101/35. The rate of one-bit polypectomy for adenoma was <3 mm/4 mm/5 mm = 79%/54%/33%. There was no significant difference in the one-bit rate between endoscopists’ experience. No cancer was observed in histology. Rates of delayed bleeding after CFP was 0.19% (1/515). Concomitant use of anticoagulation use of antiplatelet drugs was found in 14% (72/485), and none of them experienced delayed bleeding. No perforation occurred. Seventy-five patients had their follow-up colonoscopy so far. There are no polyps on surveillance. Among 75 patients, 62 patients had less than two polyps removed at their first colonoscopy (Group A). On the other hand, 13 patients had more than three polyps removed at their first colonoscopy (Group B). Follow-up colonoscopy revealed that the rate of newly discovered polyps in the same segment were 2% and 23% in groups A and B, respectively. The rates of newly discovered polyps in the different segment were 27% and 61% in groups A and B, respectively. When the initial CFP was performed by the endoscopist with the experience of <5 years/5–9 years/more than ten years, the rate of newly discovered polyps found at follow-up colonoscopy was 54% (14/26)/42% (8/18)/37% (11/30), respectively.

Conclusion: The rate of one-bit polypectomy was significantly higher for diminutive polyps especially less than 3 mm. Importantly there are no polyps suspicious residual or recurrent lesion. Among 75 patients, 62 patients had less than two polyps removed at their first colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0193 EFFICACY OF CIMETROPIUM BROMIDE ON POLYP DETECTION DURING COLONOSCOPIC WITHDRAWAL: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, CLINICAL TRIAL

Pusan National University Yangsan Hospital, Yangsan/Korea, Republic of

Contact E-mail Address: salsuplu@naver.com

Introduction: Colonoscopy is the most effective method for preventing colorectal cancer, as it offers easy detection and resection of polyps. Cimetropium bromide
results in colonic spasmylosis and may improve polyp detection. We studied the effect of cimetropium bromide on polyp detection during colonoscopic withdrawal.

Aims & Methods: Patients undergoing colonoscopy for screening examinations were included and randomized at cecal intubation to receive either 5 mg cimetropium bromide sublingual tablets or placebo. We evaluated the polyp detection rate (PDR), adenoma detection rate (ADR), and advanced ADR (AADR) in the right side colon as well as in the cecum.

Results: A total of 181 patients were analyzed in this study. Cimetropium group comprised of 90 patients and placebo group consisted of 90 patients. PDR, ADR, and AADR were not statistically different in cimetropium and control groups (62.6% vs. 66.6%, P = 0.571; 51.6% vs. 47.7%, P = 0.603; 3.2% vs. 7.7%, P = 0.187; respectively). Similarly, PDR and ADR in the right side colon were not significantly different between the groups (46.1% vs. 47.7%, P = 0.827; 32.9% vs. 35.5%, P = 0.714; respectively).

Conclusion: Cimetropium bromide does not improve the PDR or ADR in the right side colon or the cecum. Thus, administration of cimetropium bromide can be used in colonoscopic withdrawal.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. Monika Ferlitsch, Alan Moss, Cesare Hassan, Pradeep Bhandari, Jean-Marc Dumonceau, Gregorios Paspatis et al. Colorectal polypectomy and endoscopic mucosal resection (EMR). European Society of Gastrointestinal Endoscopy (ESGE)


nonattooing group, both side injection group was better result (94.7% vs. 81.0%, OR 4.235, p value 0.047). Most results did not have statistical association with higher lymph node yield in colorectal cancer. But in T1 cancer, the rate of adequate lymph node harvest was higher in the both side injection group, statistically (94.7% vs. 81.0%, OR 4.235, p value 0.047)

Cold snare polypectomy (CSP) was associated with higher lymph node harvest in colorectal cancer, especially in T1 cancer. And both side injection of ICG increased the rate of adequate lymph node harvest. Further studies and methods are needed to harvest adequate lymph nodes in colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: kawamura@kyoto2.jrc.or.jp

Introduction: Cold snare polypectomy (CSP) has grown in popularity worldwide due to its ease and safety with a low incidence of adverse events, such as hemorrhage and post-polypectomy syndrome. However, there are concerns regarding tumor residue with CSP because it does not use electrocoagulation, thereby eliminating its burning effect. European Society of Gastrointestinal Endoscopy (ESGE) clinical guideline suggests CSP for subcentimetre sessile polyps because of its safety despite lack of evidence for efficacy compared to HSP. The aim of this study was to investigate the success rate of CSP for complete resection of subcentimetre colorectal adenomatous polyps compared to that of HSP.

Aims & Methods: This was a prospective, multicentre, randomised controlled, non-blinded study in 12 Japanese endoscopy units. Patients aged >20 years, undergoing elective colonoscopy/polypectomy, and who provided written informed consent were included. Patients who were taking anti-thrombotic agents and undergoing hemodialysis were excluded, as well as those with inflammatory bowel diseases, polyposis, and pregnancy. Endoscopically diagnosed sessile adenomatous polyps, 4–9 mm in size, were randomly assigned to the CSP or HSP group. After complete removal of the polyp using the allocated technique, biopsy specimens from the resection margin after polypectomy were obtained. The primary endpoint was the completion rate, defined as no evidence of adenomatous tissue in the biopsied specimens, among all pathologically confirmed adenomatous polyps (full analysis set: FAS). Pre-planned subgroup analyses for the size of polyp were also conducted. The sample size was calculated according to the incomplete resection rate seen in previous articles and the required sample size was estimated at 780 lesions, including drop out cases. The protocol was approved by the institutional review board in each institution. Results: A total of 796 eligible polyps were detected in 538 of 912 patients screened for eligibility between September 2015 and August 2016. Three hundred and ninety-four lesions were assigned to the CSP group and 402 lesions were assigned to the HSP group. One hundred and nine lesions (56 in the CSP group and 53 in the HSP group) were excluded for FAS analysis. Background characteristics of the lesions (size, location, morphology, and institution) were similar in both groups. The complete resection rate for CSP was 98.2%, compared to 97.4% for HSP. The between group difference in complete resection rate was +0.8%, favouring CSP (90% CI of –0.5–2.7, p < 0.0001). Resection time, overall, was significantly shorter with CSP than with HSP (60 vs. 83 s, respectively, p < 0.001). Postoperative bleeding resided within 24 hours in 99% of the HSP group (95.5%, 2 of 402 cases). Subgroup analysis according to the size of the polyp (4–5 mm and 6–9 mm) showed a comparable complete resection rate for CSP and HSP for both subgroups of polyps.

Conclusion: The complete resection rate of CSP is not inferior to that of HSP. CSP can be one of the standard techniques for subcentimetre colorectal polyps. (Study registration: UMIN000018328)

Disclosure of Interest: All authors have declared no conflicts of interest.
with a defined AE. Treatment options, including none required, were taken from 89 consecutive CR neoplasms planned for ESD from September 2008 to December 2015. When technical difficulties arose or for patient’s safety reasons, we performed a KAR. Kaplan-Meier survival curves were used to assess the impact of LM involvement on local recurrence rate over time. The end of follow-up was considered when a local recurrence occurred or at the end of the surveillance period in those patients who did not develop the event. Comparisons were made using the log-rank test. The recurrence rate during follow-up was stratified considering advanced histology, en bloc resection and R0 resection.

Results: The ER was aborted in 5 cases (perforation n = 3; technical difficulties n = 2). Surgical intervention was needed after ER because of submucosal or linfonvascular invasion in 4 patients. Five out of the remaining 80 cases, were lost to follow-up. Finally, 75 CR neoplasms were included in 74 patients (43 male; 58.1%). Median age was 71 years (range: 37–93). Median size of the lesions was 32 mm (range 10–100). Histology was 26 (34.7%) Vienna category 3; 46 (61.3%) Vienna 4 and 3 (4%) sm1-Vienna 5. En bloc resections were obtained in 44 cases (57.7%); 33 ESD (48%) and 11 KAR (14.7%). The ER finished as p-KAR in the 31 remaining lesions (41.3%). R0 resections (n = 23; 30.7%) were achieved in 18/33 ESD and 5/42 KAR [OR = 8.9 (CI 95%: 2.8–28.3); p < 0.0001]. The median follow-up period was 16 months (1–91). Local recurrence occurred in 11 cases: 9 of the latter throughout the first year (81.8%). No surgery was needed because of recurrence. The overall recurrence rate at 36 months was 15%. The recurrence rate at 3 years showed a statistical significant difference when R0 resections were compared with R1/Rx: 0% vs. 21.5% (p = 0.03). When results were stratified according to histology and en bloc resections, no significant differences were found in the recurrence rate. When en bloc resections in pT1a (sm1); (y – v); (v) pTVM0 lesions (n = 44) were analysed separately, the LM distribution with LM0 (52.3%), 18 LM1, 6 LM2 and 3 LM3 (6.8%). There was a non-significant trend concerning the recurrence rate when LM0 (n = 23) lesions were compared with LM1/LMx (n = 21): 0% vs. 14.8% at 3 years; p = 0.06.

Conclusion: Costs of sedation-related AEs can be substantial regardless of country of origin. Disruption of patient flow and provider efficiency may add to the cost burden. Even relatively minor events may prompt additional intervention, increasing the overall cost of care.

Disclosure of Interest: R. Saunders: Rhodri Saunders is the owner of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research. P. Kranke: Peter Kranke did not receive any remuneration for work on this research project. He has previously consulted for Medtronic and Covidien. D. Whitaker: David Whitaker did not receive any remuneration for work on this research project. R. Saunders: Rhodri Saunders is the owner of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research project. She has previously consulted for Medtronic Inc.

Reference

P0200 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD): KNIFE-ASSISTED SNARE RESECTION (KAR) AND SPAIN
1Gastroenterology, Endoscopy Unit, Hospital "12 de Octubre", Madrid/Spain
2Research Institute “11+12”, Hospital Universitario “12 de Octubre”, Madrid/Spain
3Gastroenterology, Endoscopy Unit, Hospital Ruber, Madrid/Spain
4Pathology, University Hospital “12 de Octubre”, Madrid/Spain
5Gastroenterology, University Hospital “12 de Octubre”, Madrid/Spain
6Contact E-mail Address: josecarlos.marin@salud.madrid.org

Introduction: Performing CR-ESD remains challenging in Western countries and surveillance studies in this setting are not fully described. KAR has been advised as a reasonable strategy for non-expert endoscopists and difficult lesions. However, some KAR eventually requires a piecemeal resection (p-KAR). A direct comparison between these two techniques is lacking. Additionally, when the specimen is resected en bloc regardless of what procedure is used, and the only pathological risk factor for recurrence is lateral margin (LM) involvement, its implications concerning the recurrence rate should be assessed.

Aims & Methods: 1) To compare the recurrence rate after R0 and R1/Rx endoscopic resection (ER), on an ESD “intention-to-treat” basis, in a Western European setting where CR-ESD is performed by non-experts. 2) To evaluate

Main characteristics of the resected lesions by procedure

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Conclusion: Costs of sedation-related AEs can be substantial regardless of country of origin. Disruption of patient flow and provider efficiency may add to the cost burden. Even relatively minor events may prompt additional intervention, increasing the overall cost of care.

Disclosure of Interest: R. Saunders: Rhodri Saunders is the owner of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research project. J. Davis: Jason Davis is an employee of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research project. She has previously consulted for Medtronic Inc and performed this research project. P. Kranke: Peter Kranke did not receive any remuneration for work on this research project. He has previously consulted for Medtronic and Covidien. P. Kranke: Peter Kranke did not receive any remuneration for work on this research project. He has previously consulted for Medtronic and Covidien. J.R. Lightdale: Jennifer Lightdale did not receive any remuneration for work on this research project. She has previously consulted for Medtronic Inc.

Reference

P0201 ASSOCIATION BETWEEN SIZE, LOCATION AND HISTOLOGICAL CHARACTERISTICS OF COLORECTAL LATERALLY SPREADING TUMOURS
1. F. L. Mota1, J. F. Loureiro1, L. S. N. Da Costa2
2. Digestive Endoscopy Department, Hospital Sírio-Libanés, São Paulo Brazil

Contact E-mail Address: lucasndc@gmail.com

Introduction: Laterally spreading tumours (LST) are important precursors of colorectal cancer (CRC)1. The endoscopic characteristics of the LSTs, such as size and location, appear to correlate with the histological findings2,3, which is an essential data for the decision of the best therapeutic procedure to be carried out4,5.

Aims & Methods: To determine the association between size, location and the histological characteristics of colorectal LSTs by reviewing the colonoscopy and histopathological reports of the LSTs endoscopically removed between October 2013 and June 2015 at the digestive endoscopy department of a tertiary hospital. The Vienna revised classification was used for the adenomatous lesions6, and the World Health Organization (WHO) classification for the ‘sessile serrated adenomas’ (SSA)7. The regions of the colon were referred to

References
Results: A total of 218 LSTs were included in this study. Most patients (59.4%) were female. The mean age was 66.1 years, and the average size of the LSTs included was 1.69 cm. The rectal/proximal colon was the most common location (73.4%) of occurrence of the LSTs, with 34% being at the ascending colon. The most common histological type was the low grade dysplasia adenoma (Vienna 3), followed by the SSA without dysplasia with 21.6%. There was significant correlation between size and histology (p < 0.005), where the adenomatous lesions were found to be larger than the other categories. The SSAs, however, did not show this association. We identified association between location and histological type (p < 0.005): the adenomas with low grade dysplasia were most prevalent in the proximal colon. However, when the subdivision of the colon into anatomical segments was considered, the SSA without dysplasia was the most common type at the ascending colon.

Conclusion: There is association between the size and the histological characteristics of colorectal lesions with high grade dysplasia were found to be larger than the other classifications. This association, however, is not observed between SSAs lesions. There is association between location and histology; with the SSAs without dysplasia being the predominant type at the ascending colon.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Conclusion: In conclusion, after specific training, endoscopic full-thickness resection is a feasible, safe and promising resection technique. It allows complete resection of lesions affecting layers of the gut wall beneath the mucosa, without the risk of perforation. In the future, eFTR may become a valuable alternative to a surgical approach in cases where endoscopic resection was previously thought impossible.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0203 VASCULAR AND PIT-PATTERN ANALYSIS ACCORDING TO KUDO, SANO AND NICE CLASSIFICATIONS: IMPROVES AFTER AN IMAGE-BASED TRAINING PROGRAM

F. Desideri1, G. Esposito2, S. Angetti2, F. Iacopini1, M. Haefner1, E. Di Giulio3, B. Iacopini4, S. Sano5
1Gastroenterology, S. Maurizio Hospital, Bolzano/Italy
2Endoscopy Unit, S. Andrea Hospital, Rome/Italy
3Endoscopy Unit, S. Giuseppe Hospital, Albano/Italy

Contact E-mail Address: federico.desideri@gmail.com

Introduction: Narrow Band Imaging (NBI) and chromoendoscopy with methylene blue are enhancing techniques which are helpful in differentiating vascular and pit patterns of colorectal neoplasms. Therefore, they have a key-role for the adequate management of the lesions which might be candidates for endoscopic resection.

Aims & Methods: The aim of our study was to measure the interobserver agreement and the diagnostic accuracy in an endoscopic unit using methylene blue and NBI for the evaluation of the pit and vascular pattern according to the Kudo, Sano and NICE classifications of colo-rectal neoplasms, before and after a 30-minutes image-based training program. We retrospectively collected consecutive endoscopic images (NBI and with methylene blue) of colo-rectal neoplasms from the internal database. The image set was then evaluated by our gold standard composed by two expert endoscopists. Their evaluation resulted confident with histology reports in 88% of cases. The images set was then evaluated by the 9 endoscopists of the unit, before and after a 30-minutes image-based training program on enhancing techniques and surface colorectal patterns. NBI and colorectal neoplasms’ surface and vascular patterns. Interobserver agreement was calculated using the kappa statistic by Cohen. By using the gold standard evaluation as criterion standard, the accuracy of colorectal neoplasms’ evaluation before and after the training was also calculated using the McNemar test. A value of p < 0.05 was considered statistically significant.

Results: A total of 30 images were obtained (see Table). Before the training process, the interobserver agreement was minimal for Kudo (0.10 ± 0.03) and Sano (0.12 ± 0.04), and poor for the NICE classification (0.24 ± 0.05). Diagnostic accuracy was 0.33 ± 0.07, 0.54 ± 0.12 and 0.60 ± 0.10 for Kudo, Sano and NICE classifications, respectively. After the image-based training program, interobserver agreement moved to moderate for the Kudo classification (p < 0.0001) and to good for Sano and NICE classifications (p < 0.0001). Diagnostic accuracy increased significantly, too, with values of 0.60 ± 0.05, 0.76 ± 0.05, 0.80 ± 0.05 for Kudo, Sano and NICE classifications, respectively (p < 0.0001).

Conclusion: To the best of our knowledge, we present the first study on the ability of an image-based training program in increasing the interobserver agreement and diagnostic accuracy in differentiating pit and vascular patterns of colo-rectal neoplasms using all the available endoscopic classifications (Kudo, Sano and NICE classifications). Such training seems mandatory for endoscopists using enhancing techniques especially when advanced lesions are planned to be treated endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0202 SAFE AND SUCCESSFUL RESECTION OF DIFFICULT GI LESIONS USING A NOVEL SINGLE-STEP FULL-THICKNESS RESECTION DEVICE (FTRD)

P.V. Valli1, J. Mertens2, P. Bauerfeind3
1Division Of Gastroenterology And Hepatology, University Hospital Zurich, Zurich/Switzerland
2Department of Surgery, University Hospital Zurich, Zurich/Switzerland
3Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich/Switzerland

Contact E-mail Address: piero.valli@usz.ch

Introduction: Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are well-established and effective techniques for the endoscopic resection of mucosal neoplasms along the gastrointestinal (GI) tract. However, these procedures are limited to superficial lesions. In the case of deeper ingrowth into the gut wall as well as anatomic sites prone to perforation, the novel full-thickness resection device (FTRD®) opens a new dimension of possibilities for endoscopic resection.

Aims & Methods: Sixty patients underwent therapeutic endoscopic full-thickness resection (eFTR) at our institution. The procedures were carried out as follows: First, the target lesion is marked with electrocautery and the endoscope is then retracted. The full-thickness resection device (FTRD, Ovesco® Endoscopy AG, Tübingen), is fitted onto a therapeutic endoscope. The endoscope with the FTRD® is advanced to the previously marked lesion. Grasping forceps are used to take hold of the target lesion and carefully pull it into the plastic cap of the FTRD®. Immediately after deployment of the OTSC®, eFTR is performed using the hyperthermic snare within the plastic cap. The full-thickness specimen is retrieved and processed for histopathological examination. Safety, learning curve, R0 resection rate and clinical outcome of all 60 interventions were studied.

Results: EFR was performed for the following indications: 1. Recurrent adenomas (n = 22.3%) with a non-lifting sign after previous incomplete polypectomy and adenomas with a primary non-lifting sign on saline injection (n = 2.3%). 2. Non-lifting base after extensive piecemeal resection of a spreading adenoma (n = 2.3%). 3. Diverticulosis (n= 4.3%). 4. Polyps the cecal appendix (6.7%). 5. Submucosal lesions (n = 5.8%). 6. Early carcinoma (n = 7.1%). 7. Follow-up resection of a malignant polyp (n = 6.0%). 8. EFR over endolaparoscopic resection (n = 2.3%). In 97% (58/60) of the interventions, the FTRD®-mounted endoscope reached the previously marked lesion and eFTR was performed (technical success). Full-thickness resection was achieved in 88% of the cases, with an R0 resection on histological examination in 79%. The clinical success rate based on follow-up histology was even higher (88%). The following adverse events occurred: Appendicitis of the residual cecal appendix after eFTR of an appendiceal adenoma (1/58.2%). Minor bleeding at the eFTR site (2/58.3%). EFR performed accidentally without proper prior deployment of the OTSC® (1/58.2%). There was no secondary perforation or eFTR-associated mortality.

Conclusion: To the best of our knowledge, we present the first study on the ability of an image-based training program in increasing the interobserver agreement and diagnostic accuracy in differentiating pit and vascular patterns of colo-rectal neoplasms using all the available endoscopic classifications (Kudo, Sano and NICE classifications). Such training seems mandatory for endoscopists using enhancing techniques especially when advanced lesions are planned to be treated endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.
References

P0204 YIELD OF 2ND SURVEILLANCE COLONOSCOPY IN "INTERMEDIATE RISK" PATIENTS. COULD SURVEILLANCE INTERVALS BE REDEFINED?
M. Balakrishnan, B. Adeoti, S. Cerys, S. Catnach, A. King, B. Macfarlane, J. Landy
Gastroenterology, West Hertfordshire Hospitals NHS Trust, Watford/United Kingdom
Contact E-mail Address: jonathan.landy@whht.nhs.uk
Introduction: Data regarding the yield of 2nd surveillance colonoscopy after index procedure findings of advanced colonic neoplasia (ACN) are limited. The yield of ACN at 2nd surveillance is associated with high risk index or 1st surveillance findings (1). However, previous studies have heterogeneous and definition of ACN include characteristics of both "intermediate" (IR, >3 adenomas or any adenoma >10 mm) and "high risk" groups (HR, >5 adenomas or >3 adenomas with at least 1 >10 mm) as defined by BSG guidelines.
Aims & Methods: We aimed to evaluate the differences in yield of advanced colonic neoplasia at 2nd surveillance colonoscopy (S2) between “intermediate” and “high” risk patients at index colonoscopy in our unit. ACN was defined as ≥5 adenomas, any adenoma ≥1 cm, tubulovillous histology or high grade dysplasia, or cancer. Patients with HR or IR index procedures undertaken by 3 experienced, accredited bowel cancer screening colonoscopists and at least 2 surveillance colonoscopies, were identified from our local database between 2008 and 2016. Findings at 1st and 2nd surveillance procedures were assessed for the presence of ACN. Statistical analysis was undertaken using Graphpad Prism 5 using Fisher’s exact test. All tests were two tailed and a p value of <0.05 was considered significant. ORs with a 95% CI were calculated for significant findings.
Results: 218 patients meeting inclusion criteria were identified. 53% of patients had IR index findings. The median time to S2 was 49 months (IQR 48–49) for HR index patients and 72 m (IQR 70–73 m) for IR index patients. 11% of all patients had ACN at S2. 4% of IR patients v 18% of HR patients had ACN at S2. OR 0.4 (95% CI 0.2–0.6). 3% of IR patients without ACN at S1 had ACN at S2 v 15% of IR patients with ACN at S1 (ns). 11% of HR patients without ACN at S1 v 37% with ACN at S1 had ACN at S2; OR 0.2 (95% CI 0.07–0.6).
Conclusion: Stratification of high-risk index findings into HR and IR groups identifies a low-risk group at second surveillance colonoscopy. The second surveillance interval for IR patients without ACN at first surveillance might be increased as ACN is infrequently detected in this group.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0205 SAFETY OF COLD SNARE COLON POLYPECTOMY IN PATIENTS ON ANTIITHROMBOTIC MEDICATION
M. Matsumoto
Dept. Of Gastroenterology, Hokkaido Medical Center, Sapporo/Japan
Contact E-mail Address: miosakura@outlook.jp
Introduction: Cold snare polypectomy (CSP) has been increasingly used in recent years because post-polypectomy bleeding is less common with this technique than with conventional polypectomy. According to the 2012 update of the Japanese guideline for periprocedural management of antithrombotic medications issued by the Japan Gastroenterological Endoscopy Society, procedures with a low risk of hemorrhage may be performed with a short interruption or continuation of antithrombotic medication. However, the guideline does not refer to periprocedural antithrombotic management for CSP.
Aims & Methods: The objective of this study was to determine the safety of CSP in patients on antithrombotic medication. The subjects were patients who underwent CSP at this hospital between April 2014 and March 2016. Post-CSP bleeding rates were examined in relation to the use of antithrombotic medication. CSP was indicated for non-pedunculated polyps smaller than 10 mm, excluding lesions with worrisome invasion and suspected of being cancers at the preprocedural diagnostic evaluation.
Results: CSP was performed to remove 2466 polyps in 1003 patients; cancerous lesions accounted for 0.2% of them, but all had negative margins. There were 549 patients who had been taking antithrombotic medication before CSP (antithrombotic group), and 1971 (77.7%) in 817 patients not taking antithrombotic medication (non-antithrombotic group). In the antithrombotic group, 106 patients with 283 polyps continued taking the antithrombotic medication; specifically, aspirin in 41 patients with 113 polyps, clopidogrel in 13 patients with 17 polyps, dual antiplatelet therapy (DAPT) in 13 patients with 18 polyps, antiplatelet agents other than clopidogrel in 17 patients with 68 polyps, anticoagulant agents in 20 patients with 56 polyps, and antiplatelet plus anticoagulant combination therapy in 2 patients with 11 polyps. Heparin bridging was used in 13 patients with 38 polyps. Post-CSP bleeding occurred in patients on other antiplatelet or anticoagulant agents, or on heparin bridging. Clipping after CSP was more likely used in the antithrombotic group (i.e., 13.5% vs. 4.6%; p<0.01). No significant difference in post-CSP bleeding rate was observed between lesions with and without clipping (0% vs clipping vs. 0.34% without clipping; p=0.55).
Conclusion: CSP is a safe procedure even in patients on antithrombotic medication. The post-CSP rate of bleeding after CSP was not high compared with that after biopsies in patients on antithrombotic medication (post-procedural bleeding rate, 0.09–0.61%), suggesting that CSP can be virtually categorized as a procedure with a low risk for hemorrhage in the guideline for periprocedural antithrombotic medication.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0206 OPTICAL ENHANCEMENT FOR THE IN VIVO PREDICTION OF COLORECTAL POLYP HISTOLOGY
E. Klenske, C. Neufert, A. Nagel, S. Zörgl, M. F. Neurath, T. Rath
Department Of Medicine 1 University Hospital of Erlangen, Erlangen/Germany
Contact E-mail Address: entcho.klenske@uk-erlangen.de
Introduction: Diminutive polyps are a common finding among surveillance colonoscopies without having high prevalence of advanced histology, making their standardized removal cost-, time- and risk-intensive. Based on these considerations, the American Society of Gastrointestinal Endoscopy (ASGE) proposed the so called PIWI statement, in which diagnostic thresholds are defined that new technologies used for the real-time assessment of colorectal polyp histology should meet. Optical enhancement (OE) is a novel endoscopic pre-processing optical filter technology, in which the spectrum of the emitted wavelengths is reduced, thereby leading to enhanced visualization of the mucosal and vascular pattern.
Aims & Methods: In this study we aimed to assess whether OE can accurately predict the histology of diminutive colorectal polyps according to the ASGE PIWI criteria. A total of 106 colorectal polyps from 49 patients undergoing diagnostic or surveillance colonoscopy were included. The in vivo histology prediction using OE was compared to results of histopathology as a reference standard.
Results: The overall accuracy of OE for real-time prediction of polyp histology was 94.3% with a sensitivity, specificity, positive (PPV) and negative prediction value (NPV) of 100%, 95.3%, 85.4% and 100%, respectively. When including only high confidence (HC) predictions, the accuracy of OE increased to 96.5%. Sensitivity, specificity, PPV and NPV were 100%, 94.5%, 91.2% and 100%, respectively. In distal colorectal polyps the accuracy was 93.3% with sensitivity, specificity, PPV and NPV being 100%, 91.3%, 80% and 100%, respectively. The post-polypectomy colonoscopy surveillance intervals were predicted correctly in ≥90% of patients with OE.
Conclusion: Optical enhancement allows to accurately predict the histology of diminutive colorectal polyps in vivo in real-time and meets the PIWI thresholds for expanding training programs to diagnose and discarding diminutive polyps without histological assessment and for leaving distal diminutive colorectal polyps in place. Hence, optical enhancement can potentially reduce time, risk and costs associated with removal and histopathological assessment of diminutive polyps.
Disclosure of Interest: All authors have declared no conflicts of interest.
A232  United European Gastroenterology Journal 5(3S)

P2007  BLUE LASER IMAGING OPTICAL DIAGNOSIS OF COLORECTAL POLyps: ACCURACY OF THE NICE, SANO AND WASP CLASSIFICATIONS

S. Rhiere, J. Dreanic, M. Barret, M. Camus, M. Dior, B. Brieau, S. Leblanc, F. Prat, R. Coriat, S. Chaussade

Department Of Gastroenterology, Cochin Hospital, Assistance Publique-Hôpitaux de Paris, France

Contact E-mail Address: sophieclm.rhiere@gmail.com

Introduction: Imaging (BLI) is a new image-enhanced endoscopic technique, meant, in association with magnification endoscopy, to help differentiating between neoplastic and non-neoplastic colorectal polyps. A variety of endoscopic classifications have been developed to guide optical diagnosis of colorectal polyps, including the NICE, WASP and Sano classifications for the optical diagnosis of colorectal polyps using Blue Laser Imaging and magnification.

Aims & Methods: Between May 2014 and December 2015, 181 colorectal polyps in 65 patients were imaged and resected in our single center study. Each polyp was evaluated using white light endoscopy, BLI with and without magnification. An independent expert reviewed the pictures and the videos of the polyps and staged them using NICE, Sano and WASP classifications: his conclusions were compared with the actual histology of the polyps. Diagnostic performances of BLI and magnification were calculated with each endoscopic classification.

Results: 181 polyps were studied, among which 125 adenomas, 24 sessile serrated adenomas/polyps, 25 hyperplastic polyps, 2 adenocarcinomas and 11 normal colorectal mucosal samples. The median polyp size was 7 mm. Overall, the NICE, Sano and WASP classifications were comparable in terms of diagnostic performances for the optical diagnosis of colorectal adenomas (p=0.7). However, magnification provided the best results with significantly higher specificity, positive and negative predictive value, and diagnostic accuracy for the diagnosis of adenoma of 0.93 (95% CI 0.86 to 0.97), 0.80 (95% CI 0.66 to 0.91), 0.93, 0.80 and 0.9. In the rectosigmoid, negative predictive values for the diagnosis of adenoma were 0.77; 0.91; and 1.0 using NICE, Sano and WASP classifications.

Conclusion: Our work suggests that BLI with magnification is a promising technique for the optical diagnosis of colorectal polyps with a diagnostic accuracy of 80-90%. Our study did not establish significant difference between the three classifications. However, the ASGE criteria for the implementation of the "resect and discard" strategy were met for the classifications of Sano and WASP with a negative predictive value for the diagnosis of adenoma beyond 90% in the rectosigmoid.

Disclosure of Interest: J. DREANIC: HOSPIRA Congress invitation
M. Barret: 3D Matrix scientific work, Life partners europe training sessions,
M. Camus: Life partners europe, Medwork scientific work, Cook medical,
F. Med France, Ipsen Pharma, Life partners europe, MSD, Olympus: training sessions.
M. Dior: Roche: congress invitation
B. Brieau: Agenen Ipsen Pharma: congress invitation
R. Coriat: Agenen, Ipsen Pharma, Novartis oncology Celgene, Lilly, Mayolospinner, Pfizer, Roche, sanofi.

All other authors have declared no conflicts of interest.

References

P2008  AN INNOVATIVE 3D COLONOSCOPE SHAPE IMAGING SYSTEM BASED ON FIBER BRAG GRATING ARRATING

I.K. Yoo1, B. Keum2, W. Kim1, S.J. Choi1, G. Min1, S.H. Kim1, J.M. Lee2, H.S. Choi1, E.S. Kim1, Y.T. Jeen1, H.J. Chun3, H.S. Lee1, C.D. Kim2, J. Kim1, M.S. Jang1, S. Yang2

1Division of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea, Republic of
2Department of Biobics, Korea Institute of Science and Technology, Seoul/Korea, Republic of
3Center for Bionics, Korea Institute of Science and Technology, Seoul/Korea, Republic of

Contact E-mail Address: borakeum@hanmail.net

Introduction: Colonoscopy is difficult procedure, largely due to unpredictable looping during insertion. If the endoscopist is able to see the colonoscope on the image display, fewer attempts are needed to straighten the shaft of the scope. A prototype Fiber BRag Grating(FBG) scope guided endoscopy provides a facility for continuous viewing on a monitor of the position of the colonoscope during examination.

Methods: The aim of this study was to evaluate the accuracy and feasibility of the innovative 3D Colonoscopy using FBG. In the first part of the study, the FBG sensor was inserted into the working channel of a routine colonoscope in the first 70 cm from the tip of the scope. Then, the scope was placed in front of the monitor to confirm movement of the scope. In the second part of the study, patients underwent colonoscopy with a FBG sensor, the colonoscope can be displayed in anteroposterior or lateral view, or in both positions together. Fluoroscopy was used in all investigations for comparison.

Results: In the first part of the study, the results showed that the shape sensor was compatible with our FBG system and the greatest tip curvature of 80 mm. The average tip error was 1.722±1.678 mm, which corresponds to 1.50±1.46% of the total length of the sensor. Scope movement and loops were detected correctly in all cases through the monitor. The prototype used in the second part of the study showed the high correlation and little discrepancy with the comparative findings at fluoroscopy.

Conclusion: Scope-guided endoscopy using FBG sensor can be successfully used to display colonoscopy configuration. This flexible, thin and almost weightless new technology would be a novel technique for identification of colonoscopy shape.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods:

Contact E-mail Address: borakeum@hanmail.net

Introduction: Irreversible electroporation (IRE) is a promising novel technique for tumor ablation using energy current pulses. IRE can effectively remove useless cells without thermally damaging surrounding tissue. Multiphoton microscopy for evaluated the response of cancer cell to IRE ablation and found apoptotic process after applying IRE.

Aims & Methods: By using multi-photon (MP) probes, that is ABI-Nu for nucleus and PMT for mitochondria, we were focusing on these two vital intra-cellular organelles for examining the real-time phenomenon of IRE-induced apoptosis. The study was conducted in three stages. Colon cancer cell lines and normal colon mucosa and colon neoplasm tissues obtained during colonoscopic biopsy from 10 patients were stained with multi-photon (MP) probes that is ABI-Nu for nucleus and PMT for mitochondria. We evaluated the feasibility of using multiphoton microscopy (MPM) to observe IRE response. First, the IRE responses of colon cancer cell lines were compared before and after IRE. Electrical pulses were administered with a Harvard apparatus, and the changes in the intensity of the nucleus and mitochondria were observed with time. Second, the IRE response of normal colon and colon cancer tissue obtained from same patient were evaluated before and after IRE same with previous method. Also, the 3-D images of the tissues co-labelled with ABI-Nu and PMT were reconstructed. Third, to assess apoptosis, colon cancer cells were stained with the fluorescent dye Annexin V or propidium iodide (PI) after applying electroporation at the same energy used earlier. Also, in order to determine whether IRE induce apoptosis, membrane blebbing of colon cancer cell lines were examined after apply IRE.

Results: MPM images of cancer cells stained with MP probes revealed that ABI-Nu and PMT for mitochondria, we were focusing on these two vital intra-cellular organelles for examining the real-time phenomenon of IRE-induced apoptosis. The study was conducted in three stages. Colon cancer cell lines and normal colon mucosa and colon neoplasm tissues obtained during colonoscopic biopsy from 10 patients were stained with multi-photon (MP) probes that is ABI-Nu for nucleus and PMT for mitochondria. We evaluated the feasibility of using multiphoton microscopy (MPM) to observe IRE response. First, the IRE responses of colon cancer cell lines were compared before and after IRE. Electrical pulses were administered with a Harvard apparatus, and the changes in the intensity of the nucleus and mitochondria were observed with time. Second, the IRE response of normal colon and colon cancer tissue obtained from same patient were evaluated before and after IRE same with previous method. Also, the 3-D images of the tissues co-labelled with ABI-Nu and PMT were reconstructed. Third, to assess apoptosis, colon cancer cells were stained with the fluorescent dye Annexin V or propidium iodide (PI) after applying electroporation at the same energy used earlier. Also, in order to determine whether IRE induce apoptosis, membrane blebbing of colon cancer cell lines were examined after apply IRE.

Conclusion: Here, we observed using MPM that nuclear staining occurred quickly due to increased cell membrane permeability and bleb was formed after electric pulse exposure. These results are expected to challenge the understanding of the
permeability process after IRE by providing the real-time images. Additionally, Magnetic resonance imaging was performed using a Siemens 1.5 T scanner, including a 3T FITE and STI imaging. This MRI protocol would dramatically increase the accuracy of diagnostic techniques by providing in vivo cell images.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0211 LARGE (>30MM) POLYP ENDOSCOPIC MUCOSAL RESECTION: OUTCOMES AND PREDICTORS OF SUCCESS**

K. Sia1, E. Karunananda2, A. Kaweza3, S. Ishag1
1Department Of Gastroenterology, Dudley Group Hospitals NHS Foundation Trust, Dudley/United Kingdom
2Department Of Surgery, Dudley Group Hospitals NHS Foundation Trust, Dudley/United Kingdom

Contact E-mail Address: keith@sia.org

**Introduction:** Endoscopic mucosal resection (EMR) is an established therapeutic option for large (>30 mm) colonic polyps. We aimed to assess characteristics and outcomes of this cohort. Primary outcomes consisted of rates, predictors and durability of EMR success, whilst secondary outcomes included complications, malignant risk, and conversion to surgery.

**Aims & Methods:** We prospectively identified patients referred for large polyp EMR from a polyp multidisciplinary team meeting between August 2006–2016 in a district general hospital with tertiary EMR expertise. Data on demographics, polyp site, morphology, size, accessibility (SMSA), histology and follow-up endoscopy were retrospectively collected. Binary logistic regression modelling was performed using SPSS, with components comprising of year, individual SMSA components, and histology. The Kaplan-Meier approach was used to measure durability of EMR success.

**Results:** Large polyp EMR was performed in 91 patients out of 125 MDT referrals (73%). Patients had a median age of 72 (interquartile range [IQR] 14.4), and were predominantly male (60%). Polyps were sessile (46%), flat (49%) or pedunculated (4%), with a median size of 40 mm (IQR 20.5 mm), and were left-colon in 81%. Bleeding occurred in 16.5%, all of whom achieved haemostasis. The 30-day complication rate was 1.1% (delayed bleeding in 1 patient), 54 (59%) were fully resected in one session, with overall EMR success in 75 (81.5%) after an average of 1.5 sessions. On multivariable analysis, significant predictors of complete resection at first attempt (Table 1) included: increasing year, sessile polyp morphology, and non-malignant histology. Malignant histology (p < 0.001) predicted overall EMR failure, but not age, gender, year of EMR, SMSA score, or concomitant argon plasma coagulation. Of the EMR failure group, 11/16 (69%) underwent surgical resection, of which 7/11 (64%) harboured malignant polyps with R0 endoscopic resection. The overall malignant histology rate in this cohort was 11/91 (12%). In this cohort, the R0 EMR success rates was 4/11 (36%), with no recurrence after 60 months of follow-up. The overall 12-month recurrence rates following complete EMR was 1.5%, with no significant factors affecting EMR durability identified.

Table 1: Predictors of complete resection on first EMR attempt. p-values derived from bivariate regression, with bold values significant if *p < 0.05.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
</tr>
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<tbody>
<tr>
<td>Year</td>
<td>1.41*</td>
<td>1.04–1.90</td>
<td>0.048**</td>
</tr>
<tr>
<td>Size (3–3.9 cm vs. &gt;4.0 cm)</td>
<td>2.96</td>
<td>0.85–10.3</td>
<td>0.088</td>
</tr>
<tr>
<td>Site (left vs. right colon)</td>
<td>0.46</td>
<td>0.09–2.48</td>
<td>0.367</td>
</tr>
<tr>
<td>Access (easy vs. difficult)</td>
<td>1.39</td>
<td>0.38–5.14</td>
<td>0.619</td>
</tr>
<tr>
<td>Morphology (sessile vs. flat)</td>
<td>3.38</td>
<td>0.14–11.0</td>
<td>0.043**</td>
</tr>
<tr>
<td>Non-malignant histology</td>
<td>41.5</td>
<td>3.74–461</td>
<td>0.002**</td>
</tr>
</tbody>
</table>

Conclusion: Large polyp EMR is a safe and effective alternative to surgical resection of large polyps. Endoscopist experience, polyp morphology, and benign histology are the complete predictors at index EMR. Further data are required to evaluate the longer-term outcomes of malignant polyps.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0212 PROSPECTIVE RANDOMIZED CONTROLLED TRIAL COMPARING EFFICACY OF 1-L PEG-ASC WITH PRUCALOPRIDE AND 2-L PEG-ASC FOR BOWEL PREPARATION**

S.J. Choi1, Y.T. Jeen1, G. Min2, W. Kim1, J.M. Lee1, I.K. Yoo1, S.H. Kim1, J.M. Lee1, H.S. Choi2, E.S. Kim1, B. Keum2, H.S. Lee1, H.J. Chun2, C.D. Kim1
1Gastroenterology And Hepatology, Korea University Anam Hospital, Seoul/Korea, Republic of
2Division of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University College of Medicine, Seoul/Korea, Republic of

Contact E-mail Address: drcoo@andy@gmail.com

**Introduction:** Though numerous research has enabled decrease of the bowel preparation solution volume, it is still a major complaint of patients preparing for colonoscopy. There have been studied that additional administration of laxatives could lessen the amount of various formula with prokinetic effect. Prucalopride is a serotonin (5-HT4) receptor agonist which stimulate colonic mass movements and provide main propulsive force for defecation.

**Aims & Methods:** The aim of this study is to compare 2-L PEG-Asc and 1-L PEG-Asc plus prucaloprside while probe for quality of bowel cleansing while comparing the colonoscopy and patient compliance. Two hundred patients were prospectively enrolled. Patients referred for colonoscopy were divided into group A (the split-dose 2-L PEG-Asc) and group B (1-L PEG-Asc + prucalopride) randomly. During colonoscopy, each patient’s bowel preparation quality was evaluated with The Boston Bowl Preparation Scale (BBPS) and Arowchick Preparation Scale (APS). The tolerability and satisfaction of patients was determined based on a questionnaire-based survey.

Results: One hundred patients received either 2-L PEG-Asc or 1-L PEG-Asc with prucaloprside. Regarding colon cleansing outcome (BBPS and APS), the 1-L PEG-Asc with prucalopride group showed similar, but non-inferior results compared to the 2-L PEG-Asc group on both BBPS (7.63 ± 1.27 vs. 7.52 ± 1.40, p = 0.586) and APS scales (93.3% vs. 95%, p = 0.717). Tolerability was similar for both 1-L PEG-Asc with prucalopride and 2-L PEG-Asc.

**Conclusion:** 1-L PEG-Asc plus prucalopride preparation showed comparable result to traditional 2-L PEG-Asc preparation. 1-L PEG-Asc plus prucalopride preparation method could be an alternative method for bowel preparation which can relieve patient discomfort.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Colon EMR follow-up rate

Mean (±SD) 8.2 months (2.6) 10.4 (9.1)

Colon EMR follow-up rate of 6–9 months, % (n)

CI [0.54%–0.73%], (25)

Conclusion: These preliminary results suggest significant improvement in SC1 compliance with our intervention. We believe that continuing these efforts and further refining the intervention process, requiring less personnel resources, may be helpful to improve the follow-up time until 3–6 months interval while also enduring as a sustainable change for our practice.

Disclosure of Interest: M.B. Wallace: Michael Wallace reports grant support from Boston Scientific, Medtronic, Cosmo pharmaceuticals, and equity interest in iLumen. Dr Wallace is a consultant to Aries Pharmaceuticals and Lumendi Inc.

References

Table 1 Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 25)</th>
<th>Non-intervention group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site of polyp resection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectum</td>
<td>8% (2)</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Sigmoid</td>
<td>4% (1)</td>
<td>7% (4)</td>
</tr>
<tr>
<td>Recto-sigmoid</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Descending colon</td>
<td>0%</td>
<td>3% (2)</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>15% (4)</td>
<td>12% (7)</td>
</tr>
<tr>
<td>Hepatic flexure</td>
<td>15% (4)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>23% (6)</td>
<td>37% (22)</td>
</tr>
<tr>
<td>Mid ascending colon</td>
<td>0%</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Cecum</td>
<td>23% (6)</td>
<td>13% (8)</td>
</tr>
<tr>
<td>Cecum with appendiculus ileocecal valve</td>
<td>8% (2)</td>
<td>0%</td>
</tr>
<tr>
<td>Polyp histology</td>
<td>4% (1)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Sessile serrated adenoma</td>
<td>23% (6)</td>
<td>30% (18)</td>
</tr>
<tr>
<td>Tubular adenoma</td>
<td>35% (9)</td>
<td>35% (21)</td>
</tr>
<tr>
<td>Tubular adenoma with HGD</td>
<td>8% (2)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Tubulovillous adenoma</td>
<td>31% (8)</td>
<td>32% (19)</td>
</tr>
<tr>
<td>Tubulovillous adenoma with HGD</td>
<td>4% (1)</td>
<td>0%</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Follow-up Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median(range)</td>
<td>7.3 months (6–15 months)</td>
<td>7.3 months (6–15 months)</td>
</tr>
<tr>
<td>Mean (±SD)</td>
<td>8.2 months (2.6)</td>
<td>10.4 (9.1)</td>
</tr>
<tr>
<td>Colon EMR follow-up rate of 6–9 months, % (n)</td>
<td>CI [0.54%–0.73%], (25)</td>
<td></td>
</tr>
</tbody>
</table>

P0214 META-ANALYSIS SUGGESTS: INSPECT TWICE TO INCREASE RIGHT COLON ADENOMA DETECTION RATE

K. Triantafyllou, P. Gkolafas, G. Tzatzios, G. D. Dimitriadis
2nd Dept Of Internal Medicine And Research Institute, National and Kapodistrian University of Athens, Medical School, Athens/Greece

Contact E-mail Address: ktiriani@med.uoa.gr

Introduction: Missed adenomas in the right colon are of major concern for interval colon cancer (CRC) development. There is evidence from cohort and randomized controlled studies (RCTs) that a second examination of the right colon – either in direct view or in retroflexion- increases the diagnostic yield of the procedure. However, data are not accepted unanimously.

Aims & Methods: The aim of this meta-analysis was to examine the effect of a second, back-to-back mucosa inspection on the diagnostic yield of colonoscopy in the ecum and the ascending colon. We performed literature searches in MEDLINE to identify studies evaluating the effect of a second pass endoscopic examination on adenoma detection rate (ADR) and advanced ADR (AADR) in the right colon. Study outcomes effect sizes were calculated using RevMan 5.3 software fixed or random effect model, as appropriate, and they are presented as OR[95%CI]. Heterogeneity was measured using the I2 statistics. Publication bias was assessed by funnel plots inspection and the quality of the meta-analyzed studies was assessed using the Jadad criteria.

Results: We identified 8 studies (5 cohort and 3 RCT, with 9 sets of data and 5639 subjects – mixed CRC screening/surveillance and symptomatic population) that reported on the aforementioned outcomes. Two sets of data examined the yield of the second direct view as compared to that of a single inspection, one set examined the cumulative yield of two passes compared to that of an extended (timely) inspection of the right colon and six sets of data evaluated the yield of the second examination of the right colon with scope retroflexion compared to that of the single direct view. We were moderate risk of bias studies; suspicion for publication bias was detected in the direct view arm of the analysis. As compared to a single pass, the second right colon inspection significantly increased ADR (1.31 [1.15–1.49], I2 = 49%). The effect size of ADR was higher in the direct view second pass arm (1.73 [1.41–2.12], I2 = 0%) as compared to the retroflexion arm (1.17 [1.06–1.29], I2 = 0%). Sensitivity analysis with removal of one study each time did not identify a single study responsible for the detected heterogeneity. Our analysis did not show significant increase in right colon AADR (1.5 [0.76–1.56], I2 = 0%) after the second exam.

Conclusion: In comparison to a single pass, the second inspection of the right colon either in direct view or with scope retroflexion increases ADR in this colon segment. However, results should be interpreted cautiously due to the small number of meta-analyzed studies with mixed indications populations, and the detected moderate levels of heterogeneity and risk for bias.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0215 ENDOSCOPIC FULL-THICKNESS RESECTION FOR T1 EARLY RECTAL CANCER: A CASE SERIES (WITH VIDEO)

S. Vavassori1, P. Soriani1, G.E. Tontini1, H. Neumann2, G. De Nucc1, D. De Tom2, B. Brun1, L. Pastorelli1, M. Vecchi1, P. Lagoussis1
1Gastroenterology And Digestive Endoscopy Unit, IRCCS Policlinico San Donato, San Donato Milanese/Italy
2Interventional Endoscopy Center, I. Medizinische Klinik Und Poliklinik, Universität Erlangen-Nürnberg, Mainz/Germany
3Ass Rit Schnee, Garbagnate Milanese/Italy
4Oncology, IRCCS Policlinico San Donato, San Donato Milanese/Italy
5Pathology And Citodiagnostic Unit, IRCCS Policlinico San Donato, San Donato Milanese/Italy
6Department Of Biomedical Sciences For Health, University of Milan, Milan/Italy
7Division Of General Surgery I, IRCCS Policlinico San Donato, San Donato Milanese/Italy

Contact E-mail Address: paola.soriani@gmail.com

Introduction: Endoscopic treatment of malignant colorectal polyps is often challenging, especially for early rectal cancer (ERC) localized close to the dentate line. Conversely, the surgical approach may result in temporary or definitive stoma and in frequent post-surgical complications [1–2]. Endoscopic Full Thickness resection (EFTR) is a novel technique that, besides having other indications, appears to be promising for wall-thickness excision of intestinal T1 carcinoma following incomplete endoscopic resection [3–4].

Aims & Methods: Follow-up data on patients treated with this device are scarce, particularly for ERC. We enrolled six consecutive patients with T1-ERC. They were treated with the EFTR, after appropriate staging, and their long-term outcomes were evaluated based on a detailed clinical and instrumental assessment. Results: The endoscopic en bloc full-thickness resection was technically feasible in all patients. The histopathologic analysis showed a complete endoscopic resection in all cases, and a full-thickness excision in four. Neither complication, nor disease recurrence was observed during the one-year follow-up performed. Conclusion: EFTR is a promising tool for treating ERC featuring a residual risk of disease recurrence after incomplete endoscopic mucosal resection in patients unfit for surgery or refusing surgical approach.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
### Abstract No:P0215

**Table 1: T1 early rectal cancer features, indications to endoscopic full-thickness resection, and follow-up.**

| # | Rectal site | Endoscopic features | Positive Ueno's criteria after en bloc EMR | Indication to EFTR | Pre-EFTR staging | Histology following EFTR | Follow-up after EFTR |
|---|---|---|---|---|---|---|---|---|
| 1 | Distal | 30 mm, Is, Kudo V, negative lifting sign | Tumor budding, excision margin, width of submucosal invasion | unfit for surgery (ASA IV) | T0, N0 | R0, full-thickness resection; histology negative for residual disease | Endoscopy, EUS, and CT negative at 3 and 12 months; Endoscopy and EUS negative at 18 months. |
| 2 | Distal | 20 mm, 1 sp, Kudo III, negative lifting sign | Tumor budding, Haggitt's level, excision margin, depth and width of submucosal invasion | refusing surgery (ASA II) | T0, N0 | R0, full-thickness resection; histology negative for residual disease | Endoscopy, EUS and CT negative at 6 and 12 months. |
| 3 | Distal | 18 mm, 1 sp, Kudo III, negative lifting sign | Haggitt's level, excision margin, depth and width of submucosal invasion | refusing surgery (ASA III) | T0, N0 | R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease | Endoscopy, EUS and CT negative at 6 and 12 months. |
| 4 | Proximal | 0.6 mm, Is, Kudo V, negative lifting sign | Haggitt's level, excision margin | unfit for surgery (ASA IV) | T1, N0 | R0, full-thickness resection; histology positive for adenocarcinoma | Endoscopy, EUS and CT negative at 6 months. Patient died for severe cardiac disease at 8 month follow-up. |
| 5 | Distal | 0.7 mm, Is, Kudo IV, negative lifting sign | Low tumor differentiation grade, excision margin | unfit for surgery (ASA IV) | T0, N0 | R0, full-thickness resection; histology negative for residual disease | Endoscopy, EUS and CT negative at 6 and 12 months. |
| 6 | Distal | 18 mm, 1 sp, Kudo III, negative lifting sign | Tumor budding, excision margin, width of submucosal invasion | refusing surgery (ASA III) | T0, N0 | R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease | Endoscopy, EUS and CT negative at 6 and 12 months. |

**P0216 UNTUTORED LEARNING CURVE ANALYSIS FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: PREDICTIVE FACTORS FOR COMPLEX TECHNIQUE.**

F. Ramos-Zabala1, J. Vázquez-Guerrero2, A. Azrina-Pérez3, M. García-Mayor4, A. Domínguez-Pino5, J.M. Cárdenas-Rebollo6, F.J. Pérez-Rodríguez4, J. Rodríguez-Pascual1, L. Moreno-Almazán1

1Servicio De Aparato Digestivo, Hospital Universitario HM Montepríncipe, Boadilla del Monte (Madrid)/Spain
2Servicio De Aparato Digestivo, Hospital Universitario HM Puerta del Sur, Móstoles (Madrid)/Spain
3Servicio De Anestesiología Y Reanimación, Hospital Universitario HM Montepríncipe, Boadilla del Monte (Madrid)/Spain
4Facultad de Medicina. Universidad CEU San Pablo, Madrid/Spain

Abstract No:P0216

**Complex (n=27)** | **No complex (n=27)** | **P Univ.** | **Odds ratio Univ.** | **P Mult.** | **Odds ratio Mult.**
---|---|---|---|---|---
SEX, n(%)<br>Male Female) | 16 (59.2) 11 (40.8) | 49 (60.4) 32 (39.6) | 0.910 | 0.95 (0.39–2.31) | |
AGE, n(%)<br>&lt;70 years old ≥70 years old | 17 (63) 10 (37) | 51 (63) 30 (37) | 1 | 1.00 (0.41–2.46) | |
SMOKER, n(%)<br>No Yes Former smoker | 12 (44.4) | 4 (14.8) | 11 (40.8) | 30 (37) | 0 | 362 0 | 708 | 2 | 1 1 | 8 | 0.50–6.43 | 1 | 2 | 0.46–3.12 |
ANTICOAGULANT/ANTIAGGREGANT/COAGULATION DEFICIT, n(%)<br>No Yes | 22 (81.4) | 5 (18.6) | 61 (75.3) | 20 (24.7) | 0 | 510 | 0 | 0 | 70 | 0.23–2.07 |
Body Mass Index (obese), n(%)<br>&lt;30 ≥30 | 22 (81.4) 5 (18.6) | 72 (88.9) 9 (11.1) | 0.510 | 1.82 (0.55–6.00) | |
Body Mass Index (overweight), n(%)<br>&lt;25 ≥25 | 10 (37) 17 (63) | 36 (44.4) 45 (55.6) | 0.500 | 1.36 (0.56–3.33) | |
ANESTHETIC RISK, n(%)<br>Low (ASA II-II) High (ASA III) | 18 (66.6) 9 (33.3) | 59 (72.9) 22 (27.1) | 0.539 | 1.34 (0.53–3.43) | |
PREVIOUS COLORECTAL SURGERY, n(%)<br>No Yes | 25 (92.6) 2 (7.4) | 68 (84.0) 13 (16.0) | 0.261 | 0.418 (0.09–1.99) | |
CO2 insufflation, n(%)<br>No Yes | 15 (55.6) 12 (44.4) | 16 (19.8) 65 (80.2) | &lt;0.001 | 5.08 (1.99–12.94) | 0.030 | 6.34 (1.20–33.57) |
Size, n(%)<br>&lt;35 mm ≥35 mm | 10 (37) 17 (63) | 59 (72.8) 22 (27.2) | 0.001 | 4.56 (1.81–11.46) | 0.025 | 5.74 (1.25–26.33) |
LOCATION, n(%)<br>Right Colon Left Colon Rectum | 17 (63.5) 5 (18.5) 5 (18.5) | 55 (67.9) 17 (21) 9 (11.1) | 0.932 0.342 | 1.105 (0.3-3.2) 0.56 (0.1–1.8) |
MORPHOLOGY, n(%)<br>LST-G LST-NG No LST | 16 (59.3) 9 (33.3) 2 (7.4) | 36 (44.4) 43 (53.1) 2 (2.5) | 0.108 0.587 | 1.212 (0.3–5.3) 0.44 (0.06–3.4) |
SEVERE FIBROSIS, n(%)<br>No Yes | 14 (51.9) 13 (48.1) | 75 (92.6) 6 (7.4) | &lt;0.001 | 11.61 (3.78–35.69) | 0.039 | 7.42 (1.11–49.65) |
FATTY TISSUE, n(%)<br>No Yes | 11 (40.7) 16 (59.3) | 63 (77.8) 18 (22.2) | &lt;0.001 | 5.09 (2.01–12.90) | 0.035 | 5.78 (1.13–29.53) |
Time dissection Mean, min (range) | 180 (80–280) | 131 (45–290) | not applicable | | | |

**Contact E-mail Address:** jorgevasquez11md@gmail.com

**Introduction:** Colorectal Endoscopic Submucosal Dissection (CR-ESD) is technically difficult, time-consuming, and has a long learning curve for Western endoscopists. Several factors related with greater difficulty while performing this technique have been described. Generally, during the learning curve phase, we select simple lesions while initiating the technique.

**Aims & Methods:** Our goal was to assess those factors associated with greater difficulty during untutored DSE-CR without prior selection of less difficult lesions. All patients who attended the complex colorectal polyps consultation were included consecutively. No polyps regardless of their size, morphology, location or any characteristic of greater technical difficulty were ruled out. All CR-ESDs were performed by an endoscopist with previous animal model experience. The demographic and clinical characteristics of the patient, the morphology of the lesion and factors related to the technique were collected. A complex technique...
was defined as that dissection that is not done en bloc and/or had complications.

**Results:** 112 lesions were selected, discarding 4 due to deep invasion. We evaluated in this study 108 DSE-CR, 27 (25%) of which were compatible with our definition of "complex" ESD. In Table 1 you can see the characteristics of each group. Univariate analysis showed that variables such as size over 35 mm (63% vs. 27.2%); OR 4.56 (95% CI: 1.81–11.46); P = 0.001; absence of CO2 (55.6% vs. 19.8%; OR 5.08 (95% CI: 1.99–12.94); P < 0.001), presence of serious fibrosis in the submucosa (48.1% vs. 7.4%; OR 11.61 (95% CI: 3.78–35.69); P < 0.001) and presence of fatty tissue in the submucosa (9.3% vs. 22.2%; OR 5.09 (95% CI: 2.01–12.90); P = 0.001) were related to a "complex" ESD. Finally, in the multivariate analysis, those variables were associated with a complex technique with an Odds Ratio of 7.42 for severe fibrosis (p = 0.039), 6.34 for non-CO2 insufflation (p = 0.030), 5.79 in the presence of fatty tissue in the submucosa (p = 0.035) and 3.74 in size greater than 35 mm (p = 0.025). There was no relation with the complexity of the technique the demographic-clinical characteristics of the patient, nor the location-morphology of the lesions. The duration of the technique was an average of 48 minutes longer in cases of a complex technique.

**Conclusion:** In our series the difficulty of CR-ESD was associated with factors described in other studies such as the size, the non-insufflation of CO2 and the presence of severe fibrosis in the submucosa. Our results describe the presence of fatty tissue in the submucosa as a new predictor of technical difficulty. In our study, we did not select the location to begin the technique, and in our learning curve we did not find significant differences in the performance of ESD in the proximal colon, distal or rectum.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0217 PERSISTENT PAIN AFTER COLONIC ENDOSCOPIC MUCOSAL RESECTION: PREDICTORS, A MANAGEMENT ALGORITHM AND OUTCOMES**

I. Desomer, J. T. Tate, H. Awadie, L. Pillay, G. Aldensteil, M. J. Bourke
Department Of Gastroenterology And Hepatology, Westminster Hospital, Sydney/ Australia/NW

**Contact E-mail Address:** lobkedesomer@gmail.com

**Introduction:** Endoscopic mucosal resection (EMR) of large (>20 mm) laterally spreading colon lesions (LSSL) is safe, effective and superior to surgery. This advantage is based on a day stay model of care; however, the most common adverse event is abdominal pain and this is a major impediment to its efficiency. No prospective data exist on the optimal selection of analgesics, the necessary upgrade of analgesics to fentanyl, with a starting dose of 25 micrograms (mcg) and 50 mcg in 1.75 mcg in 1 and 100 mcg in 2.

**Aims & Methods:** To develop a simple and effective management algorithm for patients with PP based on the need for analgesics in recovery. Data on consecutive patients based on the need for analgesics in recovery. Data on consecutive patients with a LSSL referred for EMR at a single, tertiary referral centre were included. We developed a simple and effective management algorithm for patients with PP based on the need for analgesics in recovery. Data on consecutive patients with a LSSL referred for EMR at a single, tertiary referral centre were included.

**Results:** No prospective data exist on the optimal selection of analgesics, the necessary upgrade of analgesics to fentanyl, with a starting dose of 25 micrograms (mcg) and 50 mcg in 1.75 mcg in 1 and 100 mcg in 2. A CT scan was performed in the 2 patients requiring 100mcg of fentanyl, showing serositis in 1 patient and no abnormalities in the other. Both patients were admitted and managed conservatively (discharge day 6 and 2 respectively). The other 5 patients were discharged home on the same day after extended recovery. Predictors of PP were lesion size ≥45 mm (P = 0.003), Paris classification (P = 0.22) and intra-procedural bleeding requiring endoscopic control (IPB, P = 0.042). Lesion size ≥45 mm and IPB were also independent variables on multivariate analysis with an odds ratio of 2.8 (95% confidence interval 1.3–6.3, p = 0.012) and 2.3 (95% confidence interval 1.05–5.2, p = 0.042 respectively (Table 1).

**Conclusion:** Pain after EMR occurs in 20% of patients and is associated with larger lesion size and intraprocedural bleeding requiring endoscopic control in a multivariate analysis. If pain subsides after parenteral acetaminophen and does not recur the patient can be safely and confidently discharged to the stepped down recovery area and after medical review allowed to leave hospital. PP despite parenteral acetaminophen heralds a more serious scenario and imaging should be considered when stronger analgesics do not relieve the pain.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Proportions of each endoscopic removal method according to size

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>CFP</th>
<th>CSP</th>
<th>HSP</th>
<th>EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 (N = 5046)</td>
<td>45.8%</td>
<td>51.8%</td>
<td>0.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>5-9 (N = 2294)</td>
<td>0.6%</td>
<td>73.8%</td>
<td>1.5%</td>
<td>24.1%</td>
</tr>
<tr>
<td>10-20 (N = 612)</td>
<td>0%</td>
<td>4.9%</td>
<td>0.7%</td>
<td>94.4%</td>
</tr>
</tbody>
</table>

Conclusion: In our clinical practice setting, the polypl removal rates were satisfactory level in single session anorectal examinations using cold polypectomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0219 META-ANALYSIS AND OWN EXPERIENCE IN THE TREATMENT OF RECTO-URETINAL FISTULA USING THE OVER-THE-SCOPE CLIP (OTSC)

M. Raithel1, M. Vetter2, A. Braun3, T. Vasilakis3, A. F. Hagel2
1St. Marien Waldkrankenhaus, Erlangen/Germany
2University Clinical Center Erlangen, Erlangen/Germany

Introduction: The transmural OTSC is used to achieve a full-thickness, serosa-to-serosa apposition (emergency & elective cases) for closure of GI wall defects (perforation, leak, fistula) with reported mean closure rates of 62–100% (range 0–100%), depending on the size of perforation, type and nature of lesion and the endoscopists’ experience3. However, recto-uretinal fistula may arise from a variety of etiologies and are mostly leaks or fistula of chronic nature, rarely acute perforations with vital wound tissue. They may occur in Crohn’s disease, but can also be a consequence of abdominal surgery, traumatic lesions or post-radiation damage.

Aims & Methods: To further explore the role of the OTSC in this particular type of fistula we analyzed own cases and 21 reports from the literature dealing with any type of recto-uretinal fistula. In total, 25 patients were identified with closure of a recto-uretinal fistula using the OTSC, but there was considerable heterogeneity, because of the fistula location (rectocutaneous n = 2, rectovaginal n = 10, rectovesical n = 7, rectourethral n = 2, other rectal fistula n = 3).

Results: In most situations a previous interdisciplinary discussion was reported before an OTSC attempt, or patients refused to undergo re-operation. However, special characteristics of these leaks were reported to make more difficult the OTSC procedure compared with other GI locations, e.g., the site of the fistula is nearby located to L. dentata and anal sphincter, it includes a localization with little space for endoscopic manipulation, fibrous and scarry tissue is around the fistula in rectum or anastomosis and there may be sometimes suture material in situ. Thus, the tissue is often fixed and there is not so much tissue for grasping tissue into the OTSC.

The diagnosis of recto-uretinal fistula was usually made by endoscopic visualization and radiologically documented extravasation of contrast media into the vagina, urethra, bladder or into other adjacent tissue. For fistula closure traumatic OTSC was mostly used, but sometimes other adjuvant therapeutic modalities were also combined locally (e.g. histoacryl injection, fibrin glue, argon plasma coagulation, brushing etc) or systemically (e.g. ascorbic acid 7.5 g i.v.) to stimulate wound healing. The procedural success of occluding various types of fistula in rectum or anastomosis and there may be sometimes suture material in nearby located to L. dentata and anal sphincter, it includes a localization with little space for endoscopic manipulation, fibrous and scarry tissue is around the fistula in rectum or anastomosis and there may be sometimes suture material in situ. Thus, the tissue is often fixed and there is not so much tissue for grasping tissue into the OTSC.

Conclusion: In conclusion, recto-uretinal fistula may be a potential indication for OTSC application, after interdisciplinary consensus, when re-operation is avoided, deemed to be too risky or cumbersome. Although this type of fistula carries some difficulties because of little space, tissue tension and fibrous or postop changes, long-term success may be achieved in around half of all patients. Further improvements should focus on increasing healing potency of the fistula or better after performing anastomosis creation (ascorbic acid?), to avoid postoperative recto-uretional leaks.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

OVER-THE-SCOPE CLIP (OTSC)

P0221 ENDOSCOPIC SUBMUCOSAL DESSECTION (ESD) IN THE RECTUM: FEASIBILITY IN AN EUROPEAN SINGLE CENTER CASE SERIES

R.M. Lackerreimer1, M. Meiborg2, S. Schrie1, C. Aubele1, E. Tsige-Eh1, M. Eddelmann1, H. Kitterer1, S. Leykau1, M. Hack2, G. Kleber3
11st Department Of Medicine, Ostallb-Klinikum, Aalen/Germany
2Ostallb-Klinikum Aalen, Institut fur Pathologie, Aalen/Germany
31st Department Of Medicine, Ostallb-Klinikum Aalen, Acad. Teaching Hospital, University of Ulm, Aalen/Germany

Introduction: While ESD in the upper GI tract is well established, it is as yet not standard of care in the colorectum. Contrary to Japan, western experience is limited and only relatively few case series have been published in Europe (e.g. Deissel et al. 2017). Aims & Methods: For the period 5/2012-1/2017 the first fifty-one consecutive patients with colorectal (n = 18/17/6 rectum/left/right hemicolon) neoplasias (diameter > 27 ± 1.3 mm, ≤ 2 cm; low grade dysplasia: n = 86; serrated/tubular/villous; high grade dysplasia: n = 12; malignant: n = 4) or hyperplastic polyps (n = 4) receiving ESD according to predefined protocol (hook or knife dual, Olympus Medical Systems, Hamburg, Germany; procedure time 162.5 ± 3 min, ≥ ≥ SD) are reported. ESD was performed by a single investigator (G.K.) trained previously by Japanese experts and in experimental models. ESD was complete (n = 22) or complemented by snare resection of a remaining stalk (n = 25) or cancelled (n = 4) with subsequent alternative treatment.


**P0223 CLINICAL USEABILITY QUANTIFICATION OF A REAL-TIME POLYP DETECTION METHOD IN VIDEOCOLONOSCOPY**

Q. Angermann\(^1\), J. Bernal\(^2\), C. Sánchez-Montes\(^3\), M. Hammami\(^4\), G. Fernández-Esparza\(^3\), O. Román\(^1\), J. Sánchez\(^1\), X. Dray\(^5\), A. Histace\(^6\)

\(^1\)University Paris-Sud, University Of Cergy-Pontoise, Ensea, Cnrs, Etis Umr 8051, Cergy-France

\(^2\)Center Computer Vision, Universitat Autònoma de Barcelona, Barcelona/Spain

\(^3\)Endoscopy Unit, Hospital Clinic, University of Barcelona, Barcelona/Spain

\(^4\)Department Of Digestive Diseases, APHP Saint Antoine Hospital, Paris/FRANCE

**Contact E-mail Address:** aymeric.histace@ensea.fr

**Introduction:** Colorectal cancer is the second leading cause of cancer death in US [1]. Its incidence can be mitigated by detecting its precursor lesion, the polyp, before it develops into cancer. Colonoscopy is still the gold standard for colon screening though some polyps are still missed. This can be explained by technical limitations of colonoscopes (camera orientation, field of view, etc.), but also by human factors (such as experience). Several computational systems, being the majority still-frame-based, have been proposed to assist clinicians in this task [2] but, to the best of our knowledge, none of them is being used in the exploration room due to not meeting real-time constraints (40 ms max per image). In this abstract, we present a methodology to adapt and evaluate a real-time still frame-based method [3] to video analysis.

**Aims & Methods:** The still frame detection system used as reference [3] was based on an active learning method. We base the adaptation to video analysis on two aspects: (i) influence of the type of information used for polyp candidate characterisation, and (ii) introduction of spatio-temporal coherence. The former study whether the combination of different types of information may lead to improve system performance whereas the latter fosters stability in the position detection of the detector output between consecutive frames. The learning stage of the method involves the use of a public still-frame database (CVC-Clinic, 612 images) whereas the testing was done on a new set of 18 sequences with a polyp (10,294 images) collected with an Olympus colonoscope CIF-H190 at Hospital Clinic, Barcelona. Performance was evaluated using two groups of metrics: (i) standard information retrieval. Recall and Precision (ii) ad-hoc learning metrics (assessing the clinical usability). Among the latter group we define: a) Polyp Image/Video Metrics: Precision, Recall and F1-Score (ii) Ad-Hoc Clinical Metrics. Performance was evaluated using two groups of metrics: (i) standard of the detector output between consecutive frames. The learning stage of the method involves the use of a public still-frame database (CVC-Clinic, 612 images) whereas the testing was done on a new set of 18 sequences with a polyp (10,294 images) collected with an Olympus colonoscope CIF-H190 at Hospital Clinic, Barcelona. Performance was evaluated using two groups of metrics: (i) standard information retrieval. Recall and Precision (ii) ad-hoc learning metrics (assessing the clinical usability). Among the latter group we define: a) Polyp Image/Video Metrics: Precision, Recall and F1-Score (ii) Ad-Hoc Clinical Metrics. Performance was evaluated using two groups of metrics: (i) standard information retrieval. Recall and Precision (ii) ad-hoc learning metrics (assessing the clinical usability).

**Results:** Table 1 shows the influence of local features on the overall performance and how the combination of both types of features can lead to an overall improvement in Recall and RT, which we interpret as local descriptors complementing each other.

<table>
<thead>
<tr>
<th>Method</th>
<th>PDR</th>
<th>MPT</th>
<th>MNP</th>
<th>Proc</th>
<th>Rec</th>
<th>F1</th>
<th>RT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texture</td>
<td>100%</td>
<td>162ms</td>
<td>0.7</td>
<td>0.7</td>
<td>39.88%</td>
<td>34.96%</td>
<td>32.22%</td>
</tr>
<tr>
<td>Local Binary Patterns</td>
<td>[3]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>100%</td>
<td>21ms</td>
<td>0.6</td>
<td>0.6</td>
<td>39.14%</td>
<td>42.56%</td>
<td>40.78%</td>
</tr>
<tr>
<td>Haar features</td>
<td>[5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>100%</td>
<td>185ms</td>
<td>1.0</td>
<td>0.72%</td>
<td>51.00%</td>
<td>38.34%</td>
<td>37.4/0.7 sec</td>
</tr>
</tbody>
</table>

**Conclusion:** Work presented in this abstract shows how a real-time still-frame-based polyp detection method can be successfully adapted to video analysis. Clinical usability metrics along with a new fully annotated video database were introduced to completely assess method performance. Results show methodology potential regarding clinical deployment as it detects all different polyps with a small RT. Results show that the sole use of shape features allows to meet real-time constraints but that a combination with a computationally efficient texture descriptor might improve frame-based performance.

**Disclosure of Interest:** X. Dray: Xavier Dray has received consultancy fees from Covidien GI solutions

**References**


**A238**

**United European Gastroenterology Journal** 5(5S)
P0224 THE EFFICACY AND SAFETY OF JUMBO FORCES BIOPSY USING NARROW-BAND IMAGING ENDOSCOPY IN PATIENTS WITH DIMINUTIVE POLYPS


1Gastroenterology & Hepatology, Osaka National Hospital, Osaka/Japan
2Gastroenterology, Kure MC & Chugoku CC, Kure/Japan
3Department Of Gastroenterology, National Hospital Organization Fukuyama Medical Center, Fukuyama/Japan
4Gastroenterology, Nagoya Medical Center, Nagoya/Japan
5Gastroenterology, Takasuki General Medical Center, Takasuki/Japan
6Kyoto Medical Center, Kyoto/Japan
7Kanazawa Medical Center, Kanazawa/Japan

Contact E-mail Address: yamatak1973@gmail.com

Introduction: Cold forces polypectomy (CFP) is commonly used to remove diminutive colorectal polyps (<5mm). In addition, jumbo biopsy forceps are superior to standard forceps for removing colorectal polyps. However, problems remain for CFP with regard to residual adenomatous tissue on histological evaluation after a complete endoscopic cold forceps polypectomy.

Aims & Methods: The aim of this study was to evaluate the efficacy and safety of jumbo forces biopsy using narrow-band imaging endoscopy in patients with diminutive polyps. In addition, we evaluated the factors related to one-bite resection using Cox’s regression model.

Results: A total of 503 patients were prospectively assessed, and 1015 polyps were resected. The median age of the patients was 65 years. The patients comprised 329 men (65%) and 174 women (35%). The polyp morphologies were 0-Is lesions in 886 cases (87.7%), 0-IIa lesions in 65 (6.4%), 0-IIp lesions in 63 (6.2%) and 0-IIp lesions in 1 (0.1%). Polyps were most often resected in the ascending colon (289 lesions) or transverse colon (262 lesions). Of all the polyps, 88% (896 lesions) were adenomas, 10% (100 lesions) were hyperplastic, and 0.3% were adenocarcinomas. The mean procedure and treatment times were 26.5 and 20.4 minutes, respectively. The complete resection rate was 99.3%. The rate of one-bite polypectomy was 71.8%, which included rates of 100%, 91.5%, 81.8%, 56.9%, and 40.5% for lesions 1, 2, 3, 4, and 5 mm in diameter, respectively. Delayed bleeding that required endoscopic hemostasis occurred in only one case, but no other adverse events occurred. The most important factor related to one-bite polypectomy was polyp size (≤3mm; OR: 5.58), followed by macroscopic type of polyps (non-Ha; OR: 1.95).

Conclusion: In this large-scale multi-center prospective study, 99.3% of all diminutive polyps were completely resected by using jumbo forces biopsy and magnified endoscopy with NBI. In addition, we were able to do one-bite polypectomy for more smaller polyps (≤3 mm). Jumbo forces biopsy appears to be adequate for resecting diminutive polyps if no residual tissue is visible by using magnified endoscopy with NBI.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0225 PERIOPERATIVE MANAGEMENT OF ORAL ANTICOAGULANTS WITHOUT HEPARIN BRIDGING THERAPY FOR PATIENTS UNDERGOING ENDOSCOPIC SURGERY: A PILOT STUDY


1Division Of Endoscopy, Hokkaido University Hospital, Sapporo/Japan
2Department Of Gastroenterology, Hokkaido National Hospital, Hakodate/Japan
3Department Of Gastroenterology And Hepatology, Hokkaido University Graduate School of Medicine, Sapporo/Japan
4Department Of Gastroenterology And Hepatology, Hokkaido University Graduate School of Medicine, Sapporo/Japan
5Division Of Endoscopy, Hokkaido University Hospital, Sapporo/Japan

Contact E-mail Address: onosho@med.hokudai.ac.jp

Introduction: Heparin bridging therapy (HBT) is recommended for patients administered anticoagulants who have a high thrombotic risk and who undergo a high bleeding-risk procedure such as endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR). However, HBT is actually related to a high frequency of delayed bleeding4-8. Aims & Methods: Our aim is to analyze bleeding and coagulation markers in the periprocedural periods of patients with or without HBT during the perioperative periods of ESD and EMR. Patients who underwent ESD or EMR and received warfarin or a direct oral anticoagulant (DOAC) during the period from January 2013 to March 2017 were analyzed. Generally, administration of warfarin was continued within the therapeutic range of the international normalized ratio (INR) during the periprocedural periods and DOACs were not administered on the day of the procedure. HBT was conducted only for patients who had a hypercoagulable condition. The rates of delayed bleeding in patients who received warfarin and patients who received DOACs were compared, and coagulation molecular markers including soluble fibrin (SF), thrombin-antithrombin complex (TAT), prothrombin fragment 1 + 2 (F1 + 2) and D-dimer (DD) were compared before and after the procedures in 13 patients.

Results: Among the patients who underwent ESD or EMR during the study period, 5 patients received warfarin and 49 received DOACs. Delayed bleeding occurred in 6 patients (11.8%) in the warfarin group and in 8 patients (16.3%) in the DOAC group, and there was no significant difference. Only one patient with continued administration of antiplatelet agents had delayed bleeding among the patients in whom administration of warfarin was continued within the therapeutic range (5.3%, 1/19). Six (15%) of the 40 patients in the DOAC group for whom the DOAC was not administered only on the day of the procedure had delayed bleeding, and 23.8% (5/21) of the patients who received HBT had delayed bleeding. No thrombotic events occurred from one month after the procedures. One patient in whom the DOAC was not administered on the day of the procedure became positive for TAT, F1 + 2 and DD after ESD and had a hypercoagulable condition.

Conclusion: For perioperative management of anticoagulants in patients undergoing ESD or EMR, continuous use of warfarin within the therapeutic range is recommended. However, DOACs should be carefully managed with attention to hemorrhagic risk and coagulable condition.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
endoscopy and type EC3a or EC3b in endoscopy. These lesions tend to invade the submucosal layer even when they are small. Therefore, it is important to consider deeply and examine the developmental morphology of colorectal neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0227 COLONOSCOPY INDICATION INFLUENCE ON THE COMPLIANCE OF QUALITY INDICATORS

C. Mangas1, E. Santana Rocamora1, A. Suárez González2, I. Portillo Villares3, A. Seoane3, M. Ponce4, P. Diez2, E. Quintero Carrión5, M. Herráiz6, M. Pellisé Urgaño7, Á. Fernández Arenas8, V. Hernández9, A. E. Pizarro Moreno10, R. Jover11

1Hospital General Universitario de Alicante, Alicante/Spain
2Servicio De Aparato Digestivo, Hospital Universitario Central de Asturias, Oviedo/Spain
3Hospital Universitario de Donostia, San Sebastián/Spain
4Hospital del Mar-Parc de Salut Mar Barcelona, Barcelona/Spain
5Hospital Universitari i Politecnic de la Fe, Valencia/Spain
6Gastroenterology, Hospital Universitario Rio Hortega, Valladolid/Spain
7Gastroenterology, Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain
8Clínica Universitaria de Navarra, Pamplona/Spain
9Gastroenterology, Hospital Clinic Barcelona, Barcelona/Spain
10Hospital Clínico Universitario de León Biscá, Zaragoza/ Spain
11Instituto de Investigación Biomédica, Xerencia de Gestión Integrada de Vigo, Vigo/Spain
12Gastroenterology, Hospital Virgen del Rocío, Sevilla/Spain
13Unidad De Gastroenterología, Hospital General Universitario, Alicante/Spain

Contact E-mail Address: cmangassanjuan@gmail.com

Introduction: It remains unknown if colorectal lesions detection rates as quality indicators of the colonoscopy, behave in the same way in relation to colonoscopy indication.

Aims & Methods: The aim of this study was to evaluate the adenoma detection rate (ADR), serrated polyt detection rate (SDR), advanced adenoma detection rate (AADR) and colorectal cancer detection rate (CRCDR) depending on the colonoscopy indication. A total of 6912 colonoscopies have been prospectively included in the QUALISCOPIA project, an observational, multicenter and prospective study, developed in 12 centers in Spain. The ADR, SDR, AADR and CRCDR have been calculated. These data were analysed according to the colonoscopy indication adjusted by sex, age, colic intubation, adequate cleansing (Boston scale score of 2–3 in all segments) and sedation use.

Results: The results can be seen in Table 1. In colonoscopies performed due to positive fecal immunochemical test (FIT+), the ADR was 54.0% (p < 0.001, aOR 3.0, 95%CI 2.6–3.4). In those performed because of post-polypectomy surveillance, 49.3% (p < 0.001, aOR 3.4, 95%CI 2.2–5.3), and, those due to direct screening, the ADR was 31.6% (p < 0.005, aOR 1.4, 95%CI 1.1–1.7) compared to 28% in patients with gastrointestinal symptoms. Regarding the serrated polyps, in procedures performed due to FIT+, the SDR was 1.9% (p = 0.005, aOR 0.9, 95%CI 0.3–2.5), 4.2% in surveillance colonoscopies (p = 0.001, aOR 3.8, 95%CI 2.3–5.3), and 3.3% in direct screening (p < 0.001, aOR 2.8, 95%CI 1.6–5.0), compared to 1.2% of patients with digestive symptoms. Moreover, the AADR in colonoscopies performed due to FIT+ was 36.8% (p < 0.001, aOR 3.9, 95%CI 3.3–4.6), compared to 23.1% in surveillance colonoscopies (p < 0.001, aOR 1.8, 95%CI 1.5–2.2), and 14.9% in direct screening (p = 0.023, aOR 1.3, 95%CI 1.1–1.8). However, the SDR was 12.8% in patients with digestive symptoms. Finally, the CRCDR was 5.8% in patients with gastrointestinal symptoms (p < 0.001, aOR 11.6, 95%CI 4.7–28.7), 4.8% in those with FIT+ (p < 0.001, aOR 13.4, 95%CI 5.4–33.2), and 1.8% in direct screening (p < 0.005, aOR 5.1, 95%CI 1.6–15.6), compared to 0.5% in post-polypectomy surveillance.

TABLE 1: DETECTION RATES BY INDICATION

<table>
<thead>
<tr>
<th>ADR</th>
<th>OR (95%CI)</th>
<th>p-value</th>
<th>aOR (95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT+</td>
<td>54.0 (92/1718)</td>
<td>3.0 (2.7–3.4)</td>
<td>&lt;0.001</td>
<td>3.0 (2.6–3.4)</td>
</tr>
<tr>
<td>Direct screening</td>
<td>31.6 (174/550)</td>
<td>1.2 (1.0–1.5)</td>
<td>0.005</td>
<td>1.4 (1.1–1.7)</td>
</tr>
<tr>
<td>SDR</td>
<td>28.0 (79/283)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Post-polypectomy surveillance</td>
<td>49.3 (629/1275)</td>
<td>2.5 (2.2–2.9)</td>
<td>&lt;0.001</td>
<td>2.2 (1.9–2.5)</td>
</tr>
<tr>
<td>FIT+</td>
<td>4.8 (83/1718)</td>
<td>10.7 (4.7–24.7)</td>
<td>&lt;0.001</td>
<td>13.4 (5.4–33.2)</td>
</tr>
<tr>
<td>Direct screening</td>
<td>3.9 (14.0–58)</td>
<td>0.009</td>
<td>5.1 (1.6–15.6)</td>
<td>0.005</td>
</tr>
<tr>
<td>Post-polypectomy surveillance</td>
<td>0.5 (6/1275)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

p-value: significance level; aOR: adjusted Odds Ratio

Conclusion: The indication of colonoscopy has a very important influence on the different quality indicators such as detection rates of lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0228 THERAPEUTIC ERCP USING A SHORT SINGLE-BALLOON CHOLANGIOSCOPY IN PATIENTS WITH SURGICALLY ALTERED ANATOMY

K. Masu, K. Ito, T. Ohira, S. Koshita, Y. Kanno, T. Ogawa

Gastroenterology, Sendai City Medical Center, Sendai, Japan

Contact E-mail Address: k-masu@openhp.or.jp

Introduction: Recently, we have performed therapeutic ERCP using a newly developed short single-balloon enteroscope (sSBE) (working length of 152 cm, working channel of 3.2 mm) in patients with surgically altered anatomy.

Aims & Methods: We aimed to evaluate the usefulness and safety of sSBE for therapeutic ERCP in patients with surgically altered anatomy. We analyzed the data from patients with surgically altered anatomy who underwent therapeutic ERCP using a sSBE between August 2011 and February 2017 who were included in this study.

Patient anatomy consisted of Roux-en-Y anastomosis (R-Y) (n = 82), hepatocaco- lysticostomies (HC) (n = 11), subtotal stomach-preserving pancreaticoduodenectomy (SPPD) (n = 11). The indications for ERCP were choledocholithiasis (88: R-Y cases), malignant bile ducts (20: R-Y 14, HC 7, SSPD 4), intraductal stones (9: HC 7, SSPD 2), and anastomotic stenosis (7: SSPD 5, HC 2).

The success rate of reaching the target site was 91% (95/104), and the overall technical success rate was 79% (80/104). Biliary interventions included 64 stone extraction (R-Y 58, HC 5, SSPD 1), and 12 metallic biliary stent placement (R-Y 7, HC 1, SSPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HC 2, SSPD 1) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SPPD 3, R-Y 2, HC 1).

The adverse event rate was 10% (4: cholangitis 4, mild pancreatitis 3, perfora- tion 2, aspiration pneumonitis 1). The two perforation cases required urgent operation but remaining eight cases were managed conservatively.

Conclusion: Therapeutic ERCP using a sSBE is safe in patients with surgically altered anatomy and considered to be safe and effective.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0229 USEFULNESS OF SPYGLASS PERORAL CHOLANGIOSCOPY FOR THE DIAGNOSIS AND TREATMENT OF BILE-DUCT DISORDERS: EXPERIENCE FROM A LARGE-VOLUME CENTER

X. Tang, D. Zhang, C. Xu, X. Zhang

Department Of Gastroenterology, Hangzhou First People’s Hospital, Nanjing Medical University, Hangzhou, China

Contact E-mail Address: solitude834@hotmail.com

Introduction: SpyGlass single-operator peroral cholangioscopy (SOC) has been designed to overcome some limitations of conventional cholangioscopy, and demonstrated improved diagnostic and therapeutic abilities of complex pancreato- ductal obstructions.

Aims & Methods: To assess the clinical efficacy and safety of the SpyGlass system for diagnosis and treatment of bile-duct disorders in a large-volume center. All patients undergoing SOC in our department between January 2013 and May 2016 were retrospectively identified from a prospectively collected database. The baseline characteristics, including age, gender, presenting symptoms, indication and others were recorded. Procedure-related parameters of SOC for detecting malignant lesions and the stone clearance rate were calculated.

Results: During the study period, a total of 68 patients underwent 78 SOC procedures: 26 (38.2%) with indeterminate strictures, 7 (10.3%) with indetermi- nate filling defects, 31 (45.6%) with difficult bile stones, and 4 (5.9%) with cystic lesions. SpyGlass was technically successful in 63 of 68 patients (92.6%). The mean SpyGlass procedure time was 52 ± 12 mm. In patients with indeterminate biliary strictures, 6 cases of definite diagnosis (stones, varices) was made by SOC evaluation. Twenty patients underwent SOC-directed biopsy, and samples were adequate for histologic diagnosis in 17 patients (85%). The preliminary accu- racy of SpyGlass-directed biopsy to diagnose malignancy were 76%. For the patients with biliary stone, SpyGlass-guided holmium laser lithotripsy or electro- hydraulic lithotripsy succeeded in 15 of 15 patients (100%). There were 6 procedure-related adverse events occurred (8.8%), and resolved uneventfully.
Conclusion: SpyGlass cholangioscopy system can be safe and useful for definite diagnosis with a high accuracy in patients with indeterminate biliary lesions, and successfully guided stone therapy. Further prospective multicenter clinical trials of the system are warranted in the future.

P0230 DIAGNOSTIC AND THERAPEUTIC ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN INFANT AND CHILDREN: A LARGE RETROSPECTIVE STUDY

T. Xang, D. Zhang, C. Xu, X. Zhang
Department Of Gastroenterology, Hangzhou First People’s Hospital, Nanjing Medical University, Hangzhou/China

Contact E-mail Address: solitude5834@hotmail.com

Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly being used in the diagnosis and management of biliary and pancreatic disorders in pediatric patients.

Aims & Methods: To evaluate the indications, success rate, diagnostic and therapeutic yields, and complications of ERCP performed in Chinese children. A retrospective study was conducted in an academic, tertiary care, medical center, in which all children undergoing ERCP between 2005 to 2016 were identified from endoscopy databases. Data on demographics, indications, ERCP findings, ERCP interventions performed and complications were collected.

Results: A total of 288 children (mean age 9.3 years, range 1 month to 18 years) underwent 312 ERCP procedures. General anesthesia and sedation were performed in 48% and 52% of procedures, respectively. Indications for ERCP were common biliary obstruction (n = 153, 54.2%), recurrent or chronic pancreatitis (n = 64, 22.2%) and others. ERCP was successfully performed in 267 of 288 cases (92.7%). The most common ERCP findings was choledocholithiasis (n = 146, 50.7%). A therapeutic intervention was performed in 70.8% patients (n = 204), including sphincterotomy (n = 97), stone extraction (n = 55), and stent insertion (n = 52). Complications occurred for only 13 patients (4.5%), including 12 cases of post-ERCP pancreatitis and 1 case of bleeding. No severe pancreatitis, or perforation was noted.

Conclusion: Diagnostic and therapeutic ERCP is effective and safe in the children population, with the high rates of technical success and low rates of complication.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0231 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH SURGICALLY ALTERED GASTROINTESTINAL ANATOMY: 11 YEARS’ EXPERIENCE AT A LARGE CENTER IN CHINA

T. Xang, D. Zhang, C. Xu, X. Zhang
Department Of Gastroenterology, Hangzhou First People’s Hospital, Nanjing Medical University, Hangzhou/China

Contact E-mail Address: solitude5834@hotmail.com

Introduction: It is technically challenging to perform endoscopic retrograde cholangiopancreatography (ERCP) in patients with surgically altered gastrointestinal anatomy.

Aims & Methods: The aims of this study were to investigate the yield, efficacy and safety of ERCP in surgically altered anatomy patients at a single tertiary-care center with a high volume of endoscopy. All patients with altered surgical anatomy were compared with high accuracy in our center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedure-related details and adverse events was recorded and analyzed.

Results: A total of 304 procedures were performed in 236 patients, including 108 cases (45.8%) with Billroth II gastrectomy, 45 cases (19.1%) with Billroth I gastrectomy, 52 cases (22.0%) with hepaticoduodenostomy, 18 cases (7.6%) with esophagogastrostomy and 13 cases (5.5%) with Roux-en-Y reconstruction. The most common indication was cholelithiasis (58.1%, 137/236). The overall success rate was 88.2% (204/236). Therapeutic interventions were performed in 194 patients successfully, including stone extraction (n = 146), sphincterotomy (n = 44), stent placement (n = 57), papillary balloon dilatation (n = 27) and mechanical lithotripsy (n = 23). The adverse event rate was 7.2% (17/236). Mild pancreatitis occurred in 3% (7/236) of cases, perforation occurred in 2.5% (6/236) of cases, and asymptomatic hyperamylasemia occurred in 1.7% (4/236) of cases.

Conclusion: ERCP can be performed in surgically altered anatomy patients with a high success rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0232 IMPACT OF HIGH DEFINITION, NEAR FOCUS-IMAGING AND SYNDROME RECURRENCE TOOL (SERT) AFTER COLORECTAL ENDOSCOPIC MUCOSAL RESECTION: A PROPENSITY SCORE ANALYSIS

1Department of Gastroenterology and Hepatology, Mayo Clinic, Jacksonville, Florida/United States of America/FL
2Biostatistics, Mayo Clinic, Rochester/United States of America/MN

Contact E-mail Address: danielaguerrerotorres@gmail.com

Introduction: Risk factors for colorectal adenoma recurrence after Endoscopic Mucosal Resection (EMR) such as size ≥20mm, high grade dysplasia, use of argon plasma coagulation (APC) and intraprocedural bleeding (IPB), have been well documented in literature. However, it is unknown if the latest generation dual-focus (DF) colonoscopes ability to visualize subtle residual neoplasia, has improved the rate of complete EMR.

Aims & Methods: We aimed to compare the efficacy of the newer 190 colonoscopes versus standard 180 colonoscopes for complete resection of lateral spreading lesions (LSS) ≥20mm. A secondary aim was to identify risk factors for recurrence and the applicability of the Sydney EMR recurrence tool (SERT score) in our cohort.

This was a single-center retrospective study of patients who underwent EMR with 180 or 190 colonoscope series from 2010 to 2016. Lesions ≥20mm resected in a piecemeal fashion and patients with a surveillance colonoscopy after index EMR were included. A propensity score approach with inverse probability weighting (IPW) was used to control potential confounders affecting adenoma recurrence. Each lesion was graded according to SERT score and associations with recurrence were analyzed.

Results: 291 patients met inclusion criteria for the study. The rate of adenoma recurrence at the EMR site was 23.3% for the 180 colonoscope cases and 25.2% for the 190 colonoscope cases. Odds ratio (OR) for recurrence with 190 series was 1.06 (p = 0.85). Adenoma size (p = 0.002) and concomitant need for supplemental APC (p = 0.001) were risk factors for recurrence. SERT > 0 lesions had a higher risk of recurrence during follow-up (OR 1.71; 95% CI 1.00–2.92; p = 0.048) and a higher cumulative incidence for recurrence. Conversely, SERT = 0 lesions reached a plateau for recurrence after 12 and 18 months in Kaplan Meier curves. Odds ratio estimates for 190 colonoscope effect on adenoma recurrence at different stages of adjustment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0233 INCIDENCE AND RISK FACTORS FOR PANCREATITIS IN EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A PROSPECTIVE MULTICENTER STUDY


Introduction: The aims of this study were to investigate the yield, efficacy and safety of ERCP in surgically altered anatomy patients at a single tertiary-care center with a high volume of endoscopy. All patients with altered surgical anatomy were compared with high accuracy in our center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedure-related details and adverse events was recorded and analyzed.

Results: A total of 304 procedures were performed in 236 patients, including 108 cases (45.8%) with Billroth II gastrectomy, 45 cases (19.1%) with Billroth I gastrectomy, 52 cases (22.0%) with hepaticoduodenostomy, 18 cases (7.6%) with esophagogastrostomy and 13 cases (5.5%) with Roux-en-Y reconstruction. The most common indication was cholelithiasis (58.1%, 137/236). The overall success rate was 88.2% (204/236). Therapeutic interventions were performed in 194 patients successfully, including stone extraction (n = 146), sphincterotomy (n = 44), stent placement (n = 57), papillary balloon dilatation (n = 27) and mechanical lithotripsy (n = 23). The adverse event rate was 7.2% (17/236). Mild pancreatitis occurred in 3% (7/236) of cases, perforation occurred in 2.5% (6/236) of cases, and asymptomatic hyperamylasemia occurred in 1.7% (4/236) of cases.

Conclusion: ERCP can be performed in surgically altered anatomy patients with a high success rate.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Endoscopic necrosectomy (EN) in walled-off necrosis (WON) is a labor intensive, high-risk, non-standardized technique that is associated with significant morbidity and mortality. This observational study included 45 consecutive patients with WON who had undergone EN versus an algorithmic approach that is tailored to the extent and location of the WON: While WON extending to the flanks and more proximate (P < 0.001) increased the risk of PEP in emergency ERCP. Conclusion: The incidence of PEP was lower in emergency ERCP than in elective ERCP. Multivariate analysis showed that contrast injection into the PD (OR: 4.51, 95%CI: 1.64–12.40, P = 0.003) increased the risk of PEP in emergency ERCP. Multivariate analysis showed that contrast injection into the PD (OR: 4.51, 95%CI: 1.64–12.40, P = 0.0035) increased the risk of PEP in emergency ERCP. Disclosures: All authors have declared no conflicts of interest.

P0234 WALLED-OFF NECROSIS (WON): OUTCOMES OF AN ALGORITHMIC APPROACH TO NECROSECTOMY

J.Y. Bang1, U. Navaneethan1, M. Hasan, R. Hawes, S. Varadarajulu
Center For Interventional Endoscopy, Florida Hospital, Orlando/United States of America/FL

Contact E-mail Address: jybang213@gmail.com

Introduction: Endoscopic necrosectomy (EN) in walled-off necrosis (WON) is a labor intensive, high-risk, non-standardized technique that is associated with significant morbidity and mortality. Aims & Methods: To evaluate the safety and efficacy of endoscopic retrograde cholangiopancreatography (ERCP) for the treatment of pancreas divisum (PD) associated with recurrent acute pancreatitis (RAP) in children. We retrospectively analyzed patients of PD associated with RAP who were younger than 18 years old from January 2011 to December 2015 in our center. All the patients were diagnosed and treated with ERCP. Patients of complete PD associated with RAP underwent endoscopic sphincterotomy (ESCS). Patients of incomplete PD underwent biliary and pancreatic duct stenting (Bi-E-ESCS). ERCP-related data, complications and other relevant data were collected. The median time follow-up was 3 months (from 2 to 6 months). Results: A total of 227 pediatric ERCPs were performed for 117 pediatric patients during this period. Of which 24 were PD cases. The endoscopic detection rate of PD was 20.5%. Of the 24 patients, 12 were PD associated with RAP, among which 10 were complete PD and 2 were incomplete PD. A total of 21 therapeutic ERCPs were performed for these cases. All procedures were successful with 100% (21/21) of cannulation rate of the minor papilla. The mean interval of changing pancreatic dorsal duct stent is 3 months (from 2 to 6 months). ERCP-related complications were mild with a rate of 9.5% (2/21). One was acute mild pancreatitis and the other was hyperamylasemia, both of which were managed conservatively. During follow up from 15 to 74 months (mean 33.9 months), all patients had pain relief with a relief rate of 100%, of which 10 were asymptomatic with no longer onset of acute pancreatitis. During follow-up, the presence of more dilatation of the minor ducts in all children and presented normal in weight, growth and intelligence.

Conclusion: The techniques of ESCS and Bi-E-ESCS under ERCP are safe and effective methods to manage PD associated with RAP in pediatric patients. It seems very vital for such children to undergo endoscopic interventions as early as possible in order to avoid developing CP.

Disclosures: All authors have declared no conflicts of interest.

P0235 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN THE MANAGEMENT OF PANCREAS DIVISUM ASSOCIATED WITH RECURRENT ACUTE PANCREATITIS IN CHILDREN: EXPERIENCE FROM A SINGLE CENTER IN CHINA

G. Cui, J. Yang, X. Tang, J. Yang, X. Zhang
Gastroenterology And Hepatology, Hangzhou First People’s Hospital, Hangzhou, China

Contact E-mail Address: zxs837@163.com

Introduction: Pancreas divisum (PD) is the most common congenital anomaly of the pancreas. Most PD patients are asymptomatic, but a few may present symptoms in the form of recurrent acute pancreatitis (RAP), chronic pancreatitis (CP) or pancreatic-type pain. It is imperative to treat PD associated with RAP as early as possible to prevent it from developing CP. Unfortunately, to date, most PD-related studies have been concentrated on adults. Researches of PD in children are rare.

Aims & Methods: To determine the predictive risk factors for PEP in emergency ERCP using univariate and multivariate analyses. Results: A total of 1677 cases were enrolled in this study. Study 1 > PEP developed in 20 of 429 cases (4.7%) from the emergency group and in 101 of 1248 cases (8.1%) from the elective group. The incidence of PEP was significantly lower in the emergency group than in the elective group (odds ratio [OR]: 0.56, 95% confidence interval [CI]: 0.32–0.92, P = 0.017). Endoscopic sphincterotomy, stone removal, papillary balloon dilation, and intraduodenal ultrasound sono-graphy were performed significantly more often in the elective group than in the emergency group (P < 0.001). Placement of a biliary stent was significantly more common in the emergency group than in the elective group. In addition, the procedure time was significantly longer (P < 0.001) and the number of endoscopists who had more than five years of experience was significantly higher (P = 0.04) in the elective group than in the emergency group. < Study 2 > PD cases with no native papilla (n = 183) were excluded from the analysis of risk factors for PEP because no PEP was observed in these cases. Only cases with native papilla (n = 248) were analyzed. Univariate analysis showed that contrast injection into the PD (OR: 4.20, 95%CI: 1.64–10.80, P = 0.0028), more than four contractions (OR: 2.83, 95%CI: 1.12–6.98, P = 0.028) and placement of a biliary stent (OR: 0.028, 95%CI: 0.11–0.88, P = 0.028) decreased the risk of PEP in emergency ERCP. Conclusion: The incidence of PEP was lower in emergency ERCP than in elective ERCP, and it was largely unaffected by the endoscopist’s experience and the procedure time. This may be associated with a tendency to avoid invasive proce-dures, and it is consistent with the idea that only placement of a biliary stent contributes to a decrease in the development of PEP. Close attention should be paid for contrast injection into the PD, particularly when attempt of cannulation for native papilla are required.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0236 ENDOSCOPIC BILIARY SPHINCTEROTOMY IN MALIGNANT BILIARY OBSTRUCTION: IS IT INDICATED IN CASE OF STENT PLACEMENT? A META-ANALYSIS

B. Mangiavillano1, A. Montale1, L. Fuccio2
1Gastrointestinal Endoscopy Unit, Humanitas - Mater Domini, Castellanza (VA), Italy
2Gastrointestinal Endoscopy Unit, Humanitas - Mater Domini, Castellanza (VA), Italy

Disclosure of Interest: S. Varadarajulu: Consultant for Boston Scientific Corporation and Olympus America Inc.

All other authors have declared no conflicts of interest.
The overall rate of biliary stent insertion was not significantly different: 384/392 excluded leaving 6 prospective studies (total of 711 patients).

Results: 14 papers were assessed via full text for eligibility, 8 articles were excluded leaving 6 prospective studies (total of 711 patients). Technical success: The overall rate of biliary stent insertion was not significantly different: 384/392 patients (98%) in the no-EBS group versus 331/339 (97.6%) in the EBS arm (OR: 1.05; 95% CI, 0.42–2.63). Early complications: The overall early AEs developed in 43/392 (11%) of patients without EBS versus 68/339 (20.1%) of patients who received EBS, with a significantly different (OR: 0.55; 95%CI: 0.33–0.92). Post-ERCP pancreatitis (PEP) was no significantly different in the two groups: 24/392 (6.1%) in no-EBS group versus 24/392 (6.1%) in EBS (OR: 0.65; 95%CI: 0.25–1.7). The bleeding was significantly different in patients without EBS: 0/351 of patients in no-EBS group versus 15/259 (5%) in the EBS group (OR: 0.05; 95% CI, 0.01–0.29). Early mortality rate was 0% in both groups. Late complications: No significantly difference occurred in the overall late adverse events in the two groups: 50/251 patients (19.9%) in no-EBS group vs 38/210 subjects (18.9%) in the EBS group (OR: 0.93; 95% CI: 0.56–1.53). No significantly differences in late cholangitis (11.6% patients in no-EBS vs 11.4% in EBS) and late AEs (p = 0.42). No significantly differences in stent migration (4% in no-EBS group vs 5.5% - OR: 0.81; 95% CI: 0.29–2.25). No significantly differences in late cholangitis (2.6% in no EBS vs 0% in EBS group - OR: 1.83; 95% CI: 0.17–19.85). Long-term mortality was not significantly different (2.5% in no-EBS group and 2.9% in the EBS arm - OR: 1.18; 95% CI: 0.22–6.29).

Conclusion: Our meta-analysis showed no significantly differences in technical success and in PEP. In consideration of the significantly increase of the overall AEs in the EBS group, and in particularly of the bleeding and cholangitis, the EBS seems not be recommended in patients not suitable to surgery undergone biliary stenting.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO237 ENDOSCOPIC PANCREATIC SPHINCTEROTOMY COMBINED WITH PANCREATIC DUCT STENT CAN EFFECTIVELY PREVENT RECURRENCE OF ACUTE RECURRENT PANCREATITIS CAUSED BY BILIARY MICROLITHIASIS — A SINGLE-CENTER STUDY FROM BEIJING, CHINA

Y. Huang, X. Yan, W. Liu, Y. Zhang, W. Yao, K. Li Gastroenterology And Hepatology, Peking University Third Hospital, Beijing/China

Contact E-mail Address: 13911765322@163.com

Introduction: Acute recurrent pancreatitis (ARP) refers to a clinical entity characterized by episodes of acute pancreatitis which occurs on more than one occasion. Biliary microlithiasis plays an important role in the etiology of ARP. Bile sludge may induce acute pancreatitis as a consequence of transient papillary edema that can obstruct the pancreatic juice flow. The established treatments of ARP includes with ARP. In this case, we analyzed the efficacy of endoscopic pancreatic sphincterotomy (EPS) and empirical cholecystectomy. However, ESP may increase the morbidity of biliary reflux or cholecystitis recurrence. We hypothesized that endoscopic pancreatic sphincterotomy (EPS) can save the function of biliary sphincter and prevent the recurrence of ARP.

Aims & Methods: The aim of the study is to evaluate the effectiveness of EPS combined pancreatic duct stent for preventing ARP caused by biliary microlithiasis. 67 patients with ARP from 2005 to 2016 were diagnosed as biliary microlithiasis by endoscopic retrograde cholangiopancreatography (ERCP), bile microscopy or intraductal ultrasonography (IDUS). The whole was divided into two groups according to endoscopic therapy by EST or EPS with pancreatic stent. Rate of pancreatitis recurrence, early complication of post ERCP pancreatitis (PEP), and late complication (3 months after the treatment) which included cholangitis, cholecystitis, or cholecystolithiasis were compared between the two groups.

Results: (1) 38 and 29 patients were included in EST and EPS group, respectively. The mean age and follow-up duration of EST and EPS were 48.4 ± 15.1yrs, 45.7 ± 36.5months and 45.6 ± 15.2yrs, 24.1 ± 36.3months, respectively. (vary from 2months to 115months). (2) The mean episodes of ARP in EST and EPS group before endoscopic therapy were 3.9 ± 3.3 times and 7.9 ± 11.8 times. (3) Four patients in EST group and 6 patients in EPS group suffered PEP after the endoscopic therapy (P = 0.418). (4) 15 patients in EST group and 3 in EPS group suffered recurrent pancreatitis. The efficiency in EST group and EPS group is 68.4% and 89.6% respectively (P = 0.039). (5) The incidence of late complications are 18.4% in EST group and 10.3% in EPS group (P = 0.567).

Conclusion: EPS combined with pancreatic stent is a promising strategy to prevent recurrence of ARP due to biliary microlithiasis.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO238 OUTCOME OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH PERIAMPULLARY DIVERTICULUM

M.A. Baig1, M. Salih1, N.H. Shah1, M. Fatima2

1Gastroenterology, Shifa international hospital, islamabad/Pakistan
2shifa college of medicine, islamabad/Pakistan

Contact E-mail Address: mhammadasifbaig81@gmail.com

Introduction: Periampullary diverticulum (PAD) is frequently asymptomatic, usually encountered in patients undergoing endoscopic retrograde cholangiopancreatography (ERCP).

Aims & Methods: The aim of this study was to investigate the association of PAD with bile duct stones, biliary cannulation success and different types of PAD. A total of 1164 ERCP procedures were performed in 833 patients in a single center by single operator from January 2012 to October 2016 after excluding patients with bile duct stent, biliary cannulation failure and different types of PAD. Patients with PAD had mean age 59.10 years (range 18 to 84 years) 17 were < 50yrs while 32 > 50yrs, compared to controls mean age 52.74 yrs (range 12 to 95 yeras) 230 were < 50yrs while remaining more than 50yrs. P-value (< 0.05) compared with controls.

Results: PAD identified in 49 (4.2%) cases, PAD type (1 the diverticulum) was found in 7 pts (14.3%), Type II (at (edge) brim) in 34 pts (69.4%), Type III (adjacent near diverticulum) (16.3%). Patients with PAD had mean age 59.10 years (range 18 to 84 years) 17 were < 50yrs while 32 > 50yrs, compared to controls mean age 52.74 yrs (range 12 to 95 yrs) 230 were < 50yrs while remaining more than 50yrs. P-value (< 0.05). PAD predominantly occurred in > 50yrs, compared to controls.

Patients with PAD had increased prevalence of gallstone/biliary stone disease compared with controls, 71.4%vs 33.1% (p < 0.01) compared with controls. Easy cannulation of CBD without difficulty (PRECUIT/Pancreatic cannulation/stenting) was more frequent in patients controls (82.3%) compared to PAD group (75.5%) p < 0.05. However, CBD clearance was same in both groups >90% (p value not significant) Incidence of complications in PAD group bleeding (2%), Pancreatitis (2%) and one small retroduodenal perforation (2%) all managed conservatively. In without PAD group bleeding 0.6%, pancreatitis 0.7% and no perforation.

Conclusion: PAD is seen with advanced age, predominantly in female and frequently associated with bile duct stones. In this case control study PAD did not appear to be a barrier for successful ERCP with acceptable complication rates.

Disclosure of Interest: All authors have declared no conflicts of interest.

BASELINE CHARACTERISTICS AND COMPARISON OF FINDINGS

<table>
<thead>
<tr>
<th>Age(mean ± SD)</th>
<th>Sex (male/female)</th>
<th>Patients with bile duct stones</th>
<th>CBD cannulation (easy/difficult)</th>
<th>Complications/bleeding</th>
<th>Patients with pancreatitis/perforation</th>
<th>p-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.10 ± 15.16</td>
<td>21/28</td>
<td>35 (71.4%)</td>
<td>35/14 (75.5%)</td>
<td>2% (2/25)</td>
<td>2/35 (6.1%)</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

References
Efficacy and Safety of Endobiliary Radiofrequency Ablation for the Eradication of Residual Neoplasia After Endoscopic Ampullectomy. Results of a Multicenter Prospective Study

M. Camus1, B. Napoléon2, A. Vienne3, M. Le Rhun4, S. Leblanc1, M. Barret5, N. Kaddour5, F. Robin6, S. Chaussade7, F. Prat8

1Gastroenterology, University Paris 5 APHP Hôpital Cochin, Paris, France
2Gastroenterology, Hôpital Privé Jean Mermoz, Lyon, France
3Gastroenterology And Digestive Endoscopy, Georges-Pompidou European Hospital, Paris, France
4Institut des Maladies de l’Appareil Digestif, CHU Nantes, Nantes, France
5Gastroenterology, Cochin Hospital, Paris, France
6ERC/CIC Paris Descartes Necker-Cochin, Paris, France
7ARC SEFD, Hépato-Gastroentérologie, HCL, Hôpital Edouard Herriot, Lyon, France
8Service De Gastro-entérologie, CHU Cochin Dept. de Gastroenterologie, Paris, France

Contact E-mail Address: marine.camus@gmail.com

Introduction: Dysplasia may persist at the termination of the common bile duct (CBD) after endoscopic ampullectomy. Radiofrequency ablation (RFA) could be an alternative intervention to reduce the risk of invasive cancer with less morbidity.

Aims & Methods: The aim of the study was to evaluate the efficacy and morbidity of endo-biliary RF for the treatment of residual endo-biliary dysplastic lesions after endoscopic ampullectomy. A prospective open-label multicenter study

References

P0239 COMPARISON OF DIGITAL VS FIBEROPTIC CHOLANGIOSCOPY IN PATIENTS REQUIRING EVALUATION OF BILE DUCT STONES


Evaluation criteria included comorbidities, oral administration of anticoagulants, cause of cholangitis, ERCP procedure (examination time, endoscopic biliobiliary tract obstruction (EST)), post-ERCP pneumonia, death within 30 days after ERCP procedure, anesthesia-related complications (blood pressure decrease, pulse reduction, respiratory depression).

Results: We examined 69 males (92.3%) and 6 females (7.7%) Women underwent endoscopy for a larger proportion in the super-elderly group (71% vs 40%). The average age was 92.5 years (range, 90–97) in the super-elderly group and 77.9 years (range, 50–89) in the non-super-elderly group. The super-elderly group comprised 54 ERCP procedures (moderate, 32; severe, 22) against 124 ERCP procedures (moderate, 104; severe, 20) in non-super-elderly group, and similar results observed in the super-elderly group were statistically significant (p < 0.001). Regarding comorbidities, chronic heart and renal failure were statistically dominant in the super-elderly group. However, no difference was seen in the incidence of other diseases receiving anticoagulant medication between the two groups. The causes of acute cholangitis were common in both groups with common bile duct stone (46% vs 46%), followed by malignant obstruction (9% vs 12%) and benign stenosis (0% vs 5%), but no difference was found. Regarding the ERCP procedure, the examination time was longer in the super-elderly group (35.7 ± 28.1 min vs 29.2 ± 24.0 min, p = 0.044), but there was no difference in the procedure success rate (93% vs 97%, p = 0.249) and the presence of peripapillary diverticula. The patients were sedated using midazolam (MDZ) plus pentazocine (PTZ). The amount of anesthetic used was less in the super-elderly group (MDZ: 2.2 ± 3.3 mg, p < 0.001, PTZ: 3.1 ± 5.4 mg, p = 0.005).

Regarding (i) ERCP-related and (ii) anesthesia-related complications, these were higher in the super-elderly group ([i] 15% vs 9%, p = 0.293, (ii) 17% vs 7%, p = 0.086). The incidence of anesthetic complication improved in the super-elderly group, and no intravascular or surgical treatment was required.

Conclusion: Acute cholangitis in super-elderly patients was more likely to become severe and the complications were higher than that in non-super-elderly patients. When performing an emergency procedure in super-elderly patients, we should particularly pay attention to developing complications in patients with moderate or higher acute cholangitis, according to TG13.

Disclosure of Interest: All authors have declared no conflicts of interest.
included 20 patients with low-grade dysplasia (DBG) or high grade (DHG) lesions. ERCP was performed by a double-balloon enteroscopy, in relation to a residual adenomatous bud after endoscopic ampullectomy for ampullary adenoma. The lesions should extend to a maximum length of 20 mm in the CBD. Endoscopic retrograde cholangio-pancreatectomy (ERCP) was performed with the Habib™ EndoHPB probe (EMcision, UK) (effect 8, power 10Watts, 30 s). Biliary: pancreatic stent were placed at the end of the procedure. The primary endpoint was the rate of residual neoplasia (eg, DBG, DHG or invasive carcinoma) at 1 year after treatment. Secondary endpoints included neoplasia at 6 months after treatment; 2) rate of surgery at 12 months; 3) adverse events.

Results: The mean age (±SD) was 67 years (±11), with 12 men and 8 women. RFA was performed on average (±SD) 1.9 years (±3.5) after ampullectomy. The mean resected adenoma size (±SD) was 24.9 mm (±10.2), and 7 patients had adjacent duodenal mucosectomy at the time of ampullectomy. The histology of the resected ampullary adenoma was DBG for 7 patients, DHG for 12 patients, and in situ carcinoma for 1 patient. Lateral margins were R0 in 20 patients (95%). CBD recurrence was diagnosed predominantly on ERCP and/or endoscopic ultrasonography surveillance procedures with an estimated mean infiltration height (±SD) of 11.2 mm (±4.5). The passage of the RFA probe was judged to be easy in 100% of cases with visibility of the radiopaque markers judged satisfactory to very satisfactory in 80% of the cases. All patients included had RFA without any technical problems. All patients had bilary stent (4 SEMS 10 mm, 16 plastic stents 10 French) implanted following RFA and 5 (±25%) had a pancreatic stent. The residual rate of DBG, DHG, invasive carcinoma at 6 months and at 12 months after treatment were 25% (5/20, DBG, carcinoma) and 45% (9/20, DBG, carcinoma) respectively. The adverse events were as follows: 4 benign pancreatitis all medically treated, 2 patients had angiography requiring bilary stent replacement. 1 patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoescopy and biological tests). At M12, one patient presented with a bilary stricture resolved by dilatation and a calibration bilary stent.

Conclusion: Endoscopic RFA performed on residual endo-biliary dysplastic buds after ampullectomy is an alternative to surgery, with a rate 55% dysplasia eradication at 12 months after a single RFA session. Regular monitoring of these patients is still necessary considering recurrence rate. Multiple RFA sessions may be proposed in case of incomplete results.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0242 EXPERT VALIDATION OF A NOVEL MECHANICAL CUTTING PAPILLA

S. E. Van Der Wiel, A. Koch, M. J. Bruno
1Gastroenterology And Hepatology, Erasmus University Medical Center, Rotterdam/Netherlands
2Erasmus MC Rotterdam Gastroenterology and Hepatology, Rotterdam /Netherlands

Contact E-mail Address: s.vanderwiel@erasmusmc.nl

Introduction: Simulation-based training has become an important pillar in competency building and learning in medicine, especially in training novice endoscopists. Several simulators have been validated and implemented in training curricula pertaining gastrointestinal endoscopy. Surprisingly, limited data are available on simulators on ERCP training, despite the fact that ERCP seems to be an ideal candidate for simulation-based training due to its technical complexity. The available simulators are difficult to implement in training settings due to the lack of realism or use of live animals or ex-vivo components. Recently, the Boskoski™ cutting papilla available simulators are difficult to implement in training settings due to the lack of an ideal platform for simulator-based training due to its technical complexity. The purpose of this study was to evaluate the didactic value and added competence-based learning in medicine, especially in training novice endoscopists.

Aims & Methods: The aim of our study was to determine the expert validity of this cutting papilla and its didactic value for training sphincterotomy, as judged by experts. Expert participants with more than 2500 ERCPs lifetime were invited to perform the simulation and fill out a questionnaire on the realism of the sphincterotomy procedure and its didactic value.

Results: A total of 40 ERCP experts were included. All experts were men, originating from 16 different countries with a mean age of 49.6 years (range 37–65). Twenty-seven experts were gastroenterologists (92.5%), 3 participants were surgeons (7.5%). The mean number of years of endoscopic experience was 20.9 (range 10–40). Experts' opinion on realism of performing a sphincterotomy was evaluated on a four-point scale. The potential as a training tool of the cutting papilla in training novices was rated 3.93 on a four-point scale, and there was a high agreement among the experts to include the papilla in the training of novices (3.93 on a four-point scale).

Disclosure of Interest: M.J. Bruno: We have received a unrestricted research grant from Cook Medical, Limerick, Ireland. All other authors have declared no conflicts of interest.

P0243 MEDICO-LEGAL CLAIMS IN GASTROINTESTINAL ENDOSCOPY: DOES PROCEDURE RISK RELATE TO SUCCESSFUL OUTCOMES?

S. Budihal, J. F Maybery
Dignostics Diseases Centre, University Hospitals Leicester, GB/United Kingdom

Contact E-mail Address: shivbudihal@yahoo.co.uk

Introduction: Complications in endoscopy can lead to adverse clinical events. The likelihood of developing a complication depends on the degree of risk associated with a certain procedure. It is generally noted that riskier the procedure larger is the chance for a complication and higher the likelihood for medico legal issues. This is relevant as in the event of the risk materialising, patients make seek legal redress. The aim of this study was to investigate the degree of success of medico legal claims based on the nature of the endoscopic procedure and the outcome of the claims.

Aims & Methods: The National Health Service Litigation Authority (NHSLA) database in U.K was searched using a Freedom of Information request (F2403) in 2010/11 and 2014/15. The term "Gastroscopy", "Sigmoidoscopy", "Colonolesscopy", "PEG" and "ERCP" were used to search the database. They were then analysed for procedure type, characteristics and outcomes. StatsDirect statistical software was used for statistical analysis.

OUTCOME OF ENDOSCOPY CLAIMS

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Open</th>
<th>Successful</th>
<th>Unsuccessful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroscopy</td>
<td>10</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>PEG</td>
<td>12</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>Sigmoidoscopy</td>
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</tr>
<tr>
<td>ERCP</td>
<td>22</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>50</td>
<td>40</td>
<td>28</td>
</tr>
</tbody>
</table>

Results: A total of 291 claims were notified to the NHSLA during this period. 107 (36.7%) of claims still remain open. Analysing outcomes by procedures reveals a success rate of 44%, 44%, 37%, 36% and 34% (rounded up to the nearest whole figure) for Gastroscopy, PEG, Sigmoidoscopy, ERCP and Colonoscopy claims respectively. There is no statistical difference between the proportions comparing Gastroscopy and Colonoscopy (StatsDirect software used).

Conclusion: A significant number of claims remain open leading to concern and worry among endoscopists. The impact on practitioners after a successful claim is unknown and merits further investigation. Procedures considered as dangerous like ERCP and Colonoscopy have the least successful claims. It is imperative that clinicians remain vigilant. Performing Gastroscopy is dangerous and so is undertaking a Percutaneous Endoscopic Gastrostomy. Endoscopists should tighten their approach to all procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0244 VISUALIZATION OF INTRA-AMPULLARY CHOLEDOCHOCELE WITH CONTRAST MEDIUM FOR EVALUATING TECHNICAL DIFFICULTY IN ERCP

N. Nishino
Gastroenterology Center, Southern Tohoku Hospital, Koriyama/Japan

Contact E-mail Address: nishinon@tim.hi-ho.ne.jp

Introduction: Choledochocele has been rarely recognized. We focus on intra-ampullary choledochocele (IAC). We had experienced some cases with IAC as refractory access to bile duct (BD). IAC has small cyst within ampulla regulated by Oddi’s sphincter, so the BD axis has changed via IAC. The cases with IAC would require a high technical skill for axis alignment or alternative strategy such as infundibulotomy or precut. We propose advantage of conventional ERCP (cERCP) with contrast medium, which provides images of IAC and leads to evaluation of the difficulty in cannulation.

Aims & Methods: This study aims to recognize the morphology of intra-ampullary bифurcation of bile duct (BD) and pancreatic duct (PD). Its variation allows the elucidation of the reason for difficulties in cannulation. The current study is a retrospective consecutive case study that is conducted in a single facility, with a study period of 8 years. Our strategy for ERCP was carried out with the contrast medium injected via a catheter, but without guide wire (GW) seeking. Intra-ampullary bифurcation was particularly visualized with the contrast medium, and X-ray images were magnified sequentially 5–10 times each. The eligibility criteria were: it must be naif papilla and both of BD and PD must be visualized. The following factors were evaluated: ampulla shape, number of orifices, angle of intra-ampullary bифurcation and presence of IAC. The Location, size and shape of IAC were used to search the database. They were then analysed for successful outcome of IAC visualization.
Results: There were cases of 1223 naïve papilla out of 2226 cases in total. The success rate to access BD with naïve papilla was 97.6% (1195/1223) and overall post-ERCP pancreatitis (PEP) was 1.3% (29/2226). The eligible patients were 908 (505 male and 403 female), among whom IAC was identified in 6.0% (54/908). The prevalence of IAC in the L/N, D and F types were 9.9% (48/542), 1.2% (4/338) and 4.1% (7/170) respectively. IAC was significantly higher in the L/N (p < 0.01) and F (p < 0.05) types than in the D type. The choledochocele shapes of Sp, Sh and Ow were 59.3%, 13.0%, 27.8%, respectively. The average size was 8.1 mm (3.7–18.3) in diameter. The location of IAC in Ac and Ab were 60.1% (274/456) and 39.9% (182/456) respectively. In Ac, the IAC was found with LN shape only. Patients of 53.7% (29/54) required GW placement on PD to access BD. IAC was alternately seen on MRCP in 10% (3/30).

Conclusion: Choledochocele is rarely seen on even cERCP, in addition the visualization of IAC has been rarely reported. IAC could be actually visualized with prudent contrast medium injection. Our results showed aminosalicylates in the intra-ampullary images. IAC would require refractory pursuit of the axis alignment due to its unexpected pathway within ampulla to access BD. Moreover, 6.0% prevalence of IAC should not be ignored. IAC can be one of the factor of refractory cannulation. cERCP with focus on ampulla could the difficulty in cannulation. On the other hand, WGC would not do. The previous randomized control trials showed no difference to access to BD between WGC and cERCP. However, both procedures still remained cases with refractory cannulation. It has been reported that refractory cannulation might cause PEP1). Therefore careful attention should be paid while passing through IAC to avoid PEP. According to ampulla shapes, especially of L/N and F, cERCP would be recommended to identify the presence of IAC. It will be a warrant strategy to choose.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0245 ENDOTHERAPIES FOR DUCT-TO-DUCT BILIARY ANASTOMOTIC STRICATURE AFTER LIVER TRANSPLANTATION (BASALT STUDY GROUP): INTERIM ANALYSIS AND MEDIUM-TERM OUTCOMES OF A RETROSPECTIVE NATIONWIDE ITALIAN SURVEY

P. Cantu,1, I. Parzanese1, R. Rosa1, G. Santi1, F. Barbaro2, E. Forti3,4,5,6,7,8,9,10

Introduction: Most appropriate endotherapy of biliary anastomotic strictures (AS) remains to be defined.

Aims & Methods: Aim is to retrospectively report the endotherapy for duct-to-duct AS in 2013, procedure related complications and medium-term outcome results in Italy. A questionnaire was sent to the Endoscopy Units working with Italian Liver Transplantation Centers (BASALT study group).

Results: At present sixteen of the 19 Units (84%) returned the questionnaire. Complete endotherapy data and follow-up are available for 182 pts. One-hundred and two patients have been treated with plastic multistenting (PM), 27 with fully covered SEMS and 53 with single stenting (SS). Radiological success was achieved in 144 pts (79%), i.e. 86% of PM, 89% of fully covered SEMS and 60% of SS (p < 0.01 vs PM). Recurrence occurred in 31 pts, i.e. 21% of pts in whom radiological success was achieved: 11% of PM (p < 0.001 vs SEMS and p < 0.05 vs SS), 41% of fully covered SEMS and 17% of SS. After failure of first-line endotherapy (36) or recurrence (31), patients were re-treated with endotherapy (75%), surgery (21%) or percutaneous balloon dilatation (7%), one patient dropped out because of death unrelated to endotherapy. Second-line endotherapy was PM for 26%, fully covered SEMS for 52% and SS for 22% of pts and radiological success was achieved in 82% of them (in 86%, 89%, and 66% with PM, SEMS and SS respectively). Procedure-related complications occurred in 7.8% (51/665), i.e. 2.4% pancreatitis (1 severe leading to death), 4.1% cholangitis and 0.9% bleeding. Overall clinical success was achieved in 85% after a median f-up of 23 mos and no need of surgery in 92% of patients.

Conclusion: Endotherapy is confirmed as the preferred first-line and rescue option for AS. Progressive multi-stenting is most frequently used. Single stenting has suboptimal results and should be abandoned. Use of SEMS is effective, but recurrences seem to be frequent, although a larger patients’ sample needs to be evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0246 COMPARATIVE EVALUATION OF TWO PORCINE EX-VIVO MODELS FOR TRAINING IN ENDOSCOPIC ULTRASOUND- GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTIONS

F. MorosuÈse,1 S. Leblanc2, A. Bertucat3, A. LaquieÈre4, E. Coron5,6,7,8,9,10,11,12,13,14,15

Disclosure of Interest: needs to be evaluated.

Introduction: EUS-guided Cysto-Enterostomy (EUCE), technique indicated for drainage of symptomatic pancreatic pseudocysts and other peri-enteric fluid collections, requires specific skills for which dedicated models are needed. Based on a compact EASE model (Active Simulating for Interventional Endoscopy) we developed two ex-vivo porcine models of retrogastric cysts and evaluated learning performance within the frame of a structured training program.

Aims & Methods: The first model was made of porcine colon (i.e. “natural cyst”), and second one was made with an ostomy bag (i.e. “artificial cyst”). All procedures were achieved with EUS scope under fluoroscopy. Both models were evaluated prospectively over a 2-days session involving 14 students and 5 experts. Results: “Natural cyst” and “artificial cyst” were prepared respectively within 10 and 16.5 minutes (p = 0.05). More than 10 EUS procedures were done in each model. Model grading (analogic scale) showed no significant difference for primary endpoint of global satisfaction (p = 0.60). Radiological endpoints, however, showed significant differences (p = 0.05) whereas it was significant favoring “artificial cyst” in terms of ability to teach procedural steps (p = 0.01) and ease of puncture (p = 0.03) because of less elasticity. Moreover, experts considered it useful to improve students’ proficiency superior with “artificial cyst” (p = 0.008)

Conclusion: Both “artificial and natural cysts” are efficient for EUCSE training in terms of global satisfaction. However, the “artificial cyst” model appears to make procedure easier and it can help to teach procedural steps improving students’ proficiency. Larger applications of this model are needed to validate as a standard of training.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0247 A COMPARATIVE STUDY OF SUCTION METHODS DURING ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION (CONVENTIONAL SUCTION VERSUS CAPILLARY SUCTION)

K. Yamakita,1 Y. Kitano2, Y. Hswamoto2, K. Takahashi2, K. Wada2, S. Otake2, Y. Ota2, Y. Tamaki2, M. Okada2, K. Aso2, Y. Makino2

Introduction: Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) is essential for the diagnosis of various malignant and non-malignant conditions. However, aspiration efficiency is highly variable and the aspiration technique is an important factor. Various aspiration techniques have been reported and the best aspiration technique to improve aspiration efficiency remains to be defined. In the current study, we compared the conventional aspiration method (CA) using syringes with the aspiration method (AM) using capillary suction catheters (CSC) during EUS-FNA.

Materials and Methods: The study was approved by the ethical committee of our institution and all patients provided written informed consent at the time of the procedure. A total of 60 procedures (25 in each group) were conducted by one experienced investigator. Patients were randomized into two groups: the CA method group and the AM method group. After the CA method group was aspirated, the AM method group was aspirated by the same investigator. Aspiration was considered successful if any amount of fluid was obtained. The aspiration efficiency was assessed by the volume of the aspirated fluid and the number of aspiration attempts.

Results: The mean aspiration efficiency was 252.8 ± 79.8 µl in the CA method group and 307.0 ± 90.7 µl in the AM method group (p = 0.004). The number of aspiration attempts was 4.2 ± 1.7 in the CA method group and 3.5 ± 1.4 in the AM method group (p = 0.006). The number of successful aspirations was 25/25 in each group.

Discussion: The aspiration method using capillary suction catheters improved aspiration efficiency compared with the conventional aspiration method. The aspiration method using capillary suction catheters is recommended for use in daily practice, as it allows saving aspiration attempts and aspirating more tissue.
EUS guided tissue acquisition using a 25G-gauge core biopsy needle without an on-site cytology showed high accuracy for definitive diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0250 A COMPARATIVE STUDY BETWEEN EUS-GUIDED BILARY DRAINAGE AND PERCUTANEOUS BILIARY DRAINAGE IN PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION AND FAILED ERCP

Department Of Gastroenterology, Hangzhou First People’s Hospital, Hangzhou, China

Contact E-mail Address: zacharylu@126.com

Introduction: Patients with malignant biliary obstruction conventionally undergo percutaneous transhepatic biliary drainage (PTBD) after failed endoscopic retrograde cholangiopancreatography (ERCP) (1). While PTBD is effective, it is associated with significant morbidity, such as bile leakage, bleeding, and pneumothorax, and involves uncomfortable external drainage (2). Endoscopic ultrasound-guided biliary drainage (EUS-BD) is a minimally invasive endoscopic procedure increasingly offered to patients with malignant biliary obstruction after failed ERCP (3). Although a recent meta-analysis reported better clinical efficacy and superior safety of EUS-BD when compared to PTBD, there are still no high-quality clinical data (4).

Aims & Methods: We aimed to compare efficacy and safety of EUS-BD to PTBD in patients with malignant biliary obstruction after failed ERCP at a single tertiary referral center from mainland China. From November 2011 through December 2015, consecutive patients undergoing EUS-BD or PTBD for malignant biliary obstruction after failed ERCP were included. Demographical, biochemical, and outcome data were registered for each group. The primary outcomes included technical success rate and incidence of complications, the secondary outcomes were clinical success rates and re-intervention rates.

Results: A total of 93 patients (mean age 68 ± 13.5 years, 49 males) were included, 33 in the EUS-BD group and 60 in the PTBD group. Both groups were similar in terms of age, gender, baseline bilirubin and functional status. Technical success was achieved in 32 (97.0%) of 33 patients in the EUS-BD group and in 57 (95.0%) of 60 patients (p > 0.05) in the PTBD group. The clinical success (jaundice relief: reduction in serum bilirubin by 50% within the first month) was achieved in all patients with technical success (32/32, 100% EUS-BD vs. 57/57, 100% PTBD).

Disclosure of Interest: All authors have declared no conflicts of interest.
P0251 A PROSPECTIVE COMPARATIVE STUDY OF EFFICACY OF EUS GUIDED FNA VERSUS ERCP GUIDED BRUSH CYTOLGY IN ATTAINMENT OF HISTOPATHOLOGY OF DISTAL CBD MASSES

P.N. Desai, M. Kabrawala
Endoscopy, Surat Institute Of Digestive Sciences, Surat/India

Contact E-mail Address: drp.desai@hotmail.com

Introduction: Distal CBD masses have always been a diagnostic dilemma. They are difficult to diagnose with any modality used. Brush cytology under ERCP guidance was used up till now and also intraductal biopsies were used. The yield was hardly around 60% using all together. We started doing EUS localization of these difficult to identify distal CBD masses and took FNA from them. We devised a protocol to see the results of EUS FNA and brush cytology in the diagnosis of these masses.

Aims & Methods: We aimed to study the efficacy of EUS guided FNA for attaining tissue from distal CBD masses and comparing it to ERCP guided brush cytology from the same masses. 56 cases with distal bile duct mass with a certain diagnosis in almost 81% and a suspicious diagnosis in 19%.

Results: Total number of cases 56 Age (range) 57.2±13.6 Male to Female 40:16 Total Needle Bi ulcerin (0mg/dl) 5.9±6.4 Mean size of the mass 12 mm (7 mm to 30 mm). Mean Number of passes with FNA needle 2.5 (2 to 5 passes). Mean number of passes with cytology brush 2 (2 to 5). Positive diagnosis obtained With FNA 47 (83.9%). Positive Diagnosis obtained by brush 34 (60.7%).

Discussion:

With EUS the tumors were sometimes difficult to locate and identify. But giving some time and instilling water in duodenum were useful techniques to identify the masses. Only a 25 G needle was used as the FNA had to be taken almost always from the duodenum and with difficult angles. But we succeeded in taking FNA from all cases.

Conclusion: EUS FNA is a very effective method for diagnosis of distal bile duct masses with a certain diagnosis in almost 81% and a suspicious diagnosis in around 19% cases. Its efficacy is better than ERCP guided brush cytology. Even small masses are amenable to FNA using EUS guidance. Male over 57 years with jaundice and distal bile duct obstruction has a very high likelihood of having a distal CBD cholangiocarcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0253 TRANSM AORTIC ENDOSCOPIC ULTRASOUND GUIDED FNA IN THE DIAGNOSIS OF LUNG CANCERS AND MEDIASTINAL LYMPH NODES

P. Somani, M. Sharma
Department Of Gastroenterology, Jaywant Rai Speciality Hospital, Meerut/India

Contact E-mail Address: dr_piyushsomani@yahoo.co.in

Introduction: Obtaining a tissue diagnosis from a lung tumour or a mediastinal lymph node located lateral to the aorta (para-aortic) is a diagnostic challenge because of the interposition of the aorta. Invasive surgical procedures like mediastinotomy, thoracotomy, or video-assisted thoracic surgery is required for the diagnosis of these lesions. Lymph node stations immediately anterior to the aortic arch and lateral to the descending aorta are difficult to access. Lymph nodes on the “far-side” of major blood vessels can be visualized by endoscopic ultrasound(EUS), however Fine needle aspiration(FNA) is avoided due to concern for bleeding complications. Tumours and mediastinal lymph nodes located in the para-aortic region can easily be visualized by esophageal EUS, because the aorta provides an excellent medium to transfer ultrasound waves.

References

G. Macedo

84%; p required another EUSTD attempt. Complete resolution of PFCs with DPPS was drainage with a different modality (surgery/percutaneous drainage) and 8 cases lesions was 92 mm (IQR: 74–120). The overall technical success rate was 78% EUSTD of PFCs using DPPS and FCSEMSs.

Aims & Methods:

We aimed to evaluate the feasibility, yield, and safety of EUS-guided lung tumours and pancreatic fluid collections (PFCs). We undertook a retrospective case series of 12 consecutive patients with suspected lung cancer or tuberculosis who underwent transaortic FNA during a study period of 7 years. In all cases, the para-aortal lesion was the only site suspect lung cancer or tuberculosis (other lesion/lymph node if present were negative). Based on CT/ PET imaging, a transesophageal FNA performed through the aorta was considered as the only option to diagnose or stage these patients by means of a minimally invasive procedure. Seven patients had left-sided lesions, 1 case had a lesion in the right lower lobe and 1 in left upper lobe. Four patients had enlarged para-aortic lymph nodes (mean size 18 mm, range 8–22 mm), suspicious for ISLSCC stations 5(n=1) and 6(n=3). One patient had anterior mediastinum mass. EUS was performed with a linear echoendoscope. All aspirates were obtained under real-time US guided FNA by using a 22/25-gauge needle. A single real-time FNA of the lung mass or lymph node was performed. The para-aortal area was observed on EUS for 5 minutes to assess for immediate procedure-related complications.

Results:
The final diagnosis was known in 11 patients (5 non-small-cell lung carcinoma [NSCLC], 2 small-cell lung carcinoma [SCLC], 3 tuberculosis and 1 thymolipoma). EUS-FNA established diagnosis in 9 of 12 patients (75%) (4 NSCLC, 1 SCLC, 3 tuberculosis and 1 thymolipoma). One aspiration revealed reactive nodal tissue, and one demonstrated nonrepresentative material. One procedure was abandoned due to complication. Three patients in whom diagno- sis was not established by transaortic FNA underwent subsequent surgical stag- ing (1 throracotomy, 1 mediastinotomy, and 1 VATS), and malignancy was found in 2 of the 3 patients. Trans aortic FNA was found to be safe. In one patient, EUS images after FNA were suspicious for a small para-aortic hema- toma. This patient recovered without any adverse event.

Conclusions:

This study confirms the feasibility and probable safety of single EUS guided transaortic aspiration in para-aortic lesions. The diagnostic yield is 75 percent. Clearly, further study and very careful selection by expert EUS operators is needed before this procedure can be routinely recommended. Advantages of this procedure include day care procedure, less invasive than surgical procedures, low cost, good diagnostic yield and can be performed in poor surgical candidate. Limitations includes single centre study, require EUS expertise, more data is required. At present, Transaortic FNA should only be performed in the absence of alternative minimally invasive diagnostic procedures.

Disclosure of Interest:

All authors have declared no conflicts of interest.

P2054 ULTRASOUND-GUIDED ENDOCUTOCR TRANSDUGAL DRAINAGE FOR PANCRA TIC FLUID COLLECTIONS

M. Sibila1, S. Lopes1, A. Peixoto1, F. Vilas-Boas1, P. Moutinho-Ribeiro1, G. Macedo2

1Gastroenterology, Hospital São João, Oporto/Portugal
2Centro Hospitalar São João, Porto Medical School, Porto/Portugal

Contact E-mail Address: marccostasilva87@gmail.com

Introduction:

Ultrasound-guided endoscopic transgastric drainage (EUSTD) of pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPPS) requires placement of multiple stents and can be restricted by inadequate drai- nage and leak risk. Recently, the use of fully covered self-expanding metal stents (FCSEMSs) has been reported as an effective alternative.

Aims & Methods:

We aimed to evaluate the successful placement of stents, the impact of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: disclosure of interest, more data is required. At present, Transaortic FNA should only be performed in the absence of alternative minimally invasive diagnostic procedures. Definitive diagnosis with full histological assessment including IHC was obtained in 88% (44/50) of the patients. Diagnosis of EUS-FNB showed 36% (72/malignant. SELs (32 GISTs, 1 metastasis from breast cancer, 1 leiomyosarcoma, 1 carcinoid, 1 SEL-like adenocarcinoma, 1 schwannoma, 1 benign SEL (leiomyoma), 4 schwannomas, and 1 lipoma), and 6 (12%) indeterminate SELs. Considering malignant vs. benign lesions, the sensitivity, specificity, PPV, and NPV were 85% (95%CI 70.2–94.3), 100% (95%CI 58.7–100%), 100% (95%CI 85.1–100%), and 62% (95%CI 27.7–84%), respectively. No major complications requiring additional care have been observed. Conclusion: In this multicenter study, we found that EUS-FNB with the new 20G needle is an effective and safe method for the diagnosis of SELs with a high rate of producing adequate histological material and high diagnostic accuracy even from difficult-to-approach anatomical locations. Comparative studies with different needle sizes are awaited.

Disclosure of Interest:

All authors have declared no conflicts of interest.

References:


P2055 COMPARISON OF NATURAL COURSE VERSUS EUS-GUIDED ETHANOL ABLATION FOR PANCREATIC CYSTIC LESIONS


1Department Of Internal Medicine And Liver Research Institute, Seoul National University College of Medicine, Seoul/Korea, Republic of

Contact E-mail Address: pseudo.jh@gmail.com

Introduction: Endoscopic ultrasound-guided(EUS)-guided ethanol ablation for pancreatic cystic lesions (PCLs) is a recently introduced treatment option for PCLs. The aim of this study was to compare the clinical outcomes of EUS-guided ethanol ablation with those of the natural course of PCLs. Aims & Methods: We performed retrospective study of patients with PCLs divided in two groups: EUS-guided ethanol ablation group (n = 118, performed between June 2006 to August 2015) and natural course group (n = 458, diagnosed between January 1993 to August 2015). The propensity score-matching analysis
between the two groups was applied in order to minimize the effect of selection bias. There was a larger rate of significant reduction in size (≥ 20% of initial size). The secondary outcomes were the rate of significant growth in size (> 10 mm), complete remission rate, and surgical resection rate.

**Results:** In a propensity matched analysis of 88 pairs, the mean initial cystic size of EUS-guided ethanol ablation group and natural course group was 23.72 ± 10.99, 23.16 ± 13.15 mm and the mean follow-up duration was 75.45 ± 38.12, 82.12 ± 59.06 months respectively. Significant reduction in size was detected in 53 (60.2%) of the EUS-guided ablation group and 17 (19.3%) in the natural course group (p = 0.001). Significant growth in size was detected in 6 (8.9%) of ablation group and 11 (12.5%) of natural course group. (p = 0.202). Seven patients (7.95%) underwent surgical resection in the EUS-guided ablation group and 17 patients (19.3%) in the natural course group (p = 0.080) during follow-up. Overall 28.8% patients (34 of 118) who underwent EUS-guided ethanol ablation achieved the complete remission.

**Conclusion:** PCLs that underwent EUS-guided ethanol ablation can be seen the likelihood of getting clinical benefits such as reduction of the cystic size, the chance for surgical resection and the natural course of them. It is also expected to achieve a certain level of complete remission for PCLs.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0257 RANDOMIZED TRIAL COMPARING THE FRANSEN AND FORK-TIP NEEDLES FOR EUS-GUIDED FINE-NEEDLE BIOPSY**

J.Y. Bang, S. Hebert-Magee, M. Hasan, U. Navaneethan, R. Hayes, S. Varadarajulu

Center For Interventional Endoscopy, Florida Hospital, Orlando/United States of America/FL.

**Contact E-mail Address:** jybang213@gmail.com

**Introduction:** Fine-needle tissue comprising both tumor and desmoplastic stroma is required for molecular profile-based personalized chemotherapy in pancreatic cancer. Recently, a three-plane symmetric needle with Fransen geometry and a Fork-tip biopsy needle have been developed for histological tissue procurement.

**Aims & Methods:** We aimed to compare tissue acquisition between the 22G Fransen and 22G Fork-tip needles in patients undergoing EUS-guided sampling of pancreatic masses.

**Results:** In 50 patients randomized to undergo EUS-guided sampling, the diagnosis was pancreatic cancer in 43, neuroendocrine tumor in 2, lymphoma in 1 and chronic pancreatitis in 4 patients. There was no significant difference in total tissue area (median 6.1 mm² [IQR 3.5–10.5] vs. 8.2 mm² [IQR 4.0–13.0], p = 0.53), presence of desmoplastic stroma in tumors (100 vs. 83.3%, p = 0.23), sizes of diagnostic cell block (96.0 vs. 92.0%, p = 0.68) and diagnostic adequacy at ROSE (94.0 vs. 98.0%, p = 0.62) between the Fransen and Fork-tip needles, respectively.

**Conclusion:** Both the Fransen and Fork-tip needles appear equally effective in yielding histological tissue. By virtue of their ability to yield a diagnostic cell block in greater than 90% of patients, the new generation FNB needles may obviate the need for ROSE during EUS-guided tissue sampling.

**Disclosure of Interest:** S. Hebert-Magee: Consultant for Boston Scientific Corporation R. Hayes: Consultant for Boston Scientific Corporation and Olympus America Inc. S. Varadarajulu: Consultant for Boston Scientific Corporation and Olympus America Inc. All other authors have declared no conflicts of interest.

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**P0258 THE SUCCESS RATE OF DOUBLE BALLOON ENDOCOPIC CHOLANGIOGRAPHY IN PATIENTS WHO UNDERWENT THEIR INITIAL SURGERY AS INFANT IS SIGNIFICANTLY LOWER THAN OTHER PATIENTS**

K. Yokoyama1, T. Yano1, J. Ushio2, K. Tamada1, A. K. Lesor2, H. Yamamoto3

1Department Of Gastroenterology, Jichi medical university, Tochigi/Japan
2Department Of Gastroenterology, Jichi Medical University, Tochigi/Japan

**Contact E-mail Address:** r7060k@jichi.ac.jp

**Introduction:** To evaluate the success rate of double-balloon endoscopic retrograde cholangiopancreatography (DBERCP) to reach the anastomosis in patients with surgically altered gastrointestinal anatomy.

**Aims & Methods:** We review 346 patients with surgically altered anatomy who underwent DBERCP from April, 2002 to December, 2016 (47 patients with biliary atresia (BA) after living donor liver transplantation (LDLT), 33 with LDLT without BA, 45 with biliary resection and choledochojejunostomy, 111 with gastric resection and Roux-en-Y bypass, 48 with gastric resection and Billroth-II resection, 18 with pyloro-preserving pancreaticoduodenectomy, and 42 others). We evaluate the success rate according to the type of gastrointestinal anastomosis, age, and age at surgery.

**Results:** The success rate for reaching the biliary anastomosis (or papilla of Vater) in all 346 patients (66y.o (3–91)) was 83%. The rate in 47 patients with BA after LDLT (12y.o (3–39)) was 57%. In the remaining 299 patients the rate was 87%.

The success rate of reaching the biliary anastomosis in patients with BA after LDLT was significantly lower than other patients (p < 0.01). There was no significant difference between the success rate in the patients over or under 13 years at the time of ERCP (50% vs 56%, p = 0.70). The success rate was lower in patients who underwent initial surgery as an infant (Kasai hepatoportoenterostomy) than in those past infancy (54% vs 88%, p < 0.01). When reaching the biliary anastomosis is successful, the success rate of cannulation in the patients after LDLT is high (92%). When the success rate for reaching the biliary anastomosis in patients with BA after LDLT is significantly lower than other patients. The age at the time of ERCP did not affect the success rate of reaching the biliary anastomosis, but the success rate was lower in patients who underwent their initial surgery as infants.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0259 EUS-GUIDED RADIOFREQUENCY ABLATION OF DIFFICULT SITES IN THE LIVER: A PRECLINICAL STUDY**

N. Junya, T. Tamura, M. Itonaga, R. Shimizu, Y. Ida, M. Kitano

Second Department Of Internal Medicine, Wakayama Medical University, Wakayama/Japan

**Contact E-mail Address:** jybang213@yaho.co.jp

**Introduction:** Liver tumors such as hepatocellular carcinoma and liver metastases sometimes occur in positions in which treatment using percutaneous radiofrequency ablation (RFA) is difficult, such as the caudate lobe and surface of the liver. EUS-guided RFA (EUSRATM) can offer an alternative treatment by accessing these tumors through the stomach or duodenum. To the best of our knowledge, only one report has described EUS-RFA of the liver in an animal model, using a 19-gauge EUS-FNA needle with an umbrella-shaped array at the tip.

**Aims & Methods:** We examined whether a novel 19-gauge RFA needle can be introduced to ablate the liver in a porcine model under EUS guidance. Two pigs were used in this study. All procedures were carried out under general anesthesia. EUSRATM needle and a VIVA combo™ generator (TaeWoong Medical, Gimpoo, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-mm, and 20-mm exposed tips) were used. After the echoendoscope was advanced to the stomach, the RFA needle was inserted into the surface of the left lobe. EUS-RFA was performed at 5-40 W for 2–6 min in each mode. In each pig, three RFA needles with 10-, 15-, or 20-mm exposed tips were serially used for insertion and ablation. Subsequently, the RFA needle with the 10-mm exposed tip was used in the quadrato lobe of the gallbladder through the bulb of the duodenum.

**Results:** All procedures were technically successful. After the procedure, the liver of the pig was removed, and visible RFA effect were evaluated macroscopically. Histology with hematoxylin and eosin (HE) staining showed coagulative necrosis in the ablated area, corresponding with the macroscopic ablated area.

**Conclusion:** In this experimental study, EUS-RFA could be performed technically not only in the surface of the left lobe, but also in the adjacent to the gallbladder of the porcine liver. Further studies are required to confirm the efficacy and safety.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


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**P0260 CYANOACRYLATE INJECTION THERAPY OF SMALL BOWEL VARIANCES BY DOUBLE-BALLOON ENTEROSCOPY (DBE): A TERTIARY CENTRE EXPERIENCE**

A. Murino1, N. Koukia2, E. Vlachou1, K. Planché2, D. Patch1, E. J. Despot1

1Digestive Free Unit For Endoscopy at The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, London/United Kingdom
2Department Of Radiology, The Royal Free Hospital and University College London (UCL) Institute for Liver and Digestive Health, London/United Kingdom

**Contact E-mail Address:** albertomurino@yahoo.it

**Introduction:** Small bowel varices (SBV) occur as a consequence of portal hypertension and may result in life-threatening mid-gut bleeding. First line management usually involves radiological intervention (RI) (e.g. TIPS, stenting of occluded mesenteric veins +/- embolisation of culprit varices). In cases where RI is impossible, management options become very limited.

**Aims & Methods:** This case series evaluated the usefulness of DBE facilitated cyanoacrylate injection of SBV. Retrospective review of DBE facilitated cyanoacrylate injection of SBV at our institution (December 2015 to August 2016). Demographic, clinical, endoscopic and radiological findings, interventions and follow-up data were analysed.

**Results:** Seven DBEs were performed in 5 patients (3 women, median age: 73-years). Four patients had previous surgery (hemi-hepatectomy (n = 2); SB resection (n = 2)); one patient had a history of intra-abdominal sepsis in childhood causing portal vein thrombosis. No radiological or surgical options were deemed feasible in any case. SBV were diagnosed at capsule endoscopy and triple phase CT mesenteric angiography. At DBE, a total of 10 nests of SBV were identified.
and injected with cyanoacrylate glue. There were no haemorrhagic or embolic complications. A median size of 80 mm was developed and then removed by a congenital jejunal cyst, which was treated successfully with antibiotics. All patients underwent DBEs via the anterograde route and 1 patient required bi-directional DBE for treatment of both proximal and distal SBV and another patient required a 2nd anterograde DBE for treading of further patent proximal SBV. At 30-day follow-up post-therapy, only 1 patient had exhibited a mild recurrence of mid-gut bleeding.

Conclusion: Cyanoacrylate injection therapy of SBV at DBE appears to be a safe and effective management strategy for this condition when other first-line options are not available.

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P0261 MAGNIFYING NARROW-BAND IMAGING FINDINGS EFFICACY FOR INFLAMMATORY ACTIVITY EVALUATION IN SMALL INTESTINAL CROHN’S DISEASE WHEN USING NEWLY DEVELOPED MAGNIFYING ENTEROSCOPY: A PILOT STUDY

N. Ogata1, K. Ohitsuka2, S. Sasanuma1, M. MisaWA1, Y. Mori1, T. Kudo1, T. Hisayuki1, T. Hayashi1, K. Wakamura1, S. Kudo1
1Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama/Japan
2Gastroenterology And Hepatology, Tokyo Medical and Dental University, Tokyo/Japan

Contact E-mail Address: n.ogata@hotmail.co.jp

Introduction: The development of balloon endoscopy and capsule endoscopy has made observation of the small intestine possible in clinical practice. The usefulness of magnifying endoscopy has already been reported in observing the pharynx, esophagus, stomach and colon. A single-balloon enteroscopy (SBE) with 80x magnification has been recently developed. Aims & Methods: The aim of this pilot study was to assess the efficacy of narrow-band imaging (NBI) magnifying findings for evaluating the severity of inflammation in small intestinal crohn’s disease (CD). The study was conducted in Showa University Northern Yokohama Hospital. We included CD patients who underwent enteroscopy with magnification from September 2013 to February 2015. NBI images and a biopsy specimen were obtained from small intestinal mucosa for CD patients with use of SBE (Y-0007, Olympus, Tokyo). Magnifying NBI was performed, and the images were evaluated by assessing vascularity, increased vascularization, and the increased caliber of capillaries into three grades as follows: Normal, Visible and Irregular. Normal was indicative of inactive disease, while Visible and Irregular were indicative of acute inflammation in our study. The outcome measures included the diagnostic ability of magnifying NBI findings to distinguish active CD from inactive CD on the basis of histological activity.

Results: Twenty-four patients were enrolled. There was a correlation between magnifying NBI findings and the histological assessment (Spearman’s r = 0.54, p < 0.05).

Conclusion: The NBI findings in the small intestinal mucosa had a correlation with histological inflammation and could help in distinguishing between active and inactive CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0262 SINGLE-INCISION LAPAROSCOPIC-ASSISTED DOUBLE BALLOON ENTEROSCOPY: A NOVEL TECHNIQUE TO MANAGE SMALL BOWEL PATHOLOGY

I. Stasinos1, N. Kamperidis1, R. Ramsheshanker2, A. Munio1, C. Fraser1, J. Wood1, Naviarne2, A. Humphries1
1The Wolfson Unit For Endoscopy, St Mark’s Hospital, London/United Kingdom
2Surgery, St Mark’s Hospital and Academic Institute, London/United Kingdom

Contact E-mail Address: Ioannissstasinos@nhs.net

Introduction: Double balloon enteroscopy (DBE) has revolutionised the diagnosis and treatment of small intestinal conditions. However, in even expert hands, deep small bowel (SB) insertion can be challenging, especially in patients with a history of abdominal surgery. Moreover, if the findings at DBE are not amenable to endoscopic therapy, a further surgical procedure is usually required to provide definite treatment. Laparoscopic-assisted DBE (LA-DBE) using a standard multi-port technique has previously only been reported in a small series of 3 patients with Peutz-Jeghers Syndrome (PJS).

Aims & Methods: This case series reports the development of LA-DBE using single-incision laparoscopic surgery (SILS) applied to a wide range of clinical indications. Retrospective review of LA-DBE procedures performed in a single tertiary centre over a 6 year period. Demographics, indication, findings, diagnostic and therapeutic interventions were recorded. Completion, complication rates and hospital length of stay were also captured.

Results: 17 procedures were performed over 6 years in 17 patients who had failed standard DBE. Mean (range) age was 40 (17-73) and 41% of patients were male. The enteroscopic approach was oral in 13/17 patients and rectal in 4/17. Laparoscopic approach was standard (multipor) in the first 4 cases, SILS was then used in all subsequent patients (13/17). The mean (range) procedure time was 147 (84-210) mins. Indications were PJS (n = 10), suspected submucosal/ intramural lesion at small bowel imaging (n = 5) and obscure gastrointestinal bleed (OGBB) with vascular abnormalities seen at capsule endoscopy (n = 2). In 15/17 procedures the target pathology was reached using laparoscopic assistance only and 1/17 was converted to intraoperative enteroscopy (IOE). In 1/17 the suggested pathology at magnetic resonance enterography (MRE) was not identified. Therapy was applied in 15/17 (88%) cases. 7 underwent endoscopic therapy of which 6 polyectomy and 1 ablation with argon plasma coagulation (APC). 4 required limited SB resection and 4 underwent both endoscopic polyectomy and small bowel resection for a second polyp that could not be removed endoscopically. A total number of 57 polyps were removed with the largest measuring 40 mm. The range of length of surgically resected SB was 4-17 cm. Diagnoses were PJS polyps (n = 9), neuroendocrine tumour (NET) (n = 2), PJS polyps and NET (n = 1), transection arteriovenous malformation (n = 1), angioectasia (n = 1), inflammatory polyp (n = 1), leiomyoma (n = 1), Meckel’s diverticulum (n = 1). Median length of stay post procedure was 2 (1-19) days. 8/17 patients were discharged at 24 hours. 3/17 patients developed complications: 1 small bowel leak, 1 perforation, 1 deep vein thrombosis, 1 patient had repeated post surgery rebleeding requiring blood transfusion and 1 patient that was readmitted 8 days post procedure with subacute SB obstruction which resolved with conservative management.

Conclusion: LA-DBE appears to be a safe, effective and minimally invasive procedure that can be applied for the management of small bowel polyps surveillance and treatment in patients with Peutz-Jeghers syndrome.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0263 GASTRIC EMPTYING IN CROHN’S DISEASE – EVALUATION BY SMALL BOWEL CAPSULE ENDOSCOPY

A.M. Singeap1, A. Trifan1, S. Chirila1, I. Giaurca1, I. Cucureanu2, C. Staniciu2
1Gastroenterology, "Grigore T. Popa" University of Medicine and Pharmacy, Iasi/Romania
2Institute of Gastroenterology and Hepatology, Iasi/Romania

Contact E-mail Address: anamaria.singeap@yahoo.com

Introduction: The complex relationship between small bowel inflammatory disease (IBD) and motility disorders of the digestive tract is a complex area of study, so far incompletely elucidated. The association between Crohn’s disease and gastric emptying time modification has been relatively less studied. However, there is no single standardized method to study gastric emptying, one particular investigation that could bring direct information in this field being the small bowel capsule endoscopy (SBCE).

Aims & Methods: We aimed to study gastric emptying by small bowel capsule endoscopy in patients with suspected and confirmed Crohn’s disease. We evaluated gastric passage time showed by SBCE in patients with small bowel Crohn’s disease, compared to patients without IBD, investigated by SBCE (PillCam), following recognized indications, in the Institute of Gastroenterology and Hepatology of Iasi, tertiary center in North-East of Romania.

Results: 144 SBCE studies were included, 24 were cases of suspected and confirmed Crohn’s disease. The mean time of gastric passage in patients with Crohn’s disease was 51±21 minutes, longer than in patients without inflammatory bowel disease, in which the mean gastric passage time was 24±16.6 minutes.

Conclusion: Gastric passage time, evaluated by SBCE, is prolonged in patients with Crohn’s disease compared to patients without IBD, suggesting a relationship between chronic inflammation and gastric motor disorders. Globally, the values correlated with those considered as physiological by other exploration methods. SBCE studies may provide additional data on gastric motility (and in general gut motor disorders), with special usefulness in some individual cases, as particular symptoms or variations in the bioavailability of small bowel released drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0264 META-ANALYSIS SHOWS THAT PURGATIVE PREPARATION INCREASES SMALL BOWEL VIDEO CAPSULE ENDOSCOPY DIAGNOSTIC YIELD AND IMPROVES THE QUALITY OF SMALL BOWEL MOTILITY ASSESSMENT

P. Gkolfinakis, G. Triantziou, G. D. Dimitriadis, K. Triantafylloiu
2nd Dept Of Internal Medicine And Research Institute, National and Kapodistrian University of Athens, Medical School, Athens/Greece

Contact E-mail Address: ktriant@med.uoa.gr

Introduction: The value of purgative preparation (PP) before small bowel video capsule endoscopy (VCE) remains controversial and it has been recently challenged.

Aims & Methods: The aim of this meta-analysis was to examine the effect of PP on small bowel VCE outcomes. We performed literature searches in MEDLINE and Cochrane Library to identify randomized-controlled trials (RCTs) evaluating the effect of small bowel preparation –purgative (PEG, sodium phosphate, United European Gastroenterology Journal 5(5S)
compared to clear liquids diet, PBP significantly increased small bowel VCE DY and improves VQ without affecting exam's CR. However, the positive effect of PBP on VCE DY is mainly derived from two relative small, old (2004 and 2009) RCTs and disappears if only PEG preparation studies are meta-analyzed. Heterogeneity was measured using the I2 statistics. Publication bias was assessed by funnel plots inspection and the quality of the meta-analyzed studies was assessed using the Jadad criteria.

Results: We identified 9 eligible RCTs with 12 sets of data, including 1029 subjects. They were low risk of bias trials and no publication bias was detected. As an entirely visual medium it depends on the qualitative scale, most of the bowel preparations were considered reasonable for most images, blur radius 3px was the threshold for adequate visualisation but even 1px of blur radius decreased the visualisation quality of the aphtha image. The aphtha image was also affected the most by decreased contrast; conversely the ulcer was deemed more inadequately visualised with higher contrast. The aphtha image was also affected the most by decreased contrast; conversely the ulcer was deemed more inadequately visualised with higher contrast. The other images were generally adequately visualised at ±10% contrast. Results are detailed in the table below.

Disclosure of Interest: All authors have declared no conflicts of interest.  

P0265 INTER-OBSERVER AGREEMENT IN BROTZ CLEANING SCALES FOR CAPSULE ENDOSCOPY

Gastroenterology, Centro Hospitalar de Vila Nova de Gaia e Espinho, Vila Nova de Gaia/Portugal  
Contact E-mail Address: malufada_m_p_sousa@hotmail.com

Introduction: The diagnostic yield of capsule endoscopy (CE) depends on the adequate visualisation of the mucosa. As with colonoscopy, cleaning scales should be described in the report in order to better interpret results. In 2009, Brote et al proposed and validated 3 different cleaning scales in 40 patients.

Aims & Methods: A hundred CE videos (Mirocam®) were reviewed by 2 authors at a fixed frame rate of 100 frames per second in quadruple view (Miroview Client). The CE were evaluated according to Brotz scales: (1) Overall adequacy assessment (adequate/inadequate) (2) Qualitative scale (excellent, good, fair, poor) and (3) Quantitative scale (0–10 score, graded from 0–2 visualization of the mucosa, fluids, bubbles, bile and luminosity). The aim of this study was to evaluate the inter-observer variability of this cleaning scales. The kappa coefficient was used to calculate the inter-observer agreement in overall adequacy assessment and the intra-class correlation coefficient was used to evaluate the concordance of the qualitative and quantitative scales.

Results: In overall adequacy assessment, the quality of bowel preparation was classified as adequate by observer 1 in 83% and by observer 2 in 73%, with an inter-observer kappa index of 0.76 (p < 0.001) suggesting strong agreement. In the qualitative scale, most of the bowel preparations were considered reasonable (40% observer 1 vs 36% observer 2), with an intra-class coefficient of 0.89 (p < 0.001). In the quantitative scale, the mean score of the two observers was 6.5 and 6.7, resulting in an intra-class agreement of 0.78 (p < 0.001).

Conclusion: The optimization of quality of bowel preparation and the diagnostic yield of the CE requires, first, a well-validated cleaning scale. Brotz's rating scales has strong inter-observer agreement. The qualitative scale is easier to apply and has better inter-observer agreement, so the authors propose that it should be used routinely in the CE report.  

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0266 PILOT STUDY OF THE EFFECTS OF IMAGE QUALITY ON LESION VISUALISATION IN SMALL BOWEL CAPSULE ENDOSCOPY

D. E. Yung1, X. Dray1, E. Toth1, E. Rondonotti2, R. Sidhu2, U. Koplyov2, M. Meallindou3, M. Pennazzo1, J. N. Plewes1  
1The Royal Infirmary of Edinburgh, Edinburgh/United Kingdom  
2Hôpital Saint-Antoine, Paris/France  
3Skane University Hospital, Malmo/Sweden  
4Ospedale Valdazia, Comacchio/Italy  
5Royal Hallamshire Hospital, Sheffield/United Kingdom  
6Gastroenterology, Chaim sheba Medical Center, Ramat Gan/Israel  
7San Giovanni Battista University Teaching Hospital, Turin/Italy

Contact E-mail Address: diana.e.yung@gmail.com

Introduction: Capsule endoscopy (CE) is the prime mode of investigation for small bowel (SB) pathology. However, as an entirely visual medium it depends heavily on image quality. The definition of optimal image quality remains unstandardised between studies and poses significant limitations to the quality of study reporting. As yet, there is no widely-accepted or integrated method for scoring SB cleanliness during CE reporting. This pilot study aims to quantify the image properties contributing to adequate visualisation quality in CE images.

Aims & Methods: Five clear images of SB pathology were obtained using MiroCam® (Intromedic, South Korea), image resolution 320×320 pixels(px): P1 and P2 angioectasias, ulcer, aphtha and polyp. Each image was processed using GIMP2 image editing software (www.gimp.org) for 3 parameters: (1) opacity (opacity filter matched in colour to commonly-seen SB contents, 10–90% in 10% increments), (2) blur (Gaussian blur, radius 1–10px), (3) contrast (-50% to 50% in 10% increments). Gaussian blur was used to simulate the effects of rapid capsule movement as well as to affect image definition. A set of 5 original and 190 edited images was obtained. A web-based survey was created using Google Forms and 9 expert CE readers were asked to indicate whether each image was adequate or not for diagnosis. The order of images was randomised for each reader. For each type of pathology, we determined the threshold of image quality which was deemed adequate for diagnosis.

Results: For image opacity, both aphtha and the polypoid lesion were adequately visualised below 40% opacity whereas the threshold was lower for both the ulcer and aphtha (10% opacity). Increasing blur radius significantly impacted the acceptability of images for reaching a diagnosis with confidence; for most images, blur radius 3px was the threshold for adequate visualisation but even 1px of blur radius decreased the visualisation quality of the aphtha image. The aphtha image was also affected the most by decreased contrast; conversely the ulcer was deemed more inadequately visualised with higher contrast. The other images were generally adequately visualised at ±10% contrast. Results are detailed in the table below.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0267 EVALUATION OF A NEW PAN ENTERIC CAPSULE SYSTEM IN PATIENTS WITH SUSPECTED OR ESTABLISHED INFLAMMATORY BOWEL DISEASE - ASSESSING THE SYSTEM FUNCTIONALITY TO VISUALIZE AND ASSESS THE SMALL AND LARGE BOWELS


1Dept. Of Gastroenterology, Sheba Medical Center, Tel-Aviv/Israel
2Policlínico Universitario “A Gemelli”, UO di Endoscopia Digestiva Chirurgica, Roma/Italy
3Servicio de Digesto - Complejo Hospitalario de Navarra, Pamplona/Spain
4Souraski Medical Center, Tel-Aviv/Israel
5Share Zelek Medical Center, Jerusalem/Israel
6Medtronic, Yokosuka/Japan

Contact E-mail Address: abraham.elaikim@sheba.health.gov.il

Introduction: Inflammatory bowel diseases (IBDs) are chronic inflammatory diseases that may affect the whole gastrointestinal (GI) tract, mainly the small bowel and colon. Endoscopic evaluation of these parts is essential to assess disease extent and severity. The small bowel capsule endoscopy (SBC-CE) system is a new system composed of a two-headed capsule with a panoramic field of view and adaptive frame rate, customized for complete coverage of IBD lesions in the entire bowel, data recorder and new disease specific software, allowing assessment and follow-up over time of disease severity and extent.

Aims & Methods: The aim was to evaluate SBC-CE system functionality in suspected or established IBD (Crohn’s disease [CD] and Ulcerative Colitis [UC]) patients. This was a prospective 5 center feasibility study assessing the practicality and software and capsule performance. Subjects enrolled in the study ingested the new capsule after standard bowel preparation plus boosts. Contraindications for its use included obstruction, dysphagia or swallowing disorders, pacemakers etc. GI patency was assured using the patency capsule. The procedure characteristics, (3) clinical outcomes, (4) adverse events.

Results: Overall reading time, over all video quality and occurrence/severity of adverse events. Points were subjective coverage of SBC, subjective duration of total and segmental reading time, over all video quality and occurrence/severity of adverse events.

Conclusion: The new SBC capsule is a friendly, minimally invasive capsule allowing complete evaluation of the entire gut of IBD patients. The system may be used to assess disease severity and extent and for follow up of IBD patients.

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C. Spada: consultant and speaker fees for Medtronic
I. Fernández-Unión Sainz: Receive Consulting fee from Medtronic
H. Yanai: I received consulting, advisory, lectures and speaker’s fees from: Abbvie, Janssen, and Takeda
I. Eyal: Employee at Medtronic
A. Lahat: Employee at Medtronic
S.N. Adler: Received consulting fee from Medtronic
All other authors have declared no conflicts of interest.

P0268 THE UTILITY OF A NOVEL TRANSPAPILLARY DILATATION TECHNIQUE WITH A DIATHERMIC CATHETER FOR SEVERE MPD STRicture DUE TO CHRONIC PANCREATITIS

S. Kato, M. Kuwatai, R. Sugiuira, I. Sano, K. Kawakubo, N. Sakamoto

Gastroenterology And Hepatology, Hokkaido University Hospital, Sapporo/Japan

Contact E-mail Address: shinchan1231@gmail.com

Introduction: Transtabilary dilation for severe main pancreatic duct (MPD) stricture is sometimes difficult and diathermic dilation is now getting attention as a salvage technique for severe stricture; however its efficacy and safety remains unclear.

Aims & Methods: To evaluate the efficacy and safety of a novel transpapillary dilation technique with a wire-guided 6Fr diathermic catheter for severe chronic pancreatitis. Between April 2011 and March 2017, 143 patients with chronic pancreatitis underwent endoscopic transpapillary stent placement for MPD. MPD dilatation was indicated in 18 patients, and diathermic dilation was required in nine patients. We evaluated (1) the patients’ characteristics, (2) procedure characteristics, (3) clinical outcomes, (4) adverse events.

Results: (1) Six patients were men and three were women (mean age, 50.1 years).
(2) Alcohol 8, unknown 1. The strictures were in the head of pancreas: 8, body: 1.

The mean length of stricture was 20.2 mm (range, 10.3–38.8). The mean MPD diameter at the distal side of the stricture was 6.2 mm (range, 2.0–12.7). The success rate of dilatation (55.6%) among them had no former procedure for MPD including stenting. (2) A wired-guided 6Fr diathermic catheter with 30 W power was used for all cases. All cases underwent diathermic dilation as salvage procedure subsequent to conventional dilation. One to 7 diathermy procedures (mean 2.9) were applied in all patients in passage through each stricture. (3) Passage of the diathermic catheter and stent placement was successful in all patients (100%). After diathermy and stent placement, 8 (88.9%) showed improvement of clinical symptoms (abdominal pain). Recurrence of stricture was observed in 2 patients (22.2%). One of them needed diathermic dilation again. (4) Two adverse events (22.2%) were observed and both of them were mild pancreatitis. Multiple diathermy procedures (6 times and 4 times, respectively) and relatively long duration of total diathermy procedures (39 sec. and 25 sec. respectively) were observed in cases with pancreatitis.

Conclusion: Transtabilary diathermic dilation is a relatively safe and effective salvage procedure for severe MPD stricture due to chronic pancreatitis. This technique should be taken in cases that require multiple times and long duration diathermy procedures because of a risk of pancreatitis.

References
EUS-BD using transmural covered metal stent with antimigration periods. The stent patency duration was 275.2 (147.8–402.7) days. During stent occlusion was observed in 5 patients. Neither proximal peritoneal stent abscess in patients with malignant biliary stricture. Late adverse event that segmental duct in 18 patients. Among them, percutaneous transhepatic biliary drainage methods after unsuccessful ERCP. Among these procedures, CDS and RVS require the echoendoscope reaching duodenum. However, HGS and CAS are indicated in cases with inaccessible duodenum. However, HGS is associated with a higher risk of adverse events, compared with the other methods. When the stent dysfunction occurs, re-intervention is more difficult after AGS alone than after HGS or CAS. Thus, we started to add AGS during HGS in a single session from April 2011.

Aims & Methods: The aim of this study was to assess the efficacy and safety of HGS combined with AGS for malignant biliary strictures induced obstructive jaundice. Between Jan. 2006 and Dec. 2014, ERCP was attempted in patients with obstructive jaundice, which was successful in 641 patients and impossible in 154 patients (101 cases due to post-surgical altered anatomy or duodenal stenosis, 53 cases due to difficult cannulation). A total of 145 patients received EUS-BD, HGS and AGS were attempted in 42 (Group A; from Jan 2006 to Aug 2011) and for malignant biliary stricture patients who underwent EUS-BD after failed ERCP were enrolled. The technical and functional success rates, adverse events rate, re-intervention rate, procedure time, overall patient survival time, and time to stent dysfunction or patient death. In Group A, technical success of HGS was defined as successful stent deployment between the left hepatic bile duct and the stomach. In Group B, technical success of HGS with AGS was defined as successful stent deployment at bile duct stricture (AGS) in addition to success of HGS. Functional success for obstructive jaundice was defined as a decrease in bilirubin levels to <40% of the pretreatment value within 2 weeks. The incidence rate of adverse events such as peritonitis, bile leakage, bleeding, stent migration, and stent occlusion was assessed. The re-intervention was defined as any endoscopic, surgical, or percutaneous procedure that was required to improve symptoms after placement of the stent. Time to stent dysfunction or patient death was defined as the time from stent deployment to biliary re-intervention due to stent dysfunction or from the time to stent deployment to patient death. Groups A and B were compared in the technical success rate, adverse events rate, and re-intervention outcomes, the procedure time, the overall patient survival time and time to stent dysfunction or patient death. For subgroup analysis in patients who underwent chemotheraphy the Groups A and B were compared in the overall patient survival, time to stent dysfunction or patient death and adverse events rate.

Results: Technical success rate of Group A was significantly higher than Group B (97.6% vs 83.8%, p = 0.03). The two groups were comparable for the functional success rate (98.2% vs 90.3%, p = 0.25), although the rate of adverse events tended to be higher in Group A than in Group B (26.1% vs 13.5%, p = 0.10). The re-intervention rate tended to be higher in Group A than in Group B (16.7% vs 8.1%, p = 0.25). Groups A and B did not differ significantly in terms of median overall patient survival (75 days vs. 72 days, p = 0.70), and median time to stent dysfunction or patient death (68 vs 63 days, p = 0.08). In patients who underwent chemotherapy, there were no difference in the overall patient survival time (121 vs 137 days, p = 0.08) between the two groups although the time to stent dysfunction or patient death was significantly shorter in Group A than in Group B (71 vs 95 days, p = 0.02).

Conclusion: Technical success rate of HGS with AGS was lower than HGS, although HGS with AGS is superior to HGS in terms of stent patency in patients undergoing chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Long-term outcomes of endoscopic ultrasound-guided right intrahepatic duct drainage with transmural covered metal stent


Introduction: Endoscopic ultrasound-guided biliary drainage (EUS-BD) has been regarded as an effective alternative in cases of endoscopic retrograde cholangiopancreatography (ERCP) failure or inaccessible papilla. However, EUS-BD for right intrahepatic duct obstruction (EUS-BDR) remains challenging, although recent studies showed promising result. The aim of current study was to evaluate the feasibility and long-term outcomes of EUS-BD with transmural covered metal stents for right intrahepatic duct obstruction. Aims & Methods: Retrospective study, a total of 24 consecutive patients who underwent EUS-BDR after failed ERCP were enrolled. The patients were consisted of 12 cases of benign strictures and 12 cases of malignant strictures. The biliary stents used in this study was covered metal stent with anchoring flaps (4.5-6.5 mm, fully covered metal stent with anchoring flaps). The technical success rate, clinical success rate and adverse events were evaluated.

Results: The technical success rate was 91.7% (22 cases) and 80.8% (18 cases) in benign and malignant stent deployment. Time to stent dysfunction or patient death was 75.2 days (147.8-402.7 days). During follow-up period, stent revision due fistula tract was successful and additional percutaneous biliary drainage for right intrahepatic duct obstruction was not required in all patients who achieved clinical success.

Conclusion: EUS-BD using transmural covered metal stent with antimigration properties for right intrahepatic duct obstruction may be technically feasible, effective and relatively safe for both benign and malignant strictures by expert hands. Furthermore, the route of hepatocoduodenotomy created by covered metal stent was durable and endoscopically easily managed. Disclosure of Interest: All authors have declared no conflicts of interest.

Utility of EUS-guided hepaticogastrostomy for malignant biliary obstruction of ERCP inability

H. Inai, M. Takenaka, M. Kudo Gastroenterology And Hepatology, Kindai University, Osaka, Japan

Contact E-mail Address: codenagemenchan1023@gmail.com

Introduction: Endoscopic ultrasound guided transmural gall-bladder drainage (EUS-GBD) with covered metal stent has become increasingly used to treat patients with acute cholecystitis who are not a candidate for surgical treatment. However, there are limited data comparing long-term outcomes of EUS-GBD with covered metal stent and conventional percutaneous cholecystostomy. Aims & Methods: This is a single-centre, retrospective study of long-term outcomes of EUS-GBD and percutaneous cholecystostomy in patients who are not suitable for cholecystectomy. Data about the patient who underwent EUS-GBD for acute cholecystitis is obtained from prospective collected EUS database of the hospital. In percutaneous cholecystostomy group, the electronic medical record of patients who underwent percutaneous cholecystostomy was reviewed and analyzed. Demographics and procedure related outcomes including early, late adverse events and need for re-intervention in each group was compared. Results: A total of 181 patients (74 in EUS-GBD group and 107 in percutaneous cholecystostomy group) were enrolled in this study. The cause of cholecystitis and ASA class were similar in both groups. The technical/clinical success rate was 100%/98.6% in EUS-GBD group and 99.1%/97.2% in percutaneous cholecystostomy group (P = 0.591). However, early adverse events such as migration of stent or dislodgement of drainage tube, stent or tube occlusion, tract inflammation around percutaneous tube, bile leakage and recurrence of cholecystitis was more frequently observed in percutaneous cholecystostomy group (5.7% in EUS-GBD group and 21.07% in percutaneous cholecystostomy group, P = 0.017). Percutaneous cholecystostomy tube was indwelled for....
median 20 days (14.0–45.2) after the procedure. A total of 7 patients in EUS-GBD intervention for all of them were conducted successfully. The patients who underwent percutaneous cholecystostomy more frequently received re-intervention for adverse event or recurrence of cholecystitis after removal of cholecystostomy. (7/74 vs. 23/106, P = 0.041).

Conclusion: EUS-GBD and percutaneous cholecystostomy were both effective interventions to urgent drainage for acute cholecystitis. However, EUS-GBD might be beneficial than percutaneous cholecystostomy in long term management for the patients with acute cholecystitis who are not suitable for cholecystectomy.

Disclose of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: We retrospectively analyzed the data of DLDT patients with duct-to-duct anastomotic biliary strictures who underwent endoscopic treatment at our center within the last 3 years. FcSEMSs were inserted in 23 patients (13 male, 10 female, mean age: 51 ± 9 years) who were managed with MPSs insertion (Group-2). In Group-1, secondary branch ducts were prophylactically drained with insertion of plastic stent(s) in order to prevent the development of cholangitis due to their occlusion. FcSEMS and plastic stent(s) were left in place for 2 months. In Group-2, maximum number of plastic stents were inserted and replaced every 3 months. Patients with a follow-up duration of at least 3 months after stenting were included to the study. Primary end-points were the number of endoscopic procedures and the time required for structure resolution. The secondary end-point was the recurrence rate of the stent.

Results: FcSEMSs were successfully deployed in all cases. The diameter of the Fc-SEMSs was 10 mm in 22 patients and 8 mm in 1 patient. The length of the Fc-SEMSs was 15 cm in 13 patients, 10 cm in 8, and 5 cm in 2 patients. Secondary branch ducts were prophylactically drained with a single plastic stent in 12 patients, 2 plastic stents in 8 patients, and 3 plastic stents in 3 patients. The median number of endoscopic procedures was 2 (2–4) in Group-1 and 4 (2–9) in Group-2 (P = 0.001). The time required for structure resolution was shorter in Group-1 (65.7 ± 18.2 days) than in Group-2 (240.1 ± 183.4 days) (p < 0.001). The recurrence rates were similar in Group-1 (17.4%) and Group-2 (15.6%) (P = 0.57) after a follow-up period of 315 ± 290 and 378 ± 96 days, respectively. Conclusion: FcSEMS is an effective method for the treatment of anastomotic biliary strictures after LDLT.

Disclose of Interest: All authors have declared no conflicts of interest.

Aims: The aim of this study is to investigate the feasibility of our GI bypass device in animal. Before animal study, we performed an experimental study for durability test under simulated intestinal fluid flow. And next, we performed an animal study with 10 Yorkshire pigs. The stents were placed on pylorus with fixation by clippings or on duodenal bulb without fixation. Follow up endoscopy was done per one week after implantation. After they were sacrificed, gastric, duodenal, and jejunal tissues were harvested and examined for histologic assessment of any device or procedure-related effects.

Results: The overall clinical success rate for GI bypass in in vivo model was 10 (100%). The mean follow up time was 8 weeks (range: 6–10 weeks). Two patients were operated at 8 weeks after implantation.

Conclusion: New GI bypass stent was an effective alternative to surgical bypassing. We developed a new endoscopic gastrointestinal (GI) bypass stent and designed a preclinical study to assess the safety in a porcine model.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Gastroenterology and Hepatology, Korea University College of Medicine, Seoul, Korea, Republic of
2. Division of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea, Republic of
3. Department Of Internal Medicine, Institute of Digestive Disease and Nutrition, Korea University College of Medicine, Seoul, Korea, Republic of
4. Contact E-Mail Address: kmume@korea.ac.kr

Introduction: Endoscopic therapy has been emerged as alternative treatment to bariatric surgery for reducing weight. We developed a new endoscopic gastrointestinal (GI) bypass stent and designed a preclinical study to assess the safety in a porcine model.

Aims & Methods: We retrospectively analyzed the data of LDLT patients with duct-to-duct anastomotic biliary strictures who underwent endoscopic treatment at our center within the last 3 years. FcSEMSs were inserted in 23 patients (13 male, 10 female, mean age: 51 ± 9 years) who were managed with MPSs insertion (Group-2). In Group-1, secondary branch ducts were prophylactically drained with insertion of plastic stent(s) in order to prevent the development of cholangitis due to their occlusion. FcSEMS and plastic stent(s) were left in place for 2 months. In Group-2, maximum number of plastic stents were inserted and replaced every 3 months. Patients with a follow-up duration of at least 3 months after stenting were included to the study. Primary end-points were the number of endoscopic procedures and the time required for structure resolution. The secondary end-point was the recurrence rate of the stent.

Results: FcSEMSs were successfully deployed in all cases. The diameter of the Fc-SEMSs was 10 mm in 22 patients and 8 mm in 1 patient. The length of the Fc-SEMSs was 15 cm in 13 patients, 10 cm in 8, and 5 cm in 2 patients. Secondary branch ducts were prophylactically drained with a single plastic stent in 12 patients, 2 plastic stents in 8 patients, and 3 plastic stents in 3 patients. The median number of endoscopic procedures was 2 (2–4) in Group-1 and 4 (2–9) in Group-2 (P = 0.001). The time required for structure resolution was shorter in Group-1 (65.7 ± 18.2 days) than in Group-2 (240.1 ± 183.4 days) (p < 0.001). The recurrence rates were similar in Group-1 (17.4%) and Group-2 (15.6%) (P = 0.57) after a follow-up period of 315 ± 290 and 378 ± 96 days, respectively. Conclusion: FcSEMS is an effective method for the treatment of anastomotic biliary strictures after LDLT.

Disclose of Interest: All authors have declared no conflicts of interest.

References
VIENNA MULTICENTER EXPERIENCE
BLEEDING STENTS FOR REFRACTORY VARICEAL BLEEDING – A P0278 OUTCOME AFTER THE USE OF SX-ELLA DANIS
Eur J

Results: Forty-eight patients (296 dilations) were evaluated (median of 4 dilations/patient): 85% were male, mean age of 62 years-old, 60% belonging in Group II. Therefore, between different dilations of 5 weeks. Discrimination dysphagia Mellow-Pinks score and luminal calibre were 3 ± 1 and 7 ± 2, 8mm, respectively. Twenty-eight patients (out of 30 live patients non-submitted to additional therapies) answered to the interview: a) 96% had improved, b) 60% had better quality of life, c) 85% had a worse prognosis. Even though retrospective we present the longest follow-up in 12 of 13 patients (clinical success rate, 92.3%). Stent migration was found in a mean of 29, 2 (range: 0–13) days. Therefore the new method to inhibit stent migration is needed for more frequent, ulcers/necrosis of the esophagus were rare with a dwell time of 5 days. The most common adverse events were stent dislocations (n = 13; 37.1%), while ulcers/necrosis of the esophagal mucosa was seen in only 4 (11.4%) patients.

Disclosure of Interest: All authors have disclosed no conflicts of interest.

References

P0279 A NOVEL METHOD WITH SELF-EXPANDABLE METALLIC STENT FASTENED WITH CLIP AND LOOP FOR THE TREATMENT OF ANASTOMOTIC STRICTURRUE AFTER SUBTOTAL GASTRECTOMY
J.K. Kang, S.G. Lim, K.M. Lee, S.J. Shin, B.M. Yoo, J. Kim, C. Noh Gastroenterology, Ajou university school of medicine, Sunon/Korea, Republic of Korea
Contact E-mail Address: pterniou1@naver.com

Aims & Methods: The aim of this study was to evaluate the clinical feasibility of new method to inhibit stent migration in postoperative anastomotic stenosis. From May 2013 until February 2015, patients with benign anastomotic stenosis after subtotal gastrectomy were enrolled at a single tertiary referral hospital. Due to the early-TIPS strategy might improve the overall outcome in patients with anastomotic stenosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0278 OUTCOME AFTER THE USE OF SX-ELLA DANIS BLEEDING STENTS FOR REFRACTORY VARICEAL BLEEDING – A VIENNA MULTICENTER EXPERIENCE
1Gastroenterology And Hepatology, Krankenanstalt Rudolfstiftung, Vienna/Austria
2Division Of Gastroenterology & Hepatology, Department Of Internal Medicine III, Medical University of Vienna, Vienna/Austria
3Krankenhaus Hietzing with Neurologischem Zentrum Rosenhügel, Wien/Austria
44th Department Of Internal Medicine, Wilhelminenspital, Vienna/Austria
5Department Of Medicine III, Head of Division of Gastroenterology and Hepatology - Department of Medicine III, Head of Division v, Wien/Austria

Contact E-mail Address: nikolauspfister@hotmail.com

Introduction: Current guidelines favour the use of bleeding stents over balloon tamponade for the management of variceal hemorrhage (VBV). However, data on the efficacy of and outcomes after the placement of an SX-ELLA – Danis-Stent” are limited.

Aims & Methods: Retrospective multicenter study including cirrhotic patients receiving Danis-Stents for massive/refractory EVB at 4 tertiary care centers in Vienna (Medical University of Vienna, Krankenanstalt Rudolfstiftung, Wilhelminenspital and Krankenhaus Hietzing). Rates of bleeding control (5 days), bleeding-related mortality (6 weeks) and overall mortality were assessed.

Results: Among 35 patients, 13 patients had an unsuccessful endoscopic band ligation (EVL) prior to Danis-Stent placement. Danis-Stent controlled EVB in 80% (28/35) of patients. In the remaining uncontrolled bleeders (n = 7), 3 patients had subsequent EBL, while in 3 patients the stent had to be replaced and 1 patient received a Linton-tube. Among these patients with initial Danis-Stent failure, 4 died of uncontrollable EVB. 2 experienced early bleeding-related mortality, and only 1 patient achieved a successful long-term bleeding control. In total, early-rebleeding within 6 weeks occurred in 14.3% (including n = 1 while Danis-Stent was still in place and n = 5 after Danis-Stent was removed); 3 under- went venous ligation and received a subsequent Danis-Stent, and 1 patient was treated with a Sengstaken tube. Moreover, among n = 14 patients without early rebleeding within 6 weeks, only n = 3 (21.4%) showed rebleeding later during follow-up: n = 2 patients were treated with a Sengstaken-Tube (both experienced bleeding-related death) and n = 1 had another Danis-Stent placed (successful bleeding control). Only n = 11 (31.4%) patients did not experience any rebleeding after Danis-Stent removal, while n = 8 patients died with the Danis-Stent in situ. Notably, “early-TIPS” was performed in this study, but 4 (11.4%) received an NIPS during follow-up. 5 patients (14.3%) died due to uncontrolled bleeding (≤5days) and n = 10 died within 6 weeks (bleeding-related mortality: 28.6%). Overall, n = 22/35 (62.9%) patients died. The median survival was 10.5 (IQR:82) days after Danis-Stent placement. Median Danis-Stents dwell time was 5 (range: 0–13) days. The most common adverse events were stent dislocations (n = 13; 37.1%), while ulcers/necrosis of the esophaghal mucosa was seen in only 4 (11.4%) patients.

Conclusion: Danis-Stent controlled trauma bleeding/massive EVB in 80% of patients but bleeding-related mortality was as high as 45%. While stent dislocations are frequent, ulcers/necrosis of the esophagus were rare with a dwell time of 5 days. The implementation of an early-TIPS strategy might improve the overall outcome in patients with Danis-Stent placement.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
J.K. Kang, S.G. Lim, K.M. Lee, S.J. Shin, B.M. Yoo, J. Kim, C. Noh Gastroenterology, Ajou university school of medicine, Sunon/Korea, Republic of Korea

Contact E-mail Address: pterniou1@naver.com

Introduction: Benign anastomotic strictures are common adverse events of gastrointestinal tract surgery. And, they are difficult to be managed conservatively. The first choices of treatment of anastomotic strictures are balloon dilatation and bougination. But, they are requiring repeated sessions. Self-expandable metallic stent (SEMS) placement has continuous expanding effect for a long period. But, It has problem of frequent stent migration, because of slow stent expanding, 2–3 days. Therefore the new method to inhibit stent migration is needed for more successful management of anastomotic stenosis.

Aims & Methods: The aim of this study was to evaluate the clinical feasibility of new method to inhibit stent migration in postoperative anastomotic stenosis. From May 2013 until February 2015, patients with benign anastomotic structure after subtotal gastrectomy were enrolled at a single tertiary referral hospital, prospectively. The Niti-S ComVi pyloric stents (Taewoong Medical, Korea), double-layered, were inserted. We made two nylon thread loops at the proximal bared section of the stents. After stent placement, stent fastening with loop and clip method was performed. Patients’ symptoms and oral intake were assessed once or twice a week with a clinical check-up or telephone interview. After two weeks, the loop and stent removals were done.

Conclusion: The new method with fastening the stent with loop and clip can reduce the risk of stent migration.
Our fasting method can be feasible and useful technique for postoperative analysis of subcutaneous fat. Additionally, with some studies estimating the rate at around 20%14,15. We report a single-centre, retrospective cohort study on the use of SEPs, and aimed to establish risk factors for stent migration.

Aims & Methods: Case note review was undertaken retrospectively on all patients who had fully covered SEPS inserted at a high-volume tertiary oesophageal cancer centre between Jul 13 to Feb 17. All SEPS were placed under fluoroscopic guidance by experienced endoscopists. Stent migration was confirmed endoscopically or radiologically and was defined as displacement of the stent from the stomach or the baseline stent location. Loss of the recanalised lumen. Shapiro-Wilk testing showed non-normal distribution of data. Non-parametric testing by logistic regression was therefore performed.

Results: 188 stents were inserted to palliate malignant strictures. 75% in males. We observed a migration rate of 20% (39) in our cohort. We observed a significant association between predilation (within 7 days of the stent procedure) and subsequent stent migration (31% in dilated vs 13% in undilated stents). This also met Bonferroni correction for significance. We demonstrate a trend towards shorter strictures being associated with an increased risk of migration [OR 1.14 CI1.12–1.164 (p=0.032)]. There were no significant associations between migration and whether patients received previous chemo-radiotherapy, or whether the stent crossed the GOJ.

Conclusion: Endoscopic placement of SEPS is a safe and effective procedure in the management of malignant dysphagia with a low risk of complications. Predilation of lesions within 7 days of SEPS insertion carries a risk of subsequent stent slippage – suggesting that a cautious approach to dilation may be prudent. Further, larger studies may demonstrate an association with shorter stents and migration Rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Surgery 1 - hall 7a

P0282 COMBINED RESSECTION IN ESOPHAGEAL CANCER: MYTH OR REALITY
D. Rusanov1, K. Pavelets2, M. Antipova3, M. Protchenkov1, M. Pavlovs1, U. Drozd1, A. Sokolova1, G. Florovsky1
1 Faculty Surgery Named After Prof. A.a. Rusanov, Saint-Petersburg State Pediatric Medical University, Saint-Petersburg/Russian Federation
2. Contact E-mail Address: Rusanov_vergeltung@yandex.ru
Introduction: Esophageal cancer is one of the 10 most common malignant diseases of the digestive tract and ranks 7th in the structure of mortality. The indicators of 5-year survival, at the present stage, rarely overcome the threshold of 15-20% in the course of the disease. Most patients are considered inoperable by the time of admission to hospital due to the spread of the tumor process. Local-regional spread of the tumor is the reason for refusing to perform radical surgical intervention. Taking into account the data for the last 10 years, only 1.6% of patients had different types of combined and surgical treatment. According to various authors, chemoradiotherapy is offered as an alternative to surgical intervention in locally advanced forms of esophageal cancer. In addition, there is no consensus between “western” and “eastern” authors about the issues of lymphodissection in esophageal cancer. Thus, for the optimal primary staging of esophageal carcinoma and planning of surgical treatment, the surgeon needs a preoperative, spatial picture of the prevalence of the tumor process in patients suffering from esophageal cancer.

Aims & Methods: To analyze the proportion of tumor using computer 3D-model of mediastinum and long-term results of treatment. Describes the experience of treatment of 190 patients with esophageal cancer from 2010 to 2015. Of them to 52 (27.3%) performed CT, to 37 (19.5%) EUS. Besides, CT to 101 (53.1%) and MRI 7 (0.1%) with subsequent DCE-MRI. 1 group- 123 (64.7%) patients, performed surgical treatment based on resection of thoracic part of esophagus, fundamental part of stomach and two-field lymphodissection. To 15 (7.9%) performed combined operations. The data obtained were compared with intracorporal findings and pathohistological examination. H group- 67 patients (35.3%) used palliative treatment: 31 (16.3%) - esophageal stenting, 26 (13.7%) - argon-tumor recanalization, 10 (5.3%) - argon-tumor recanalization with esophageal stenting.

Results: On data of all 59 (100%) 3D-models, were estimated, localization and length of esophagel tumor, its relationship with the structures of the mediastinum, severity of intraabdominal and intrathoracic lymphadenopathy. In most cases, according to the data 3D model, as well as intraoperative, met defeat of middle and lower esophagus. Severity of involvement of mediastinal structures rated at 48 patients (81.4%). At 35 (59.3%) and 37 (62.7%) cases amafed fiber mediastinoscdi, at 8 (8.5%) patients - invasion to the main bronchi, At 13 (22.0%) and 11 (18.6%) combination of anatomical structures of mediastinum defeat.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Seventy of intrahepatic and intraabdominal lymphadenopathy: mediastinal lymph node at 19 (12.2%) and 20 (33.9%) patients, combined of 38 (64.4%) and 35 (59.3%). At pre-operated staging mostly met advanced form of cancer: T4N1 at 16 (27.1%), T4N2 at 23 (38.9%). Sensitivity in staging of tumor 89.8%. Long-term results: 1-year survival at I group 96.1%, 3-year is 42.3%, 5-year 16.7% II group 1-year survival 6.45%.

Conclusion: The use of 3D-modeling performed using MRI, spiral CT and EUS, allows to planning the optimal surgery and lymph node for locally common form of esophageal cancer, and improve the results of survival. The scope of surgical intervention is advised to plan taking into account the constructed 3D-models, which helps to solve the problem of the possibility of surgical intervention in esophageal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0283 INFLUENCE OF CONTINUOUS ADMINISTRATION OF LOW-DOSE ASPIRIN FOR INTRAOPERATIVE BLEEDING ON GASTRIC ENDOSCOPIC GASTRIC DISSECTION: A PROPENSITY SCORE MATCHING ANALYSIS

Y. Horikawa, N. Mimori, H. Mizutani, Y. Kato, S. Fushimi, S. Okubo, S. Sato
Gastroenterology, Hiraka General Hospital Dept. of Gastroenterology, Yohoku Japan

Contact E-mail Address: horikawa_01@me.com

Introduction: Endoscopic submucosal dissection (ESD) was a promising method for the resection of superficial gastric neoplasms. The patient with antithrombotic agents has increased for first or secondary prevention of cardiovascular or cerebral disease. Continuous administration of low-dose aspirin (LDA) during ESD was recommended in American, British and Japanese guidelines. However, the influence of this drug for the hemostasis condition during ESD procedure is still unclear. Therefore, we performed this study for addressing intraoperative bleeding risk without cessation of LDA.

Aims & Methods: In this retrospective study, we assessed the hemostasis condition during ESD that were treated for superficial gastric lesions between January 2014 and March 2017. Patients with antithrombotic therapy by LDA (n = 42) and those with no antithrombotic therapy (n = 187; Control) were compared using propensity score matching. Primary outcome was frequency of intraoperative major bleeding. Secondary outcomes included procedure time, Hb reduction rate, En bloc resection rate, and adverse event rate.

Results: The propensity score analysis yielded 39 matched pairs. Adjusted comparison between the two groups showed similar with regards to major bleeding, median [range]: 0.0% vs 0.0%, x2 (1) = 0.0, p = 0.062. Procedure time was prolonged in aspirin group by 16.7% without significant differences. Other aspects were the same in both groups with low incidence of adverse event; perforation (0%), thromboembolism (0%).

Conclusion: This study indicated the feasibility of gastric ESD with continuous administration of LDA including little intraoperative bleeding and adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0284 WEEKDAY OF CANCER SURGERY IN RELATION TO PROGNOSIS

P. Lagergren, F. Mattsson, J. Lagergren
Department Of Molecular Medicine And Surgery, Karolinska Institutet, Stockholm,Sweden

Contact E-mail Address: pernilla.lagergren@ki.se

Introduction: Later weekday of surgery seems to reduce the prognosis in oesophageal cancer, while any such influence on other cancer sites is unknown. This study aimed to test whether weekday of surgery influences prognosis following curative gastrectomy. This nationwide Swedish population-based cohort study from 1997-2014 analysed weekday of elective surgery for 10 major cancer groups in relation to disease-specific and all-cause mortality. Cox regression provided hazard ratios with 95% confidence intervals (CI) adjusted for the covariates age, sex, year of surgery, patient volume, calendar year, and tumour stage.

Results: Included were 228,927 patients. Later weekday of surgery (Thursday and even more so Fridays) was associated with increased mortality rates for gastrointestinal cancers. The adjusted hazard ratios for disease-specific mortality comparing surgery on Friday with Monday were 1.57 (95% CI 1.31-1.88) for oesophago-gastric cancer, 1.49 (95% CI 1.17-1.88) for liver-pancreatic-biliary cancer, and 1.53 (95% CI 1.44-1.63) for colorectal cancer. Existing mortality during the initial 90 days of surgery made little change to these findings, and the all-cause mortality was similar to the disease-specific mortality. The associations were similar in analyses stratified for covariates. No consistent associations were found between weekday of surgery and prognosis for cancer of the head-and-neck, lung, thyroid, breast, kidney-bladder, prostate, or ovary-uterus.

Conclusion: The scope of surgery has increased in recent years and it is essential to plan Taking into account the constructed 3D-models, which helps to solve the problem of the possibility of surgical intervention in oesophageal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0285 IMPACT OF POSTOPERATIVE COMPLICATIONS AND PERIOPERATIVE ONCOLOGICAL TREATMENTS FOR GASTRIC CANCER PATIENTS AFTER GASTRECTOMY

S. Kamiya1, F. Klevebro1, J. Rovellas1, M. Lindblad1, L. Lundell2, M. Nilsson2
1Surgical Gastroenterology, Karolinska University Hospital, Stockholm/Sweden
2Karolinska University Hospital, Stockholm/Sweden

Contact E-mail Address: satoxi_ki@hotmail.com

Introduction: Recently, multidisciplinary treatments such as perioperative chemo/ radiotherapy have been introduced to improve the prognosis of gastric cancer surgery. Besides that, the postoperative severe complications are thought to be the poor prognostic factor. Present study assessed the prognostic impacts of severe postoperative complications and perioperative oncological treatments in gastric cancer patients.

Aims & Methods: Consequent gastric cancer patients who underwent curative gastrectomy in Karolinska University Hospital between 2006 and 2016 were enrolled. Patients’ characteristics, surgical data, postoperative courses and prognostic evaluations were evaluated according to Clavien-Dindo classification. The significance of postoperative severe complications and perioperative oncological treatment for overall survival (OS) was evaluated by the Cox proportional hazard model.

Results: 1,954 patients were examined in this study. 89 (52.7%) and 66 (39.1%) patients had neoadjuvant and adjuvant treatment, 85 (50.3%) and 84 (49.7%) underwent distal and total gastrectomy, respectively. 24 (14.2%), 16 (9.5%) and 5 (3.0%) were diagnosed as grade III, IV, V complications. The prognosis of the patients with grade III or higher complication was significantly worse (3-year OS: 66.6% vs 47.3%, p = 0.001). Subgroup analysis by pathologic stage showed that the prognosis of pStage III/IV patients with postoperative complications was significantly poorer than the patient with no grade III or higher complications (3-year OS: 45.3% vs 7.5%, p = 0.001).

Conclusion: Regarding to the postoperative severe complications, the Cox proportional hazard model indicated the significant impact on overall survival (p < 0.001). Postoperative severe complications had considerable impact on the OS, especially for pStage III/IV gastric cancer patients. Perioperative oncological treatment may be able to prevent the prognosis from deteriorating due to postoperative complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0286 ENDOSCOPIC PAPILLODECTOMY OF DUODENAL PAPILLARY TUMOR: A REPORT OF 75 CASES

Z. Wang1, E. Linghu1, F. Cai2, Y. Yang2, G. Sun1, M. Li1, S. Li1, X. Wang2, J. Meng1, H. Du1, J. Zhu1, W. Li1
1Gastroenterology And Hepatology, The General Hospital of the Chinese People’s Liberation Army, Beijing/China
2The General Hospital of the Chinese People’s Liberation Army, Beijing/China

Contact E-mail Address: wangziki301@126.com

Introduction: Duodenal papillary tumor as rare gastrointestinal neoplasm is essential for curative therapy due to its malignant potential. Endoscopic papipoolctomy as an alternative approach to surgery in select cases. Endoscopic papillotm is a relatively difficult endoscopic technique mainly performed by experienced endoscopists. Stable standard endoscopic procedures for endoscopic papipollctomy have not been established.

Aims & Methods: We aimed to investigate the clinical value of endoscopic papipollctomy for duodenal papillary tumor based on the endoscopic and clinical characteristics. Between 2006 and 2017, seventy-five patients with duodenal papillary tumor under endoscopic papipollctomy in the gastrointestinal endoscopic center of Chinese PLA General Hospital were included. These patients were diagnosed of duodenal papillary tumor by the clinical manifestation, laboratory tests, CT, MRC, endoscope, EUS, ERCP along with biopsies and histopathologic tests. During the detailed clinical assessment combined with patients’ wishes, endoscopic papipollctomy and followed ERCP procedures were performed successfully, and the clinical data of these patients were retrospectively analyzed.

Results: 75 patients (50 males and 25 females) with a median age of 58.6 yrs (range 27 to 82 yrs) were evaluated. The main clinical symptoms were predomi- nated by abdominal pain followed by cholestasis and cholangitis, but nine cases were non-abdominal symptoms. Endoscopic papipollctomy was technically feasible in all these patients, and was mainly performed by four experienced endoscopists. The majority of excised tumors were exogenous (90.7%, 68/75), and the tumor size ranged between 8 and 55 mm. The final histopathological diagnosis included 12 cases of intraductal papilloma (37.3%, 28/75), pT1a grade, with high-grade intraductal neoplasia (18.7%, 14/75), adenoma with low-grade intraductal neoplasia (26.7%, 20/75), adenoma combined with local carcinoma (16%, 12/75), and neuroendocrine tumor (1.3%, 1/75). En bloc resection was achieved in 53 cases (70.7%) and the piecemeal resection was performed in 22 cases (29.3%). After endoscopic papipollctomy, the ERCP procedures were performed in 70 cases (93.3%). The pro- phyllactic pancreatic duct stent was placed in 30 cases (40%) for preventing pancreatitis, the biliary plastic stent or nasobiliary drainage tube in 16% (12/ 75), the combined of both in 17.3% (13/75), and no stent placement in 26.7% (20/75). Moreover, intraoperative hemostasis was performed in 47 cases (62.7%), including pure endoscopic clip placement, followed by injection therapy, thermal therapy or in combination. Regarding to the postoperative adverse events,
hernorrhage was identified in 11 patients (14.6%) but mainly cured by endoscopic hemostasis, followed by percutaneous (9.3%, 7.75) but cured with medical treatment.

Conclusion: Endoscopic papillectomy can be considered as a feasible and reasonable treatment option for suitable patients with tumors of duodenal papilla.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0229 SURGICAL TREATMENT OF DIVERTICULITIS AND ITS COMPLICATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROL TRIALS
1Faculty of Medicine, Al-Azhar University, Cairo/Egypt
2Department of Surgery, Faculty of Medicine, Cairo/Egypt
3Department Of Clinical Product Development, Institute of Tropical Medicine (NEKKEN), Leading Graduate School Program, and Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki/Japan
4Faculty of Tropical Medicine, Suranaree University of Technology, Thailand
Contact E-mail Address: med.b.dean@azhar.edu.eg

Introduction: Diverticulitis is a common gastrointestinal disease in developed countries, especially among elders. It is classified into five stages according to the severity of the inflammation with stage 3 involving perforation as a consequence. Perforation and abscess formation occur with 30% to 40% and up to 32%. This indicates that acute diverticulitis is an emergency case requiring rapid management. However, the surgical interventions of diverticulitis vary according to its grade and severity, there is a controversy about the preferable surgical procedure of these different complications.

Aims & Methods: We aimed to systematically review and meta-analyze randomized controlled trials (RCTs) comparing outcomes and complications between different surgical approaches for acute diverticulitis and its complications. Nine electronic databases, including PubMed, Scopus, Google Scholar, ISI Web of Science, WHO Global health library (GHL), POPLINE, Virtual health library (VHL), NYAM (New York Academy of Medicine), and SIGLE (System for information on grey literature in Europe), were searched for RCTs comparing different surgical procedures for different grades of diverticulitis. Out of 1738 articles, we included 14 studies with 1076 patients. The primarily assessed outcomes were post-surgical mortality rate besides short- and long-term post-surgical complications. The risk of bias was assessed using the Cochrane Collaboration tool. The pooled risk ratio (RR) and 95% confidence interval (CI) were calculated in the meta-analysis using the RevMan platform. The protocol was registered in PROSPERO (CRD42015032290).

Results: Nineteen RCTs compared laparoscopic sigmoid resection (LSR) (n = 247) versus open sigmoid resection (OSR) (n = 237) for treatment of acute complicated diverticulitis with minimal heterogeneity. For short-term outcomes, there was no significant difference in postoperative overall morbidity (RR 0.89, 95% CI [0.61–1.31]; P = 0.56), all major postoperative morbidity (RR 0.79, 95% CI [0.12–5.07]; P = 0.80), and all minor postoperative complications (RR 0.98, 95% CI [0.62–1.57]; P = 0.94). Similarly, there was no difference between the two procedures regarding the long-term postoperative recurrence and mortality (RR 0.83, 95% CI [0.57–1.21]; P = 0.37) and mortality (RR 0.78, 95% CI [0.46–1.31]; P = 0.34), and mortality (RR 0.95, 95% CI [0.04–24.59]; P = 0.98). In other four RCTs compared laparoscopic laveage with resection (sigmoidectomy) for treatment of perforated diverticulitis with peritonitis, the postoperative mortality rate was non-significant in both short-term (RR = 1.55, 95% CI [0.79–3.04]; P = 0.21) and long-term (RR = 0.67, 95% CI [0.29–1.58]; P = 0.36) follow up. Interestingly, the short-term reoperation rate and long-term precese of intra-abdominal abscesses were significantly higher in OSR (RR = 1.74, 95% CI [1.01–3.02]; P = 0.05) and (RR = 1.74, 95% CI [1.03–3.02]; P = 0.92) respectively. The remaining five RCTs compared between different procedures, like primary anastomosis versus non-restorative resection, RP-LASR versus NRP-LASR, and primary versus secondary resection, for different situations and reviewed qualitatively.

Conclusion: The superiority of LSR over OSR was non-significant in the treatment of acute symptomatic diverticulitis regarding postoperative complications, short-term and long-term perioperative morbidity, and mortality. However, the cosmetic advantage of LL is significant. Regarding perforated diverticulitis with purulent peritonitis, our results showed that LL is as safe as resection (either Hartmann’s operation or sigmoidectomy with primary anastomosis) regarding short- and long-term post-operative outcomes especially in long-term, hospital stay, and overall mortality. Hence, LL is feasible and can act as definitive treatment. Further RCTs are still needed to make a decision regarding these and other procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.
and liver metastases in newly diagnosed patients with CRC. Three hundred patients with CRC undergoing curative resection were included in this cross-sectional study. Complete blood counts with automated differential counts were performed preoperatively. The NLR was calculated by dividing the absolute neutrophil count by the absolute lymphocyte count; also PLR was calculated by dividing the absolute platelet count by the absolute lymphocyte count. The diagnostic performance of NLR and PLR was estimated by ROC curve.

**Results:** Our results suggest that there was high statistically significant difference between NLR (p = 0.003) and PLR (p = 0.002) and tumor stages (I to IV). ROC curve analysis showed high diagnostic accuracy of NLR (AUC 0.774, 95%CI = 0.683–0.790) and PLR (AUC 0.698, 95%CI = 0.663–0.742) for synchronous lymph node and liver metastases. Also combination of NLR and PLR improved diagnostic efficacy (AUC 0.841, 95%CI = 0.811–0.863) for synchronous liver and lymph node metastases.

**Conclusion:** Our results suggest that NLR and PLR could be useful diagnostic CRC biomarkers, and could have potential use in early recognition of different stages of CRC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0291 DEVELOPING AND VALIDATING OF RAMATHIBODI APPENDICITIS IN SUSPECTED APPENDICITIS PATIENTS**

**Contact E-mail Address:** champhon.wil@mahidol.ac.th

**Introduction:** Diagnosis of appendicitis is still clinically challenge where resource is limited. The purpose of this study is to develop and externally validate Ramathibodi Appendicitis Score (RAMA-AS) in aiding diagnosis appendicitis. Aims & Methods: Two-phase cross-sectional study (i.e. derivation and validation) was conducted at Ramathibodi Hospital (for derive), Thammasat University Hospital and Chaiyaphum Hospital (for validation). Patients with abdominal pain and suspected of having appendicitis were enrolled. Multiple logistic regression was applied to develop parsimonious model. Calibration and discrimination performances were assessed. In addition, our RAMA-AS was compared with Alvarado’s score performances using ROC curve analysis. The study was conducted and reported according to Transparent Reporting of a Multivariable Prediction Model for Individual Prognosis Or Diagnosis (TRIPOD) statement.

**Results:** The RAMA-AS consisted of 3 domains 7 predictors including symptoms (i.e. progression of pain, aggravation of pain, and migration of pain), signs (i.e. fever and rebound tenderness), and laboratory (i.e. white blood cell count (WBC) and neutrophil). The model fitted well with data and it performed better discriminate than the Alvarado score with C-statistic of 0.842 (95% CI: 0.804, 0.881) versus 0.760 (0.710, 0.810). Internal validation by bootstrap yieldedSommer’s D of 0.686 (0.608, 0.763) and C-statistics of 0.848 (0.846, 0.849). The C-statistics of two external validations were 0.853 (0.791, 0.915) and 0.813 (0.736, 0.892) with fair calibrations.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0292 IS HAEMORRHHOECTOMY SAFE IN PATIENTS WITH ULCERATIVE COLITIS?**

**Contact E-mail Address:** vocalcord@hanmail.net

**Introduction:** Haemorrhoidectomy in ulcerative colitis (UC) have been considered to be potentially dangerous, but the evidence is poor.

**Aims & Methods:** A study was conducted to ascertain the safety of haemorrhoidectomy in patients with ulcerative colitis and synchronous liver metastasis. Retrospective review of 44 UC patients from 2004 to 2014. Patient demographics and clinical characteristics (anorectal symptoms, prior non operative haemorrhoidal therapy, whether done UC preoperatively (BD) and unproven preoperatively (AD), whether to use azathioprine, presence of other perianal disease, and activity, anatomic location of UC) were recorded. Postoperative complications, and between BD and AD were analysed.

**Results:** The patients were 29 males (65.9%), median age 44 (range, 19–72) years. Preoperative symptoms were bleeding and prolapse (n = 24; 54.5%), prolapse only (n = 6; 13.6%), bleeding only (n = 14; 31.8%). 17 patients (BD, 38.6%) were diagnosed with UC prior to surgery. 4 patients (9.1%) had haemorrhoidal therapy before surgery. There was no other perianal disease. Disease was limited to the rectum (n = 33; 75%), left-sided (n = 9; 20.5%), and extended to right-sided (n = 2; 4.5%). During follow-up, there were no complications such as sepsis, anal stenosis, abscess and fistula formation, and recurrence. There was no difference in complications and other clinical characteristics between BD and AD. There was no difference in complications according to disease extent (p = 0.15).

**Conclusion:** Our data suggest that haemorrhoidectomy may be performed safely in UC patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Aims & Methods: In this study, we investigated the current state of inguinal hernia treatment at our hospital. Surgical indication of inguinal hernia in our department is as follows. Symptomatic inguinal hernia is treated using the TAPP method when there is only one POSSUM score-based risk factor. When 2 or more risk factors are present or the patient has undergone surgery of the prostate, the anterior approach is employed (the UHS and Mesh Plug methods for internal and external inguinal hernia, respectively). Treatment under local anesthesia is prioritized for patients aged 90 years or older and patients with PS2 or higher. Arrangement in operating room is that the operator and assistant stand on the left and right sides of the patient, respectively, anesthesiologist stands at the patient’s head, and a nurse stands caudal to the assistant.

Aims & Methods: This method. Application after carefully deciding the indication may be important for inguinal hernia and introduction of the TAPP method. In expert hands it represents an effective technique for the treatment of acute diverticulitis complicated by diffuse peridiverticulitis. Length of hospital stay was 7.8 ± 2.8 days and we have not recorded any readmissions in patients discharged within 60 days after surgery. The rates of postoperative complications were 6.8% and 2.3% for grade III and V according to the CDCS respectively.

Results: There were 31 men (70.4%) and 13 women (29.6%) with a mean age of 57.8 ± 11.9 years. The mean body mass index was 28.3 ± 3.1 kg/m2. No conversion to open surgery was registered. The mean operative time and estimated blood loss were 184.3 ± 32.7 minutes and 81.2 ± 7.2 ml respectively. All the specimens showed diverticulitis with peridiverticulitis. Length of hospital stay was 7.8 ± 2.8 days and we have not recorded any readmissions in patients discharged within 60 days after surgery. The rates of postoperative complications were 6.8% and 2.3% for grade III and V according to the CDCS respectively.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aim Efficacy of pure laparoscopic left colectomy with primary colorectal anastomosis and temporary loop ileostomy. All the procedures were performed by the same surgeons (S, ADL, FR). Perioperative care plan, operative steps and surgical instrumentation were standardized. We collected patients-, surgery- and hospital stay-related data, as well as short-term outcomes. Complications were classified using the Clavien-Dindo classification system.

Results: There were 31 men (70.4%) and 13 women (29.6%) with a mean age of 57.8 ± 11.9 years. The mean body mass index was 28.3 ± 3.1 kg/m2. No conversion to open surgery was registered. The mean operative time and estimated blood loss were 184.3 ± 32.7 minutes and 81.2 ± 7.2 ml respectively. All the specimens showed diverticulitis with peridiverticulitis. Length of hospital stay was 7.8 ± 2.8 days and we have not recorded any readmissions in patients discharged within 60 days after surgery. The rates of postoperative complications were 6.8% and 2.3% for grade III and V according to the CDCS respectively.

Conclusion: Laparoscopic left colectomy with primary anastomosis and loop ileostomy seems to be a good technique that resulted in encouraging short-term outcomes. In expert hands it represents an effective technique for the treatment of acute diverticulitis complicated by diffuse peridiverticulitis. Length of hospital stay was 7.8 ± 2.8 days and we have not recorded any readmissions in patients discharged within 60 days after surgery. The rates of postoperative complications were 6.8% and 2.3% for grade III and V according to the CDCS respectively.

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Disclosure of Interest: All authors have declared no conflicts of interest.

References
lower abdomen. The bowel extraction was performed by invagination transrectal. After the extraperitoneal distal linear stapling of the sigmoid, the colonic anastomosis was completed by applying a circular stapling device transrectally, assisted by a transcutaneous inserted grasper. Function testing was performed by the coloscope. Gastric access closure was performed by OTSC clip.

Results: The procedure was successful in all animals with operation time ranging from 4.5 to 6 hours. After weight gain in all cases, the animals were sacrificed after postoperative day 42 and the workup showed competent anastomotic healing with a stenosis and consecutive prestenotic dilatation in one case. These animals were excluded. No more peritoneal abscess beside the anastomosis. Gastric closure was healed and the OTSC clip still in situ in all animals. In one case we used two OTSC clips for gastric closure, there were severe adhesions with two perigastric abscesses.

Conclusion: The use of an operating platform like the Anubiscope has the advantage of flexible preparation in opposite position of the instruments. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Flexible colonoscopy provided a fixed reference frame for the investigation and dissection. For resection and anastomosis, an additional transcutaneous access was necessary.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0298 ASCITES, COMPLEX ADNEXAL MASSES AND RAISED CA-125 IN POST-MENOPAUSAL WOMEN: OVARIAN CANCER OR TUBERCULOSIS?

S. Jardak1, H. Kechri2, N. Maamouri1, H. Chaabouni1, N. Ben Mami1 1Tunis, rabta B, Tunis/Tunisia 2Tunis, rabta B, Tunis/Tunisia

Contact E-mail Address: sondajardak1@gmail.com

Introduction: Postmenopausal tuberculosis (TB) is an advanced ovarian cancer, two conditions with different management and prognosis, have many similarities: ascites, complex adnexal mass, peritoneal deposits, and raised CA-125 level. Symptoms such as weight loss, reduced appetite, and dull abdominal pain are also common to these two entities.

Aims & Methods: The aim of this study was to analyze patients' characteristics, laboratory investigations, radiological and surgical findings in post-menopausal women with pelvic TB who were diagnosed after laparotomy or laparoscopy for suspected ovarian cancer. We report twenty-one cases of pelvic-posterioral TB in post-menopausal women who presented with mimicking ovarian malignant from 2004 to 2014 in a Tunisian center.

Results: The mean age was 59.8 (46–87 years). Three patients have personal or family antecedents of TB. The women presented with abdominal pain and distensions of varying duration of 1 month to 6 months. Eleven patients had reduced appetite and weight loss, and four women gave a history of low-grade fever. A CT scan showed the presence of solid-cystic adnexal masses ranging rom 3 cm to 15 cm in diameter in 100% and ascites in 90.4%. Ascitic fluid analysis was done in 19 patients. The culture was used in 12 and the cytological was performed in all cases. The cytological was divided into tuberculous and inflammatory. In 13 cases, the cytological was tuberculous while in 6 cases the cytological was diagnostic of peritonitis or inflammatory (in %) in the lamina propria. The study implied investing the cellular composition of the inflammatory infiltrate in the lamina propria. Depending on the density of the inflammatory infiltrate, the presence of tuberculous granuloma was confirmed.

Conclusion: The presence of tuberculous granuloma in peritoneal biopsy was considered as a strong evidence for tuberculous peritonitis. The current study is the first report that has considered the tuberculous peritonitis as an initial presentation of ovarian malignancy in our population.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0300 REGULATORY B CELLS CONTRIBUTE TO THE ALLEVINATION OF COLITIS INDUCED BY DEXTRAN SULPHATE SODIUM AFTER H. PYLORI INFECTION

X. Li1, N. Wang1, Q. Xue1, J. Tan1, J. Wang1 1Department Of Gastroenterology, Peking University, People’s Hospital, Beijing/China

Contact E-mail Address: lixiajy@163.com

Introduction: Epidemiological studies have showed that there was an inverse correlation between Helicobacter (H. pylori) infection and the incidence of inflammatory bowel disease (IBD). Our previous research indicated that the regulatory immune responses induced by H. pylori infection were not limited to gastric mucosa, IL-10-producing Breg cells and Foxp3+ Treg cells expanded in spleen and mesenteric lymph nodes (MLN), the balance of intestinal mucosal immunity was influenced to a skewed regulatory immune response.

Aims & Methods: A murine model with H.pylori infection and acute and chronic colitis induced by dextran sulphate sodium (DSS) was established to explore the function of regulatory B cells (Breg cells) in the alleviation of inflammatory bowel disease (IBD). All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

IBD - HALL 7_

MONDAY, OCTOBER 30, 2017 09:00-17:00

P0299 INSULINLIKE GROWTH FACTOR IGF-I AND INFLAMMATORY RESPONSE IN THE COLONIC MUCOSA IN ULCERATIVE COLITIS

V. Pavlenko, F. Urasova, G. Eseneva, A. Pavlenko, N. Korabina Starropolitan State Medical University, Starropolitan Russian Federation

Contact E-mail Address: pavlenkow@yandex.ru

Introduction: Peptide growth factors including the IGF family are expressed in the colon and are thought to have proliferative activity of the intestinal epithelium in ulcerative colitis (UC) and Crohn’s disease (CD). At the same time, IL-8 is one of the main triggers behind the immunoinflammatory process in the colonic mucosa (CM) in UC, and its level may be of prognostic value in determining the illness course.

Aims & Methods: The aim of the study was to identify the role that IGF-I plays in colonic inflammation in 35 patients with different clinical (Rahmihlech index) and endoscopic (Mayo index) activity of UC. The treatment was administered in view of the severity of UC. 20 healthy volunteers were the control group. IGF-I levels in peripheral blood were determined by ELISA (Mediagnost, Germany). The results were expressed as mmol/l. The spontaneous and E. Coli LPS-induced synthesis of IL-8 in rectal biopsy samples were studied via ELISA.

Results: The results were expressed as picograms per 1 mg of wet tissue (pg/mg). The severity of the disease in the method of IGF-I levels in the blood plasma decreased (15.16±1.35 mmol/l (P < 0.05 to control)), while spontaneous production of IL-8 chemokine in rectal biopic samples went up (300.0±6.0 pg/ml, P < 0.05). In case of the LPS stimulation the production of IL-8 (450.0±10.0 pg/ml, P < 0.05 vs control) in the CM went up markedly (750.0±30.0 pg/ml, P < 0.001 vs control). There was significant inverse correlation (rs) detected between the IGF-I levels in the blood plasma, on one hand, and indicators of the UC clinical, endoscopic activity and the intensity of the inflammatory infiltrate in the CM, on the other. Direct regulatory levels of spontaneous and LPS-induced production of the IL-8 chemokine and the density of the inflammatory infiltrate in the CM of patients with active UC. Through the period of the clinical remission development (an average of 8 weeks) the IGF-I levels increased up to 94.25±28.18 mmol/l (P < 0.05 vs control), yet have not reached the control value (P < 0.05 to control). Induction of the clinical remission was associated with a decrease to the level of the central values for spontaneous and LPS-induced IL-8 production, regardless of UC activity.

Conclusion: The intensity of the inflammatory process in the CM depends on the level of IL-8 produced by respective cells. Evidently, IL-8 has a capacity of inhibiting the production of IGF-I at the peak of inflammation (acute UC). Improvement of synthesis of IGF-I and reduced IL-8 in remission facilitates regeneration of the damaged mucosa.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: The microbial dysbiosis plays a pivotal role in the pathogenesis of inflammatory bowel disease (IBD), however, the role of fungal microbiota in IBD was unclear. The aim of our study was to clarify the gut fungal composition in IBD patients with different treatment strategies.

Aims & Methods: 73 IBD patients were divided into three groups, Untreatment (n = 21), Antiinflammation (n = 43) and Immunosuppression (n = 9). Antiinflammation was defined as treatment with 5-aminosalicylic acid (5-ASA), salazosulfapyridine (SASP) and Immunosuppression as treatment with Glucocorticoid (GC), azathioprine (AZA), biologics and thalidomide. Noninflamed and inflamed mucosa were collected for 16S and ITS sequencing to explore the fungal and bacterial composition. Inflamed mucosa was utilized for RNA extraction and real-time PCR to detect the expression of IBD-associated biomarkers, such as TNF-alpha, IL-17A, MCP-1, etc. Analysis of Spearman’s correlation was performed to estimate the fungi-bacteria and microbiota-biomarkers correlation.

Results: Compared with noninfamed mucosa, lower diversity and evenness were observed in inflamed mucosa in all IBD patients, but no significance in noninfamed (or inflamed) mucosa of different treatment strategies. Beta diversity showed a treatment-dependent clustering in inflamed mucosa. Fungal microbiota was constituted by fungi from Ascomycota, Basidiomycota and Zygomycota phyla. There was a higher proportion of Zygomycoza in inflamed mucosa than noninfamed mucosa in untreated IBD patients, and Antiinflammation and Immunosuppression significantly altered their abundance. Mortierella from Zygomycoza was the richest fungi in both inflamed and noninfamed mucose of all patients. To analyze the effects of treatment strategies on fungal microbiota in IBD patients, we found Immunosuppression decreased abundance of Akkermansia muciniphila, Lachnospira and Lachnospira, but no significance in noninfamed mucosa decreased Ascomycota in noninfamed mucosa but decreased it in inflamed mucosa. Both Antiinflammation and Immunosuppression increased Zygomycoza in inflamed mucosa, but not in noninfamed mucosa. Fungi-bacteria-biomarkers correlation showed a weak correlation in noninfamed mucosa of untreated IBD patients, and Antiinflammation and Immunosuppression didn’t significantly alter fungi-bacteria correlation patterns in noninfamed mucosa. However, after Immunosuppression, fungi including Candida, Chaetomium, Cladosporium and Cryptococcus were positively correlated to NanoBacteri and Cloacibacterium. Furthermore, Mortierella was negatively correlated with Blautia and Lachnospira in noninfamed mucosa of immunosuppression. In analysis of bacteria-biomarkers correlation, we found bacteria such as Clostridium, Par relat and Par relat and Clostridium, Par relat and Roseolaria, Fecalibacterium, Ruminococcus and Megamonas were significantly correlated to several biomarkers (such as IFN-gamma, IL-10, IL-17A, IL-22, TNF-alpha, etc). Notably, there were different correlation patterns in different treatment strategies, especially, IL-17A was extensively correlated to bacteria such as Enterococcus, Clostridium, Fecalibacterium and Klebhiella in inflamed mucosa of Immunosuppression, but not correlated to Fecalibacterium in Antiinflammation. Additionally, we found a weak fungi-biomarkers correlation in IBD patients, but fungi such as Asterotremella and Verticillium were correlated to biomarkers such as IL-17A, IL-22, IL-8 and MCP-1, and treatment altered microbiota-biomarkers correlation patterns.

Conclusion: Treatment strategies affect fungal composition. To some extent, immunosuppression may aggravate gut fungal dysbiosis in IBD patients, but antiinflammation partially ameliorate it. The bacteria-fungi and microbiota-biomarkers correlation on acute IBD is a treatment-dependent clustering, and treatment change these correlation patterns. Additionally, IL-17A tended to be the main mediator for bacteria to induce inflammation in IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0303 CYTOKINE PROFILE IN INFLAMMATORY BOWEL DISEASE PATIENTS: A LASER CAPTURE MICRODISSECTION APPROACH

dini

1Immunomorphology, Institute of Food Sciences-CNR, Avellino/Italy
2Immunomorphology, S.G. Moscowco, Avellino/Italy
3Gastroenterology, Clinic Santa Rita, N. Tacone Foundation, Arpitalia/Italy
4Department Of Intensive Care Unit, Hospital Erasme, Université Libre de Bruxelles, Brussels/Belgium
5Gastroenterology, San Filippo Neri Hospital, Roma/Italy

Introduction: Crohn’s Disease (CD) and Ulcerative Colitis (UC) are two main bowel diseases that, with a complex etiology, including an immune response against microbial and autologous antigens and an imbalance between pro-inflammatory and anti-inflammatory mediators. Different approaches have been used to study the pattern of cytokines in IBD and few data are available on cytokines production in different intestinal compartments. Laser Capture Microdissection (LCM) is a powerful tool for the isolation of specific tissue compartments (1).

Contact Email Address: gmazzarrini@isa.cnr.it

Introduction: MMP9 is involved in the degradation of the extracellular matrix and its expression is elevated in the inflamed tissue of patients with ulcerative colitis (UC) [1-3]. Pre-clinical models of colitis demonstrate a therapeutic benefit from inhibiting MMP9 secreted by colitogenic colitis [4]. Andecaliximab (previously GS-5745) is a high-affinity IgG4 monoclonal antibody against human Matrix Metalloproteinase 9 (MMP9). In a 36-day Phase 1b study in UC, andecaliximab demonstrated clinical efficacy relative to placebo treatment [5]. Here we describe bacterial microbiota analysis of stool samples collected during the Phase 1b study of andecaliximab in UC.

Aims & Methods: The objective of this study is to examine changes to the bacterial microbiota pre- and post-andecaliximab treatment and relative to therapeutic response. Stool was collected for 36 days post-treatment (Baseline) and at the end of the study (Day 36). Clinical response was defined as a Mayo score reduction ≥3 point and ≥30% reduction from baseline score; accompanying decrease in rectal bleeding sub-score of ≥1 or an absolute rectal bleeding sub-score of 0 or Dory was extracted from fecal samples using a modified CTAB method and 16S rRNA amplicon sequencing was performed on 59 samples (27 paired and 5 unpaired samples). Alpha diversity, beta diversity (calculated in QIIME), and taxonomic differences were examined between placebo and andecaliximab-treatment and between response and non-response.

Results: Compared to placebo-treated patients, those who received andecaliximab trended towards decreased alpha diversity (p = 0.06) at 36 days post-treatment. These changes in alpha diversity were not dose related. At Day 36, a trend towards a significant difference in community beta-diversity was observed between the andecaliximab-treated group relative to placebo (p = 0.07). Andecaliximab treatment was also associated with differences in bacterial taxonomy relative to placebo (p = 0.07). Specifically, the genera Clostridium and Akkermansia represented some of the top organisms enriched post andecaliximab treatment relative to placebo. Andecaliximab treatment exhibited a non-significant expansion of Akkermansia from Baseline to Day 36 (p = 0.15). Amongst the changes in the microbial community, these results are unlikely to be pursued in relation to andecaliximab treatment effects, but may be beneficial as a reference for future trials in inflammatory bowel disease.

Disclosure of Interest: B. LaMere: Microbiome data was analyzed and interpreted by UCSF and funded by Gilead Sciences. E.R. Wendt: Employee of Gilead Sciences, Inc. B. Kanwar: Employee of Gilead Sciences, Inc. S.V. Lynch: Consultant for Theravance Sponsored research projects from Sloan Research Foundation, CF Foundation, and IASS. N. Giardullo and G. Iacomini are employees of Gilead Royalties for IP licensed by KaloBios Inc. Founder and Board of Directors, Solita Therapeutics

References

P0303 MUCOSAL CYTOKINE PROFILE IN INFLAMMATORY BOWEL DISEASE PATIENTS: A LASER CAPTURE MICRODISSECTION APPROACH
Aims & Methods: This work was designed to investigate the pattern of cytokines that regulate the mucosal immune response occurring in different intestinal compart-
ments of IBD patients, using LCM technology (1). Frozen sections of colonic biopsies were obtained from 5 patients with active CD, 5 patients with active UC and
5 controls. None of the patients with CD or UC had been ever undergone microarray experiments (E) and inflammatory bowel disease (IBD) (LP) were isolated by LCM, RNA from EP and LP samples were extracted and, after a reverse tran-
scription, RNA levels of TNF-a, IFN-g, IL-17, IL-10 and TGF-b were deter-
mimed by quantitative PCR, using glyceraldehyde 3-phosphate dehydrogenase
(GAPDH) as reference gene. Results: We observed a significant increase in gene expression level of IL-17 in the lamina propria of UC patients respect to CD and controls (p < 0.05). TNF-a, IFN-g, IL-10 and TGF-b levels were significantly higher in the LP of CD as compared to controls (p < 0.05). All the cytokines investigated were not significantly up-regulated in the surface EP of both CD and UC patients, when compared to controls.
Conclusion: Our data show that the LP compartment play a key role in the mucosal immune response in IBD patients. In particular, CD seems to be pro-
minently an innate immune response-mediated disease, which is characterized by an increased production of IFN-g, whereas UC seems to be predominantly an innate immune response-mediated disease, which is characterized by an increased production of IL-17. Concurrently with the pro-inflammatory, response, high amounts of the anti-inflammatory cytokines IL-10 and TGF-b are also produced in CD compared to UC patients, suggesting that in UC patients, the immune-regulatory mechanisms could be impaired. This work underlines the importance of LCM as a valuable tool to determine potential inflammatory components involved in IBD pathogenesis.
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0304 ALTERATIONS IN THE MICROBIAL COMPOSITION IN PATIENTS WITH UC

X. Qiu, H. Zhang
Department Of Gastroenterology, Jiangsu Province Hospital and Nanjing Medical University, Nanjing, China

Contact E-mail Address: qixqinyn2819@126.com

Introduction: The gut microbiota play important roles in the development of the ulcerative colitis (UC). Enough evidence has proven the role of intestinal bacter-
bia in UC pathogenesis has not been fully demonstrated. Aims & Methods: Fungal microbiota from the descending colon mucosal samples from 14 active UC patients and 15 healthy subjects (HS) were analyzed by high-
throughput sequencing method. The expression of pro-inflammatory cytokines (IL-1b, TNF-a, INF-g, IL-6, IL-17a, and IF-23) were up-regulated in UC patients, whereas the expression of anti-inflammatory cytokines (IL-10 and TGF-beta) was significantly lower in UC patients compared to HS. Results: The number of fungi decreased significantly in inflamed mucosal tissue compared to HS counterpart while the Shannon diversity did not show significant differences. Fifteen major genera were examined, among which Wickerhamomyces, unidentifed genus of Saccharomycotales, Aspergillus, Sterigmatomyces, and Candida showed increasing trends, whereas Exophiala, Alternaria, Emeriella, Epicoccum, Acremonium, Trametes, and Penicillium showed decreasing trends in UC patients compared to HS. The pro-inflammatory cytokines (IL-1b, TNF-a, INF-g, IL-6, IL-17a, and IF-23) were up-regulated in UC patients. The genera Wickerhamomyces, Sterigmatomyces, and Penicillium were positively correlated with the expression of several pro-inflammatory cytokines in the colonic mucosa, whereas Nigrospora was negatively correlated. Nigrospora and Sterigmatomyces were positively correlated with the Baron and/or Mayo score. Conclusion: The fungal microbiota in the colonic mucosa of UC patients was different from that of HS. Alterations in fungal composition might be associated with mucosal inflammation and pathogenesis of UC. Further studies are needed to define the fungal composition in detail and identify the role of different fungi in the gut, and determine the mechanism of the host-fungal inter-
action underlying the development of UC.
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
motes fibrosis in a murine model of chronic inflammation. ECCO. 2016.

P0306 CHARACTERIZATION OF GUT MICROBIOMES IN PATIENTS WITH ACUTE COLD SHOCK FOLLOWING ANTIBIOTIC COMBINATION THERAPY USING FECAL METAGENOMIC ANALYSIS

Division Of Research Planning And Development, Nihon University School of Medicine, Tokyo, Japan
Pathogen Genomics Center, National Institute of Infectious Diseases, Tokyo, Japan
Department Of Gastroenterology And Hematology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Toyama, Japan
Department Of Microbiota Research, Juntendo University School of Medicine, Tokyo, Japan

Contact E-mail Address: katuou.kimoto@nihon-u.ac.jp

Introduction: Although the etiology of ulcerative colitis (UC) has yet to be char-
acterized, it is increasingly accepted that the cause of UC might well be related to commensal enteric bacteria in a genetically susceptible patient. Anti-inflamma-
tory drugs and immune system suppressors are usually prescribed for UC treat-
ment, and we previously demonstrated that triple antibiotic combination therapy with oral amoxicillin (1500 mg/day), tetracycline (1500 mg/day) or fosfomycin (3000 mg/day), and metronidazole (750 mg/day) (ATM/AFM), for two weeks, induces remission in more than 27% of patients with active UC including those with steroid-refractory or dependent disease, suggesting ATM/AFM to be possibly effective for achieving UC remission.
Aims & Methods: Thirty-two patients with UC given ATM/AFM therapy for two weeks on average were enrolled in this study. The clinical conditions of these UC patients were evaluated by Mayo score. Fecal samples were obtained prior to, after therapy and at three months after treatment comple-
tion. Gut microbiota were compared employing metagenomic analysis of fecal samples.
Results: Of the 32 patients, 17 and eight, respectively, experienced complete and partial remission over three months in response to ATM/AFM therapy, whereas ATM/AFM showed no efficacy in seven patients. The metagenomic analysis revealed abundant human DNA to correlate positively with the disease activity indicated by the Mayo score. Furthermore, dramatic gut microbiota changes were observed at an early stage, i.e. just two weeks after starting ATM/AFM therapy. Comparison of the metagenomic data suggested that the dysbioses through the expression of Wnt ligands (Mucosal Immunology, 2016). We have recently reported that STAT6 deficiency favours fibrosis in a murine model of TNBS colitis (P031, ECCO 2016).
Aims & Methods: We aim to characterize here the functional relevance of the macrophage phenotype in fibrosis development. WT or STAT6 (-/-) mice were given TNBS (0.5, 0.5, 0.75, 0.75, 1, and 1 mg intrarectally) or saline weekly and they were sacrificed 3, 5 or 7 weeks after the first TNBS administration. The percentage of CD206+CD68+ cells was analyzed by flow cytometry in F4/80+ macrophages isolated from the intestinal mucosa. The mRNA expression of Wnt ligands was evaluated in F4/80+ CD16+ macro-
phages isolated from the mucosa, 7 weeks after the first TNBS administration and results are expressed as fold induction vs vehicle-treated mice. The mRNA expression of CD16 and fibrosis markers were evaluated in the colonic mucosa. The percentage of CD16+ cells was similar between TNBS-WT and TNBS-STAT6 (-/-) mice. In CD16+ macrophages isolated from TNBS-STAT6 (-/-) mice the mRNA expression of canonical and non-canonical Wnt ligands was significantly increased compared with cells isolated from TNBS-WT mice (Table). A positive and significant correlation between CD16 and Vimentin (r = 0.0088*, p = 0.51), a-SMA (r = 0.0044*, r = 0.55) and MMP2 (r = 0.0002*, r = 0.67) was detected in TNBS-STAT6 (-/-) mice but not in WT animals. Table

Conclusion: The expression of Wnt ligands from CD16 positive cells, which are accumulated in the mucosa, may be involved in murine intestinal fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
motes fibrosis in a murine model of chronic inflammation. ECCO. 2016.

P0305 CD16 POSITIVE CELLS, EXPRESSING WNT LIGANDS, ACCUMULATE IN THE MUCOSA AND MEDIATE INTESTINAL FIBROSIS

D. Ortiz-Masiá1, P. Salvador1, D. Macias-Caja2, S. Coll-Puig3, L. Gisbert-Ferrandiz2, C. Hernández2, S. Calatayud4, M.D. Barrachina1
1Dept. De Farmacología, CIBERehd-Univ. de Valencia, Valencia/Spain
2Fisbio, Valencia/Spain

Contact E-mail Address: mdormana@uv.es

Introduction: STAT6 plays a crucial role in M2a macrophage polarization in vitro and these cells mediate mucosal healing in an acute model of TNBS-colitis

Conclusion: We observed a significant increase in gene expression level of IL-17 in the lamina propria of UC patients respect to CD and controls (p < 0.05). TNF-a, IFN-g, IL-10 and TGF-b levels were significantly higher in the LP of CD as compared to controls (p < 0.05). All the cytokines investigated were not significantly up-regulated in the surface EP of both CD and UC patients, when compared to controls.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest:
All authors have declared no conflicts of interest.

Reference
before treatment in the active stage to possibly be associated with increased proliferation of Bacteroides, Parabacteroides, Rickenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Picricickea species. In responders after treatment, populations of Bifidobacterium and Lactobacillus species were significantly increased. In this study, there was an especially strong negative correlation between Bacteroides and Bifidobacterium both before and after treatment.

Conclusion: These results suggested metagenomic analysis results to be associated with a remarkable change in gut microbiota after antibiotic combination treatment. In non-responders in association is associated with increased levels of Neisseria and Lactobacillus species and a decrease in Bacteroides.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0307 GLP-1 EXPRESSING ENTEROENDOCRINE CELL NUMBERS ARE REDUCED AT THE SITE OF ACTIVE DISEASE IN VARIOUS MOUSE MODELS OF INTESTINAL INFLAMMATION

E. Rath1, N. Waldschmidt1, M. Ahmed1, S. Khaloian Sarnagh1, M. Schaebeck1, G. Hörmannsperger1, J. Planchais2, H. Sokol3, D. Haller1

1Chair Of Nutrition And Immunology, Technische Universität München, Freising-Weihenstephan/Germany  
2UMR 1319 Micalis, Jouy-en-Josas/France  
3Avenir Team Gut Microbiota and Immunity, INSERM U1157/UMR CNRS 7203, UPMC; UMR 1319 Micalis: APHP, St Antoine, Department of Gastroenterology, Paris/France

Contact E-mail Address: eva.rath@tum.de

Introduction: Classically, enteroendocrine cells (EEC) are regulated for facilitating gastrointestinal motility, secretion, and insulin levels by release of peptide hormones. Via receptors and transporters, EEC are capable of sensing the lumina propria and luminal environment, including the microbiota, and also mediate immune-related signals. In particular, the L-cell-derived incretin hormone glucagon-like peptide 1 (GLP-1) is increasingly recognized to exert direct effects on immune cells and to orchestrate a metabolic-inflammatory response. In inflammatory bowel disease (IBD), a role for EEC in disease pathogenesis is suggested by the observation that reduced numbers of EEC are associated with reduced numbers of colorectal cancer cells. Moreover, GLP-1 receptors (GLP-1R) are expressed on NETs in a plethora of neutrophil-mediated thromboinflammatory conditions [1-3]. Ulcerative colitis (UC) is characterized by infiltration of neutrophils into the affected mucosa and increased risk of thromboembolic events; however, the mechanism behind the thrombophilic state of UC has not been clearly elucidated yet [4, 5].

Aims & Methods: We aimed to investigate for the first time the role of neutrophils/NETs through TF expression in the pathophysiology of UC. Neutrophils, sera and colon biopsies were obtained from 10 naïve patients with active UC (6 male and 4 female, mean age 34.6 ± 19.1 years, mean Mayo score 8.5 ± 1.4). Furthermore, NETs from UC patients were compared to control NETs obtained from patients suffering from active Crohn disease (CD) (7 male, 3 female, mean age 34.2 ± 18.5, CDAI > 220). Additionally, 10 sex- and age-matched healthy subjects, were served as control subjects (5 male, 5 female, mean age 38.2 ± 15.8). Ex-vivo findings regarding peripheral blood neutrophils and colon tissue specimens were verified using appropriate in-vitro stimulations of control neutrophils with corresponding sera and intestinal tissue-conditioned media, respectively. Identification and quantification of NETs were performed with immunoluminescence confocal microscopy (IHC), flow cytometry, and PCR methods. DNA complex ELISA. The expression of TF on neutrophils/NETs was determined using ICM, qRT-PCR and western blot analysis. The bioactivity of TF on NETs was assessed by measuring thrombin-antithrombin complex levels with ELISA.

Results: Neutrophils from patients with active UC are characterized by increased NET formation in both the peripheral blood and affected colonic mucosa, compared to controls. Furthermore, NETs in UC are decorated with functional human TF and the amount of TF-bearing NETs was reduced from the inflamed to normal colon. In-vitro stimulations of controls neutrophils with sera or intestinal tissue-conditioned media corroborated the findings obtained ex-vivo. 

Conclusion: NETs expressing bioactive TF may be involved in the induction of intestinal inflammation and systemic thrombosis in UC probably constituting a novel candidate diagnostic and/or therapeutic target.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0309 IMPAIRED MITOCHONDRIAL PROTEOSTASIS IS ASSOCIATED WITH MITOCHONDRIAL DYSFUNCTION AND INDUCES PHENOTYPIC TRANSITION OF LGR5 STEM CELLS INTO PANETH CELLS

S. Khaloian Sarnagh1, E. Rath, N. Waldschmidt, I. Gosch, E. Berger, D. Haller  
Chair Of Nutrition And Immunology, Technische Universität München, Freising-Weihenstephan/Germany

Contact E-mail Address: sevana.khaloian@tum.de

Introduction: Recent studies have revealed that the intestinal epithelium is a multicellular interface that is completely renewed every 3–5 days. Pluripotent stem cells reside at the crypt bottom giving rise to transient amplifying cells and subsequently differentiated intestinal epithelial cells (IEC) of all subtypes. Phases of cellular and functional transitions are characterized by distinct metabolic identities, reflected by changes in mitochondrial activity. Alterations in mitochondrial function and mitochondrial unfolded protein response (MT-UPR) activation are associated with various chronic pathologies including inflammatory bowel diseases (IBD) and cancer. We have previously shown that MT-UPR and mitochondrial function itself is involved in the regulation of cell cycle progression and intestinal stemness. Here, we present evidence that impaired mitochondrial proteostasis is sufficient to drive differentiation of Lgr5+ stem cells (ISC) into Paneth cells.

Aims & Methods: To depict the impact of imbalances in mitochondrial proteostasis on ISC, we used mice with a tamoxifen-inducible ISC or IEC-specific conditional knockout allele for the mitochondrial chaperone Hsp60 and the mitochondrial protease Ccp3. Molecular consequences of the gene deletions in the different models were further characterized ex vivo using intestinal organoid culture. In situ hybridization, IHC and combinations of both as well as IF were performed to illustrate alterations of IEC subtypes. Readouts were complemented with single-cell RNA expression and bioinformatic approaches. 

Results: Ccp3-knockout as well as chemical inhibition of the respiratory chain in intestinal organoids led to diminished Lgr5 expression confirming our results from ISC and IEC specific Hsp60-deletion. In vivo, the ISC-specific loss of Hsp60 resulted in a transient drop in Lgr5+ cells with Lgr5 expression being reduced from day 2 after end of tamoxifen treatment and signals reappearing from day 4. Cells positive for the stem cell markers Olfm4 and Hopx expanded at day 2, indicating reserve stem cell populations compensating for the Lgr5- ISC loss. Minimal numbers of Lgr5+ stem cells at day 2 were further paralleled by increased numbers of Lgr5- Paneth cells and no signs of enhanced cell death, indicating differentiation of ISC into Paneth cells. Lgr5- Paneth cells displayed a premature phenotype with diffuse Lyz staining in the cytoplast.
Concomitantly, these cells were positive for the WNT ligand WNT10A and autophagy/mitophagy- associated LC3, suggesting autoregulatory mechanisms for the maintenance of the stem cell niche and mitochondria-associated functional alterations, respectively.

**Conclusion:** Our results indicate that mitochondrial function not only reflects IEC phenotypic changes but seems to be the driving force in differentiation processes. Mitochondrial function might therefore represent a key player at the edge of intestinal tissue homeostasis and repair/healing processes in the context of diseases.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0310** **METABONOMIC PROFILING OF ULCERATIVE COLITIS PATIENTS: RESULTS FROM AN INCEPTION COHORT TIME SERIES ANALYSIS**

R. Misra1, M. Sarafian2, N. S. Ding3, E. Holmes2, G. Faiz2, N. Arebi2

1Gastroenterology, St. Marks Hospital, London/United Kingdom
2Centre For Computational And Systems Medicine, Imperial College, London/United Kingdom
3Gastroenterology, St. Vincent's Hospital, Melbourne/Australia

**Aims & Methods:** We aimed to examine the metabolic profile in a newly diagnosed cohort of UC patients recruited from St. Marks Hospital, London, UK. Patients were stratified by ethnicity (SA, Caucasian, Other), treatment (None, 5-ASA, Azathioprine and Steroids) and disease duration. Healthy controls (HC) were recruited locally among the staff at St. Marks Hospital. Biofluids (urine, faeces and serum) were collected at diagnosis (time point 1; months 0–3) and 2 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Metabonomics analysis was applied according to principal component analysis (PCA) and orthogonal partial least squares -discriminant analysis (OPLS-DA) for small metabolites (hydrophilic liquid chromatography, HILIC) and for bile acids (BA) platforms. Univariate (UV) and multivariate (MV) data analysis was implemented to build models using principle component analysis (PCA) and orthogonal partial least squares -discriminant analysis (OPLS-DA) to find metabolites that were expressed in significantly different concentrations between SA and Caucasian groups. There are several possible reasons but two important factors are differing microbial metabolism and diet between the two groups. We are conducting further studies incorporating dietary data and 16S microbial analysis in this cohort. In combination with matching disease extent (left-sided vs colonic disease) may help to identify possible explanations for the different disease phenotype in this group.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0311** **BASELINE CLINICAL AND ENDOSCOPIC FEATURES OF ULCERATIVE COLITIS PATIENTS ARE RELEVANT GUIDE FOR SELECTING RESPONDERS TO SELECTIVE DEPLETION OF MYELOID LINEAGE LEUCOCYTES AS REMISSION INDUCTION THERAPY**

T. Tanaka1, M. Akagi2, A. R. Saniaibadi3, H. Goish3, T. Iiboshi4, T. Kajihara4, T. Miura1

1Akita Prefectural Hospital, Hiroshima/Japan
2Akita Hospital, Hiroshima/Japan
3JIMRO, Takasaki/Japan

**Introduction:** Patients with active inflammatory bowel disease have elevated myeloid lineage leucocytes1 including the CD14+CD16+ DR+E phenotype known as proinflammatory monocytes, and a major source of tumour necrosis factor-α.2 Accordingly selective depletion of myeloid leucocytes by granulocyte/monocyte apheresis (GMA) is expected to promote remission or enhance drug efficacy. However, studies in ulcerative colitis (UC) patients have reported contrasting efficacy outcomes, ranging from an 85%3 to statistically insignificant level.4 Patients’ baseline demographic features may guide to selecting responder patients.

<table>
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<tr>
<th>Mass (m/z)</th>
<th>Biofluid</th>
<th>Univariate (UV) or Multivariate (MV)</th>
<th>Change**</th>
<th>p-value</th>
<th>Compound</th>
<th>Pathway</th>
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<td>Release of gut hormones from endocrine system</td>
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**BILE ACIDS**

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<th>Univariate (UV) or Multivariate (MV)</th>
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<th>p-value</th>
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<td>Primary bile acid</td>
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<td>Deoxycholic acid</td>
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**Disclosure of Interest:** All authors have declared no conflicts of interest.
P0312 THE EFFECTS OF GLIAL-DERIVED NEUROTROPHIC FACTOR PRODUCED BY ENTERIC GLIAL CELLS ON DENDRITIC CELL AND ITS ROLES IN DEXTRAN SULPHATE SODIUM INDUCED COLITIS

Y. Huan
West China School of Medicine of Sichuan University, Chengdu/China

Contact E-mail Address: yuhuan86@126.com

Introduction: Much research has demonstrated that tolerogenic dendritic cell (DC) and the capacity to induce regulatory T cells (Treg) play an important role in maintaining immune tolerance and has been proposed for treatment of inflammatory bowel disease (IBD). In this study, we report on the use of glial-derived neurotrophic factor (GDNF) produced by enteric glial cells (EGCs) as a new approach to induce tolerogenic DCs with capacity to generate Treg, to restore immune tolerance in vivo, and to ameliorate experimental colitis.

Aims & Methods: DCs were generated from rat bone marrow (BMDC) in the absence or presence of GDNF (DCGDNF) and additionally stimulated with LPS to induce maturation (mDC). The expression of major histocompatibility complex II (MHC-II), CD40, CD80, and CD86 was determined by flow cytometry. Levels of IFN-γ, interleukin-4 (IL-4), and IL-10 in the culture supernatants were determined by ELISA. The induction of GDNF receptor-α1 (GFR-α1) in DCs was detected by immune-fluorescence staining. The expression of GFR-α1 and ERK1/ERK2 in DCs was tested by Western Blot. SD rats were fed with 5% Dextran Sulphate Sodium (DSS) to induce experimental colitis, the colitis induction therapy was examined. The clinical signs of the disease including weight loss, diarrhea, colitis, histopathology were evaluated, and the mechanisms involved in the potential therapeutic effect of DCGDNF, such as inflammatory cytokines and chemokines (IL-4, IFN-γ, TNF-α, IL-1β, IL-17), the generation of IL-10–secreting Treg (Treg1), and the level of Treg1/Th2 demonstrated a higher level of Treg1/Th2 was investigated.

Results: GFR-α1 was expressed in BMDC, and the expression of GFR-α1 was significantly up-regulated after treatment with GDNF. DCGDNF did not up-regulate MHC-II, CD40, CD80, and CD86, and induced very low levels of proinflammatory cytokines (IFN-γ, IL-6) but secreted significant levels of the anti-inflammatory cytokine IL-10 after LPS stimulation, as compared with DCcontrol. CD4 T cells primed with DCGDNF resulted in weak proliferation and exhibited a Tr1-like cytokine profile, which characterized by IL-10; whereas DCcontrol induced a strong proliferation, exhibited a phenotype characterized by IFN-γ, IL-4. DCGDNF injection significantly ameliorated weight loss, diarrhea, and colonic histopathologic injury in rat, and DCGDNF injection strikingly reduced the production of inflammatory factors such as IL-4, IFN-γ, TNF-α, IL-1β, and IL-17, generated Treg1 with suppressive capacity on autoreactive T cells, and demonstrated a higher level of Treg1/Th2, Treg1/Th17.

Conclusion: GDNF could induce tolerogenic DCs through ERK1/ERK2 signal pathway, and DCGDNF could alleviate the severity of DSS induced colitis in rats. The mechanism may be related to down-regulation of inflammatory and immune response, generating Treg1 and restoring immune tolerance.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0313 DETERMINANTS OF REDUCED GENETIC CAPACITY FOR BUTYRATE SYNTHESIS BY THE GUT MICROBIOME IN CROHN’S DISEASE AND ULCERATIVE COLITIS


1School Of Microbiology, APC Microbiome Institute-University College Cork, Cork/Ireland
2Department Of Laboratory Medicine, Virgen de la Salud Hospital, Toledo/Spain
3School Of Microbiology & School Of Pharmacy, APC Microbiome Institute-University College Cork, Cork/Ireland
4School Of Biochemistry & Cell Biology, APC Microbiome Institute-University College Cork, Cork/Ireland

Introduction: Alterations in short chain fatty acid (SCFA) metabolism have been reported in inflammatory bowel disease (IBD). Among SCFA, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health1. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small study numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as a key environmental factor influencing IBD2, and butyryl-CoA:Acetate-CoA-transferase (BCoAT) is considered the main enzyme involved in butyrate synthesis by gut microbiota3.

Aims & Methods: We performed a comparative assessment of the capacity of the microbiota for butyrate synthesis by quantifying BCoAT gene content in stool from patients with Crohn’s disease (CD; n = 71), ulcerative colitis (UC; n = 58) and controls (n = 75), and determined whether it was related to disease activity, inflammatory, microbial diversity and composition and/or dietary habits. BCoAT gene content was quantified by qPCR. Disease activity was assessed clinically and faecal calprotectin concentration measured as biomarker of inflammation in the gut. Microbial composition was determined by sequencing 16S rRNA gene. Dietary data were collected using an established food frequency questionnaire.

Results: Reduced butyrate-synthetic capacity was found in patients with active and inactive CP (p < 0.001 and p < 0.01, respectively), but only in active UC (p < 0.05). In patients with UC, low BCoAT gene content (below 9.5 log10 copies BCoAT/g) was associated with active disease, increased inflammation, lower microbial diversity, greater microbiota compositional change and decreased butyryloxigenic taxa, while no major changes were observed between patients with UC grouped according to BCoAT gene levels. Reduced BCoAT gene content in patients with CD was, in part, linked with lower intake of certain foods containing fibre (vegetables, fruits, high-fibre cereals, brown/wholemeal bread and nuts).

Conclusion: Reduced butyrate-synthetic capacity by the microbiota is more evident in CD than UC and may relate to reduced fibre intake. The results suggest that simple replacement of butyrate per se may be therapeutically inadequate, whereas manipulation of microbial synthesis perhaps by dietary means may be more appropriate and profitable for patients with CD.

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M.J. Claesson: Dr Marcus Claesson has received research funding from Second Genome. All other authors have declared no conflicts of interest.

References
P0315 ANTI-INFLAMMATORY EFFECTS OF G PROTEIN- COUPLED RECEPTOR 18 – A NOVEL POTENTIAL THERAPEUTIC TARGET IN INFLAMMATORY BOWEL DISEASE

A. Fabisiak1, N. Fabisiak1, M. Zelinska1, A. Mokrowiecka1, E. Małecka-Pranas2, R. Kordel3, K. Kiecz-Kononowicz4, J. Fichal3

1Department of Biochemistry, Medical University of Lodz; Lodz/Poland
2Department of Digestive Tract Diseases, Medical University of Lodz; Lodz/Poland
3Department of Pathology, Medical University of Lodz; Lodz/Poland
4Department of Technology And Biotechnology Of Drugs, Jagiellonian University, Krakow/Poland

Contact E-mail Address: adam.fabisiak@stud.uned.lodz.pl

Introduction: Inflammatory bowel disease (IBD) is a group of gastrointestinal tract diseases consisting mainly of Crohn’s Disease (CD) and Ulcerative Colitis (UC). Various etiological factors contribute to the pathogenesis of IBD, including modulation of microbiota, epithelial barrier disruption, genes and environment. Recently, the treatment of both diseases comprises several groups of drugs the choice of which is made based on disease activity and extent. The treatment options include: analogs of 5-aminosalicylic acids, glucocorticoids and other immunosuppressive drugs such as azathioprine. Biological therapy with anti-tumor necrosis factor alpha (TNF-α) are considered when conventional therapy fails. In portion of patients surgical approach is necessary. Therefore novel pharmacological targets are sought in order to improve the remission rate with anti-tumor necrosis factor therapy. In this context, the expression of GPR18 (Coupled Receptor 18 receptor of the endogenous cannabinoid system family which may be implicated in the indices after treatment with the agonist. We also showed that GPR18 is expressed in the colon of patients with IBD.

Aim: To assess the anti-inflammatory and anti-microcobic actions of GPR18 in the intestinal inflammation.

Methods: GPR18-dependent colonic mucus secretion was regulated by exogenous endocannabinoids, which already earned its place in the pathogenesis of IBD. GPR18 was found to be implicated in protection against bacterial infection and organ injury. Reports indicate that it may also be connected to the obesity/diabetes-related inflammation. As we lack data regarding its association with intestinal inflammation we attempted to shed some light on this phenomenon.

Aims & Methods: We aimed to clarify how GPR18 affects the gut microbiota and the pathology of colitis. Mice were gavaged with ampicillin (ABPC), vancomycin (VCM), and neomycin or a combination of ABPC, VCM, and neomycin (A-V) for three consecutive days. Colitis was assessed by fecal occult blood test (FOBT) and mRNA level of cytokines. Metabolites and short chain fatty acid (SCFA) in the feces were measured by a chromatography-tandem mass spectrometry. Fecal microbiota was determined by 16S rRNA sequencing and metagenome analysis.

Results: In mice treated with A-V, GPR18 antagonist PSB-KK-1415 secreted butyric acid. Decreased inflammation indices. Study in the mouse model of TNBS-induced colitis demonstrated that GPR18 is another receptor of the endogenous cannabinoid system family which may be implicated in the pathogenesis of IBD and intestinal inflammation overall.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0318 APPLICATION OF NEW SINGLE NUCLEOTIDE POLYMORPHISMS TO THE IDENTIFICATION OF ADHERENT-INVASIVE E. COLI (AIEC)

Biology Department, Universitat de Girona, Girona/Spain
Contact E-mail Address: c.camprubi4@gmail.com

Introduction: This thesis constitutes an adherent-invasive Escherichia coli (AIEC), a pathotype associated with Crohn’s disease, still needs to be deciphered. Obtaining new molecular tools for AIEC identification would be of great significance, as current techniques based on phenotypic screening of cultured bacteria are time consuming (1).

Aims & Methods: Our aims were: (i) to search for genetic elements putatively involved in the AIEC phenotype in order to find specific signature sequences and (ii) to determine the distribution of these elements to assess their usefulness in AIEC identification. AIEC-specific sequences were identified through comparison of genomes of three E. coli strain pairs (from different phylogroups) displaying different AIEC phenotype but identical pulsetype. Pair-end libraries of Illumina HiSeq and PacBio of the six strains’ genomes were combined de novo and assembled by SPAdes. Differences in gene content between pairs were accomplished with OrthoVenn. Harvest was performed to compare strain pairs against an AIEC reference genome (UM146). Only non-synonymous single nucleotide polymorphisms (SNPs) between the strains of the D-phylogroup pair, 17 in the B2-pair and 30 in the B1-pair that met the selection criteria. Of those, 24 SNPs (found in 13 genes) were confirmed and further analysed in the strain collection. Three of the SNPs encompassing genes were related with adhesion/invasion and two with stress tolerance. Three SNPs resulted in differential nucleotide distribution between AIEC and non-AIEC strains, respectively. After a median follow-up of 8.6 years, clinical recurrence was seen in 57%, and surgical recurrence in 26%. A significantly increased recurrence rate was seen in patients with active inflammation at the distal resection margin whereas recurrence rates were comparable for inflammation at the proximal site and radical surgeries (87%, 61%, and 50% respectively, p < 0.001). Active inflammation at the distal resection margin (HR: 3.189 (1.635–6.220); p = 0.001) and smoking (HR: 2.502 (1.331–4.703; p = 0.004) were the only independent predictors for clinical recurrence. The incidence of surgical small bowel to perianal fistulas was much higher in patients with previous AIEC-related disease, in particular women.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: No authors have declared no conflicts of interest.
incident rate of microscopic colitis appeared to increase with time (Table). The incidence of microscopic colitis in 2016 was twice that observed in 2009 (incidence rate ratio 1.86; 95%CI 1.41, 2.46). There was a strong, independent graded association between the incidence of microscopic colitis and the number of lower GI endoscopy procedures undertaken (p = 0.03).

Conclusion: Microscopic colitis diagnosis is becoming more common. It is unclear whether microscopic colitis itself is increasing or greater numbers of lower GI endoscopy are being undertaken causing an ascertainment bias. Further work is required to explore environmental exposures such as drugs associated with microscopic colitis and to observe its natural history.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0321 EXTRA-INTESTINAL MANIFESTATIONS AT DIAGNOSIS IN PAEDIATRIC- AND ELDERLY-ONSET UCERATIVE COLITIS ARE ASSOCIATED WITH A MORE SEVERE DISEASE OUTCOME: A POPULATION-BASED STUDY
D. Duricova1, A. Leroyer1, G. Savoye2, H. Sarter1, B. Pariente3, D. Aoucheta4, L. Armengol-Debeir2, D. Ley3, D. Turck5, L. Peyrin-Biroulet6, C. Gower-Rousseau3, G. Savoye4, H. Sarter3, C. Yzet1, M. Kohut5, F. Brazier3, D. Chatelain6, E. Nguyen-Khac1, J. Dupas7, M. Fumery7
1. Public Health, Epidemiology And Economic Health, Registre Epimad, Maison Regionale De La Recherche Clinique, Lille University and Hospital, Lille/France
2. Gastroenterology Unit, Epimad Registry, Ho ˆpital Charles Nicolle, Rouen University Hospital, Rouen/France
3. Gastroenterology Unit, Hôpital Huriez, Lille University Hospital, Lille/France
4. Associated Medical Director Gastro-Immunology at MSD, Paris/France
5. Division of Gastroenterology, Hepatology and Nutrition, Department of Paediatrics, Lille University Jeanne de Flandre Children’s Hospital, University of Lille, Lille/France
6. Gastroenterology Unit, Inserm U954, Nancy University and Hospital, Nancy/France
7. Gastroenterology Unit, Inserm U954, Nancy University and Hospital, Nancy/France

Contact E-mail Address: mathurinfumery@gmail.com

Introduction: Data on extra-intestinal manifestations (EIM) and their impact on disease course of ulcerative colitis (UC) in population-based cohorts are scarce, particularly in paediatric- and elderly-onset UC patients.

Aims & Methods: The aims of this population-based study were to assess 1) the occurrence of EIM in paediatric- and elderly-onset UC; and 2) their impact on long-term disease outcome. Paediatric-onset (<17 years at diagnosis) and elderly-onset UC patients (>60 years) from a French prospective population-based Registry (EPIMAD) were included. Data on EIM and other clinical factors at diagnosis and at maximal follow-up were collected.

Results: 158 paediatric- and 470 elderly-onset patients were included (median age at diagnosis 14.5 and 68.8 years; median follow-up 11.2 and 6.2 years, respectively). EIM occurred in 8.9% of childhood- and 3% of elderly-onset patients at diagnosis and in 16.7% and 2.2% of individuals during follow-up (p < 0.01). The most frequent EIM was joint involvement (15.8% of paediatric-onset and 2.6% of elderly-onset). Presence of EIM at diagnosis was associated with more severe disease course (need for immunosuppressive or biologic therapy or colectomy) in both paediatric- and elderly-onset UC (HR = 2.0, 95%CI: 1.0-4.2 and HR = 2.8, 0.9-7.9). Extensive colitis was another independent risk factor in both age groups.

Conclusion: Elderly-onset UC patients had lower risk of EIM either at diagnosis or relapse compared to pediatric-onset UC patients. All authors have declared no conflicts of interest.

P0322 LONG-TERM NATURAL HISTORY OF MICROSCOPIC COLITIS: A POPULATION-BASED STUDY
J. Loreau1, D. Duricova2, C. Gower-Rousseau2, G. Savoye3, H. Sarret3, C. Yazel1, M. Kohut2, F. Brazier3, D. Chatelain4, E. Nguyen-Khac1, J. Dupas2, M. Fumery1
1. Amiens University Hospital, Amiens/France
2. Ibd Clinical And Research Center, ISCAR E.V.F. a.s., Prague/Czech Republic
3. Public Health, Epidemiology And Economic Health, Registre Epimad, Maison Regionale De La Recherche Clinique, Lille University and Hospital, Lille/France
4. Gastroenterology Unit, Epimad Registry, Hospitale Charles Nicolle, Rouen University Hospital, Rouen/France
5. Clinique St Isabelle, Abbeville/France
6. CHU, Amiens, France, Amiens/France
7. Gastroenterology Unit, Epimad Registry, CHU Amiens Sud, Avenue Laennec-Sauloen, Amiens University Hospital, Amiens/France

Contact E-mail Address: jloreau@yahoo.com

Introduction: Data on long-term natural history of microscopic colitis (MC), including collagenous (CC) and lymphocytic colitis (LC) are lacking.

Aims & Methods: All new cases of UC diagnosed in the Somme area, France between January 1st, 2005 and December 31th, 2007 were prospectively included. Colonoscopic biopsies from all patients were reviewed by a group of 4 expert gastro-intestinal pathologists to assess the diagnosis of CC or LC. Demographic and clinical data were retrospectively collected from diagnosis to February 31th, 2017.

Results: One hundred and thirty cases of MC, 87 CC and 43 LC were included (median age at diagnosis 70 and 48 years, respectively). The median follow-up was 9.6 years (Q1 = 7.6; Q3 = 10.61). By the end of follow-up, 37 patients (28%) developed steroid-dependency, 21 patients (16%) were hospitalized for a disease flare and 32 (25%) presented with another disease flare. Sixteen patients (22%) developed steroid-dependency and 4 (5%) were corticosteroid-resistant. Only one patient was treated by immunosuppressants. By the end of follow-up, 37 patients (28%) developed steroid-dependency, 21 patients (16%) were hospitalized for a disease flare and 32 (25%) presented with another disease flare. Sixteen patients (22%) developed steroid-dependency and 4 (5%) were corticosteroid-resistant. Only one patient was treated by immunosuppressants.

Conclusion: This population-based study showed that after diagnosis, two third of patients with MC observed long term clinical remission. Age at diagnosis and disease exposure (HR 0.40; 95%CI, 0.18–0.90; p = 0.02) and budesonide exposure (HR 0.64; 95%CI, 0.18–0.90; p = 0.03) were significantly associated with relapse.

Disclosure of Interest: M. Fumery: Lecture fees or consultant fees: Abbvie, Ferring, MSD, Takeda.

All other authors have declared no conflicts of interest.

P0323 IBD-INFO QUESTIONNAIRE: A MULTICENTER FRENCH UP-TO-DATE SURVEY OF PATIENT KNOWLEDGE IN INFLAMMATORY BOWEL DISEASE
P. Danion1, A. Buisson2, X. Robin3, N. Mathieu4, A. Charlois5, N. Willer6, E. Del Fedele1, B. Flourié7, S. Nuncy7, G. Boscetti7
1. Gastroenterology, Lyon-Sud University Hospital, Pierre Benite/France
2. Dept. Of Gastroenterology, Chu Estuing Clermont-Ferrand, Clermont-ferrand/France
3. CHU Saint-Etienne, Saint-Etienne/France
4. CHU Grenoble, Grenoble/France

Contact E-mail Address: pauline.danion@chu-lyon.fr

Introduction: It has been demonstrated in many chronic conditions, including inflammatory bowel disease (IBD), that better patients’ knowledge about pathology and treatment improves the course and management of disease. The aim of this study was to develop an updated self-questionnaire to assess patients’ level of knowledge of IBD.

Aims & Methods: The IBD-INFO included 3 parts: an original part (Q1), and 2 parts from the translation of the pre-existing questionnaires Crohns’ and Colitis Knowledge score (CCKNow) (Q2) and Crohn’s and Colitis Pregnancy Knowledge score (CCPKNow) (Q3). The reliability and discriminatory ability of the questionnaire were validated with 3 groups of non-IBD volunteers with various theoretical knowledge levels. The final questionnaire (64 validated questions) was then tested on 364 in- and out- IBD patients from 4 French university hospitals. The score for each part of the questionnaire was calculated and factors associated with low scores were identified by uni- and multivariate logistic regression analyses.

Results: The scores obtained by the 3 non-IBD volunteer groups differed significantly (p < 0.0001) and the IBD-INFO questionnaire showed excellent internal reliability and consistency (α = 0.98). The median total score obtained by the IBD patients was 27/64 [0–59], and scores for Q1, Q2 and Q3 were, respectively, 10/23
Investigation of the average disease activity in 5-year-intervals in UC patients

F. Cordes

STUDY WITH MATCHED COHORTS

THE DISEASE COURSE IN PATIENTS WITH INFLAMMATORY

P0324 IMPACT OF PRIMARY SCLEROSING CHOLANGITIS ON

the incidence of UC-PSC and CD-PSC patients was assessed. Data were evaluated using standard statistical methods. In matched-pair analyses, IB patients with and without PSC were matched at the ratio of 3:1 by sex, disease entity, age at diagnosis, time from diagnosis to first presentation, and duration of follow-up.

Time to event analysis was performed using survival analytic methods including Kaplan-Meier method and Log-rank test.

Results: PSC was diagnosed in 77 and 10 patients out of 781 UC (9.8%) and 1033 CD patients (1.0%), respectively. Age at UC onset was significantly lower in UC-PSC patients than in patients without PSC (23.3 vs. 29.3 years; p = 0.001). Extensive disease manifestation was observed in 46% of UC patients, whereas pancolitis was more frequently diagnosed in UC-PSC patients (75%, p = 0.001). Concerning CD, all patients with coincident PSC showed colonic involvement, while only 69% of the CD patients without PSC had colonic manifestation (p = 0.044). Interestingly, IB patients without PSC presented more frequently with active disease, as compared to IB-PSC patients (p = 0.036; p = 0.055), respectively. Convenietly, average disease activity assessed by complete Mayo score, was significantly higher in UC patients with acute flare as compared to UC-PSC patients (7.3 vs. 6.2; p < 0.001).

Investigation of the average disease activity in 5-year-intervals in UC patients revealed a stronger disease activity in UC patients without PSC, especially within the first 10 years after UC onset. Furthermore, biological therapy including vedolizumab and anti-TNF antibodies was initiated more frequently (25% vs. 0.05% to 0.084) and earlier (20.4 vs. 28.6 years after onset, respectively) in UC without PSC than in those with coincident PSC. Colorectal high grade intraepithelial neoplasia (HGIEN) and CRC were detected in 25 IB patients without PSC and in 7 IB-PSC patients (4 UC and 3 CD patients) (1.45% vs. 8.00%). Of note, in IB-PSC patients, HGIENCRC occurred significantly earlier than in IB patients without PSC (20-year-risk: 9.6% vs. 5.6%; p = 0.003).

Conclusion: In our large cohort study, IB patients with coincident PSC showed a distinct disease course with less relapse, lower disease activity, but earlier disease onset and higher risk for extensive disease manifestation as well as increased risk for colorectal dysplasia development.

Disclosure of Interest: All authors have declared no conflicts of interest.
There was a similar, significant increase for codeine (chi2 for trend, p analysis. in patients with inflammatory bowel disease in the English primary care database. for prescriptions of tramadol at any prescription density in CD or UC. associations were for heavy users of strong opiates in patients with CD (HR 2.18, patients with IBD. Any opiate use in patients with UC was associated was with surgery, biological therapy and hospitalization after 1 and 5 years follow-up in the EpiCom-cohort). We included 3517 patients with CD and 5349 with UC. Opiate prescribing for cancer and non-cancer pain has increased dramati- shortly in recent years but there is a paucity of data on prescription trends for individuals with IBD. The only population-based study is from Canada where 5% of subjects with IBD became heavy opiate users after 10 years of diagnosis and there was a strong association between heavy opiate use and mortality (OR 2.91, 95% CI 1.58–5.02). In this study we explore trends in the prescription of opiate medications and assess the association between prescription and mortality in English primary care cohort of patients with IBD. we defined 3 groups of prescription density as none/infrequent users, moderate and heavy users as < 1, 1–3 and > 3 prescriptions per calendar year respectively. We examined the trend in opiate prescriptions for all IBD patients in 4 year blocks from 1990-2014 using chi2 for trend as a significance. Separate trends were produced for each of our opiate classes. We calculated a propensity score estimating the conditional probability of being prescribed an opiate medication based on pre-defined characteristics which may influence the prescription of opiates. All analyses were performed for each opiate medication class in CD and UC patients. Results: We included 3517 patients with CD and 5349 with UC. Opiate prescrip- tions increased from 10% in 1990 to 30% in 2014 (chi2 for trend p < 0.005). There was a similar, significant increase for codeine (chi2 for trend, p = 0.008), tramadol (p < 0.005) and strong opiates (p < 0.005) when analyzed separately. Table 1 shows the association between opiate use and all-cause mortality in patients with IBD. Any opiate use in patients with UC was associated with increased mortality ((HR 1.67, 95% CI 1.25–2.23). The strongest associations were for heavy users of strong opiates in patients with CD (HR 2.18, 95% CI 1.20–3.95) and UC (HR 3.30, 95% CI 1.77–6.18). There was no association for prescriptions of tramadol at any prescription density in CD or UC. Table 1: – The association between opiate prescription and all-cause mortality in patients with inflammatory bowel disease in the English primary care database Research One. Propensity score matched, Cox proportional hazards regression analysis. Any opiate medication

Crohn’s disease Hazard ratio (95% CI) Ulcerative colitis Hazard ratio (95% CI)

None/infrequent use (< 1 prescription per year) 1 1
Moderate use (1–3 prescriptions per year) 1.04 (0.84–1.29) 1.12 (0.98–1.28)
Heavy use (≥ 4 prescriptions per calendar year) 1.15 (0.85–1.55) 1.67 (1.25–2.23)

Table 1 Continued

Crohn’s disease Hazard ratio (95% CI) Ulcerative colitis Hazard ratio (95% CI)

None/infrequent use (< 1 prescription per year) 1 1
Moderate use (1–3 prescriptions per year) 1.10 (0.89–1.36) 1.10 (0.89–1.36)
Heavy use (≥ 4 prescriptions per calendar year) 1.20 (0.97–1.48) 1.20 (0.97–1.48)

Table 1 Continued

None/infrequent use (< 1 prescription per year) 1 1
Moderate use (1–3 prescriptions per year) 1.09 (0.86–1.37) 1.10 (0.89–1.36)
Heavy use (≥ 4 prescriptions per calendar year) 1.21 (0.98–1.48) 1.21 (0.98–1.48)

Table 1 Continued

Conclusion: Our study is the largest population based study of opiate use in patients with IBD. We have shown a significant increase in the prescription of opiates since 1990, with 30% being prescribed an opiate medication between 2010 and 2014. Prescriptions of codeine in UC and strong opiates in both CD and UC were associated with increased all-cause mortality. There appears to be a dose association as heavy users of strong opiates had the largest association with mortality. Observational studies are not proof of causality and there may be residual confounding. A dose response is a strong indicator that opiates could be responsible for the associations seen, which is consistent with other studies investigating opiates used for non-cancer pain in chronic disease. Randomised controlled trials would be unethical and not feasible to investigate this potential effect so population-based observational studies may provide the best estimate. Opiate prescriptions are increasing worldwide for chronic non-cancer pain, and individuals with IBD can now be included. Clinicians managing pain in individ- uals with IBD should consider the potential implications of prescribing, or continuing with opiate prescriptions as they are a marker for increased mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In a prospective 6-months study, dental examination was performed in IBD and in 19 healthy controls. IBD related variables were prospectively collected, as well as markers for periodontitis including gingival bleeding (BOP index, marker of periodontal inflammation), gingival recession (REC index, marker of cumulative periodontal destructions) and probing depth (the severity of gingival inflammation). Additional dental examination was proposed 3 months after to all patients diagnosed with periodontitis.

Results: Among the 54 included patients, 44 had Crohn disease (81%) and 31 were women (55%). At the time of dental examination, median age was 33 years (Q1 = 26; Q3 = 41), 20 (36%) were smokers and the median IBD duration was 8.4 years (3.4–16.3). Eleven (20%) were treated by corticosteroids, 27 (49%) by anti-TNF, 6 (10%) by other biologies and 8 had no IBD treatment. IBD was significantly associated with periodontitis (81% vs 27%; Odds Ratio 2.9, 95% CI: 1.6–3.2). Mild, moderate and severe periodontitis were respectively observed in 34 (63%), 8 (15%) and 3 (5%) IBD patients. As compared to healthy controls, IBD patients had significant increase of BOP index (p = 0.008), probing death (p = 0.03), and REC index (p = 0.01). Patients with active IBD (Harvey Bradshaw index > 3 or Mayo Score > 1) had a significant increase of BOP index (p = 0.007) as compared to patients with inactive disease. A significant correlation between BOP and Harvey-Bradshaw index was observed (r = 0.44, p = 0.0018). Anti-TNF therapy was significantly associated with lower BOP index (p = 0.02). All patients with diagnosis of periodontitis were treated by periodontal debridement and subgingival irrigation with pidovone-iodine which led to a significant decrease of BOP index three months after diagnosis.

Conclusion: Inflammatory bowel diseases were associated with an increased risk of periodontitis. Gingival inflammation was correlated to disease activity and anti-TNF therapy was associated with a lower risk of active periodontal disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0329 GENETIC ASSOCIATIONS OF INFLAMMATORY BOWEL DISEASE IN SRI LANKA: A CASE-CONTROL STUDY OF PHENOTYPES AND SELECTED GENETIC POLYMORPHISMS
M. A. Nirilla1, K. S. Kodisinghe1, A. P. De Silva1, N. Rajapakshe2, S. D. Nanayakkara1, D. P. Lambrick3, J. De Silva1, N. M. Navarathn2, A. S. Mustafa5
1 University, Safat/Kuwait
2 Microbiology, Faculty of Medicine, Kuwait University, Safat/Kuwait
3 Research Core Facility, Omics Research Unit, Faculty of Medicine, Kuwait University, Safat/Kuwait
4 Human Genetic Research Center, Al-Amin Hospital, Safat/Kuwait
5 Medicine, Faculty of Medicine, Kuwait University, Safat/Kuwait

Contact Email Address: isididique@hsc.edu.kw

Introduction: Crohn’s disease is a chronic, immune mediated inflammatory condition which affects the gastrointestinal tract. NOD2/Card15 mutations have been linked to an increased risk of Crohn’s disease and to some of its phenotypes. This study aimed to determine the presence of the above mutations in Arab patients suffering from Crohn’s disease in Kuwait.

Aims & Methods: Blood samples were obtained from 103 Arab patients with Crohn’s disease and 100 Arab control subjects. The genomic DNA was isolated from the samples using Qagen DNA Blood mini kit. The isolated DNA were used in Polymerase Chain Reaction (PCR) using four sets of primers specific for the mutations in the NOD2/Card15 sequence of 17 (16.5%) Arab patients with Crohn’s disease compared to 32 (32.0%) normal controls (p < 0.05). This difference was statistically significant if the mutation was heterozygous (p < 0.001) but not in homozygous. This mutation in rs2066845 (SNP8, Exon 8227G > C) was found in 24 (23.3%) patients and 10 (10.0%) controls (p < 0.05). This difference was statistically significant if the mutation was homozygous (p < 0.05) but not in heterozygous. The mutation in rs2066844 (SNP8, Exon 8202C > T) was found only in one patient and no controls and rs2066847 (SNP13, Exon 11302mc) was not detected in any of the patients or controls. Table 1. Mutations in SNP5, SNP8, SNP12 and SNP13 of the NOD2/Card15 gene in Arab patients with Crohn’s disease and control subjects.

Conclusion: The results suggest that mutations in SNP5 and SNP13, Exon 8227G > C occurs more frequently in Arab patients with Crohn’s disease compared to controls, but the disease is associated only with the homozygous mutation. The mutation in rs2066842 (SNP5, Exon 802C > T) occurs more frequently in controls compared to patients and the heterozygous mutation appears to have a protective effect against Crohn’s disease in the Arab population. Mutations in rs2066844 (SNP8, Exon 8202C > T) and rs2066847 (SNP13, Exon11302mc) were not seen in this population.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Among the numerous genetic factors associated with ulcerative colitis (UC), an increasing attention has been paid to the polymorphisms of the vitamin D receptor gene (VDR) associated with disorders of innate and adaptive immunity, as well as the barrier function of the intestinal epithelium. However, the results of studies on the prevalence, clinical, diagnostic and prognostic significance of polymorphisms of the VDR gene in different populations are ambiguous and contradictory. In particular, associations of Bsm I polymorphism of the VDR gene with UC in the Chinese population and in the Jewish Ashkenazi has been found, while in the Irish population, with a sufficient prevalence of Bsm I polymorphism, this association is absent [1–3]. In the Russian Federation, there is no data on the prevalence, clinical, diagnostic and prognostic significance of Bsm I polymorphism of the VDR gene with UC. These circumstances determined the purpose and objectives of this study.

Aims & Methods: The purpose is to assess the clinical, diagnostic and prognostic significance of Bsm I polymorphism of the VDR gene (rs154440) in UC among the residents of the Kemerovo region of the Russian Federation. The study included 76 patients with UC and 85 controls. Genotyping was performed by PCR method (“SNPexpress” reagents, Lytech Co., Ltd., Russia) with electrophoretic separation of amplification products. Statistical analysis was performed using the X2 and Mann-Whitney tests. In the presence of statistically significant differences (p < 0.05), odds ratios (OR) with 95% confidence interval (CI) were calculated.

Results: It was found that the frequency of the allele B polymorphism of the VDR Bsm I gene was higher among patients with UC than in the control group (44% vs. 26%, p = 0.02), which increases the risk of this pathology by 2.2% (95% CI: 1.2-4.1). In the case of carriers of the B/B genotype, the risk of developing UC increased up to 3.5 times in comparison with the control group (21% vs. 7%, p = 0.02, 95% CI: 1.4-8.6), whereas in b/b genotype the risk of UC decreased (33% and 54%, respectively, p = 0.02, OR = 0.4, 95% CI: 0.2-0.7). Significant differences between carriage of the B allele Bsm I polymorphism and the features of the clinical course of the UC have not been established. However, it has been shown that in carriers of allele B, the clinical implementation of UC develops significantly later than in patients with the b/b genotype (43 and 28.5 years, respectively, p = 0.04).

Conclusion: For the carriers of the B allele Bsm I polymorphism of the VDR gene is a predictor of a high risk of ulcerative colitis with an increase in the age of diagnosis. Genotype b/b Bsm I polymorphism of the VDR gene has a protective effect in the development of ulcerative colitis among the residents of the Kemerovo region of the Russian Federation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
and decreased UPRE promoter activity. ORMDL3 overexpression induced the increased cleavage of ATF6a and augmented ERSE promoter activity. Mechanistically, we show that ORMDL3 colocalizes and directly interacts with ATF6a. Furthermore, ORMDL3 overexpression induced the PERK pathway by elevating -deficiency was observed to be beneficial in the course of chronic colitis: compared to their wild-type littermates, Ormd3+/- mice showed less body weight loss and an improved survival rate. 

Conclusion: This study demonstrates for the first time the modulatory functions of ORMDL proteins as regulators of all three UPR signaling pathways. Above results suggest that ORMDL proteins constitute a precise fine-tuning mechanism of the UPR determining cell fate decisions in response to ER stress.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0334 THE USE OF LEMANN SCORE TO EVALUATE THE DAMAGE TO THE DIGESTIVE TRACT CAUSED BY CROHN'S DISEASE IN AN EGYPTIAN COHORT

H. M. Saad1, O. E. Salem2, M. A. Salem2, M. E. Ibrahim2, S. M. El Kady1

Internal Medicine, Alexandria University, Alexandria/Egypt

Radiology, Alexandria University, Alexandria/Egypt

Contact E-mail Address: hussenmahmoud7@hotmail.com

Introduction: Inflammatory bowel disease (IBD) is one of the most frequent inflammatory disorders affecting the digestive tract. Leman score was designed by Leman in 1990 to develop a comprehensive assessment of the structural bowel damage, including strictureing lesions, penetrating lesions (fistulas and abscesses), and surgical resection. (1)

Aims & Methods: To calculate Leman score in a cohort of Egyptian patients according to its ability to assess the structural damage caused by CD in Egyptian patients, score was calculated using excel computer software based on the original paper by Pariente. B et al in a cohort of Egyptian patients with CD (2) in 2013 - August 2015. The temporal relation between Leman score and disease duration was also assessed.

Results: A total of 100 Egyptian patients were enrolled, 69% males and 31% females. Median age was 32 years, 36% were smokers. The clinical presentation varied between abdominal pain occurring in 90% followed by 69% with chronic diarrhea, 52% with weight loss. Few patients (26%) presented with extraintestinal manifestations. According to ECCO classification of disease severity 73% of our patients had mild disease, 17% had moderate disease, 10% had severe disease. According to Montreal classification, 25% of patients were A1, 55% A2, 13% A3, 70% L1, 5% L2, 26% L3, & only 4% had perianal disease. According to CDAI, 83% were in clinical remission, 11% mild “CDAI 150-220”, 4% moderate “220-450”, 2% severe “CDAI > 450” disease activity. When assessing structural damage of upper GIT, 4% had strictureing lesions, 2% grade 1 & 2 grade 2 lesions. The small bowel showed strictureing lesions in 65%; 39% grade 1, 23% grade 2, 3% grade 3 lesions. 25% of patients had grade 3 penetrating lesions, 5% had surgery which was resection in all the cases. As regards the assessment of strictureing lesion in the colon, 5% showed stricteing lesion of this structure in 3%, 2% in grade 1, 0.5% in grade 3 lesions; ascending colon showed strictureing lesions in 20%, with 7% grade 1 lesions, 11% grade 2 & 2 grade 3 lesions; transverse colon showed strictureing lesions in 1%; sigmoid colon showed strictureing lesions in 2%; rectum showed strictureing lesions in 1; while in only 1% whole colon showed grade 1 strictureing lesions affecting the 6 segments. In addition, 12% had grade 3 penetrating lesions while 9% had history of surgery mainly intestinal resection. In the anal canal, only 3% of patients had grade 3 penetrating lesions. The mean Leman score was 4.02 ± 2.6 of the median of patients in whom Leman score was statistically positively correlated with disease duration of ≤ 2 years & > 2 - ≤ 10 years and >10 years respectively. (r = 0.343 & p < 0.001) (KW = 9.235(0.01)). The current study showed that affection of the GI tract was (5%, 92%, 41%, and 3% with upper tract, small bowel, colon/rectum, & anus CD location, respectively). There is an increase in median Leman score with increase in disease duration (global test p < 0.001): 0.60, 2.50, 6.40 for disease duration of ≤ 2 years & > 2 - ≤ 10 years and >10 years respectively; These results are in concordance with what was published by Pariente B et al. (1)

Conclusion: Crohn’s disease affection pattern in our Egyptian cohort is mainly in the small bowel (92%) followed by the colon (41%) with the upper GI and the anal canal representing only 5% and 3% respectively. Leman score designed by Le’mann score was designed to develop a comprehensive assessment of the structural bowel damage, including strictureing lesions while 9% had history of surgery mainly intestinal resection. In the anal canal, only 3% of patients had grade 3 penetrating lesions. The mean Le’mann score was 4.02 ± 2.6 of the median of patients in whom Le’mann score was statistically positively correlated with disease duration of ≤ 2 years & > 2 - ≤ 10 years and >10 years respectively. (r = 0.343 & p < 0.001) (KW = 9.235(0.01)). The current study showed that affection of the GI tract was (5%, 92%, 41%, and 3% with upper tract, small bowel, colon/rectum, & anus CD location, respectively). There is an increase in median Leman score with increase in disease duration (global test p < 0.001): 0.60, 2.50, 6.40 for disease duration of ≤ 2 years & > 2 - ≤ 10 years and >10 years respectively; These results are in concordance with what was published by Pariente B et al. (1)

Conclusion: Crohn’s disease affection pattern in our Egyptian cohort is mainly in the small bowel (92%) followed by the colon (41%) with the upper GI and the anal canal representing only 5% and 3% respectively. Leman score designed by
P0036 RECONSIDERING THE PROGNOSTIC VALUE OF TRADITIONAL SEROLOGIC ANTIBODIES IN CROHN’S DISEASE – IMMUNOGLOBULIN CLASSES TO TAKE THE CENTRE STAGE

N. Sipeki1, B. Suga2, G.L. Norman3, Z. Shums2, G.L. Verez1, P.L. Lakatos4, P. Antal-Szalmas3, M. Papp1

1Department Of Internal Medicine, Division Of Gastroenterology, University of Debrecen, Debrecen/Hungary
2Inova Diagnostics, San Diego/United States of America/CA
3, sz. Gyermekeklinika, Semmelweis Egyetem, Budapest/Hungary
4Department Of Gastroenterology, McGill University Health Center, Montreal General Hospital, Montreal, Canada/QC
5Department Of Laboratory Medicine, University of Debrecen, Faculty of Medicine, Debrecen/Hungary

Contact E-mail Address: norasipeki@gmail.com

Introduction: The most relevant scope of serologic antibodies in Crohn’s disease [CD] is to stratify the risk of complicated disease course. Significance of distinct antibody class and their characterization was rarely considered. We aimed to address these concerns.

Aims & Methods: Sera of 266 well-characterized CD patients [m/f:112/154, median age: 25 yrs, BI:80.1%, PI:18.0%] and 155 controls were assayed for serological ASCA and OMP antibodies, defined as the Endoscopic healing was defined as the absence of mucosal ulcers and/or stenosing (IP/S) complications and subsequent surgical interventions. A novel flow cytometry test system was established for characterisation of IgA type ASCA to reveal possible origin of the antibody.

Results: A total of 65.7% and 46.2% of the CD patients were positive for ASCA IgA and anti-OMP antibodies. Both ASCA types occurred equally. However, in controls the ASCA IgA positivity was more frequent (15.4% vs. 5.4%, p<0.001) and sIgA were increased [median, 51 vs. 29 μg/ml, p<0.001] in CD compared to controls. They were also associated with presence of IgA type anti-microbial antibodies. Contrary, ratio of IgA2/A1 in CD corresponded with the value of the controls. In Kaplan-Meier analysis, development of perianal penetration (PP) with IgG type ASCA (p LogRank = 0.025 respectively), while development of perianal penetration (PP) with IgG type ASCA (p LogRank = 0.008). Performance OMP IgA was equal to ASCA IgA, however sIgA not. Anti-microbial antibodies remained independent predictors in multivariate Cox-regression analysis comprising relevant clinical factors.

Contact E-mail Address: takenaka.gast@tmd.ac.jp

Introduction: Achievement of endoscopic healing is a key treatment goal in patients with Crohn’s disease (CD). We previously reported that magnetic resonance enterography (MRE) could exactly assess small bowel (SB) active lesions such as ulcers using balloon assisted enteroscopy (BAE) reference [1, 2]. Aims & Methods: We aimed to evaluate whether MRE could predict patient prognosis in prospective observational study. From July 2012 to December 2015, 139 CD patients in clinical and serological remission were followed up after BAE and MRE procedure. Two endoscopists performed BAE and assessed the endoscopic findings, while two radiologists assessed the MRE findings. Both the endoscopists and radiologists were blinded to the patient’s clinical presentation and results of other studies. We used Simple Endoscopic Score for CD (SES-CED) for endoscopic evaluation and Magnetic Resonance Index of Activity (MRIA) for MR evaluation. Endoscopic healing was defined as the absence of ulcerative disease (SES-CDA ≤ 5). Primary endpoints were clinical relapse and serological relapse. The relationship between endoscopic SB lesions and endpoints was evaluated. Moreover, whether MRE findings could predict patient outcome was assessed.

Results: The median duration of follow-up was 27 months (range, 12-48). Clinical and serological relapse occurred in 30 (21.6%) and 62 (44.6%) patients, respectively. SB endoscopic healing (SES-CDA ≤ 5) was achieved in 76 (54.7%) patients. Multiple logistic regression analysis of BAE findings and the absence of SB endoscopic healing (ulcerative disease; SES-CDA ≤ 5) was an independent risk factor for clinical relapse (Hazard ratio [HR] = 4.78; 95% CI: 1.94-11.80; P = 0.001) and serological relapse (HR = 2.84; 95% CI: 1.63-4.99; P = 0.001). The MRE analysis, patients who did not achieve endoscopic healing were at a significant risk of worse outcomes (clinical relapse, P < 0.001; serological relapse, P < 0.001). MR ulcer healing (MzRIA score <11) showed a high sensitivity (82.5%, 95% confidence interval [CI] 74.4%-88.2%) and specificity (85.5%, 95% CI: 79.2%-90.0%) for detection of endoscopic healing. On Cox’s proportional hazards analysis, MRE findings of ulcer healing were associated with a low risk of clinical relapse (Hazard ratio [HR]: 0.47; 95% CIs: 0.29%-0.78%; P = 0.003) and serological relapse (HR: 0.47; 95% CIs: 0.29%-0.78%; P = 0.003).

Conclusion: The absence of endoscopic healing (ulcerative disease) were seen in a considerable number of CD patients who were in clinical-serological remission, and SB lesions were at risk factor for worse prognosis. MRE could evaluate SB endoscopic healing with a high diagnostic accuracy and could predict patient outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0038 USEFULNESS OF DOUBLE BALLOON ENDOSCOPIST IN DIAGNOSIS AND TREATMENT OF SMALL BOWEL CROHN’S DISEASE

A. Madian1, M. Matsuura2, A. Elubhrany3, H. Nakase4, T. Chiba5, M. N. Rafa3

1Internal Medicine, Al Azhar University, Assiut/Egypt
2Gastroenterology And Hepatology, Kyoto University, Kyoto/Japan
3Internal Medicine, Al Azhar University, Cairo/Egypt
4Gastroenterology And Hepatology, Sapporo Medical University, Sapporo/Japan
5Gastroenterology And Hepatology, Kyoto University, Kyoto/Japan

Contact E-mail Address: a.madian@azhar.edu.eg

Introduction: In Crohn’s disease (CD), accurate evaluation of location and small bowel involvement are necessary at the time of diagnosis for prognostic concern and planning of treatment strategy. Since Double Balloon Endoscopy (DBE) enables us to examine deep small bowel either oral or anal it could be of great utility in the management of Crohn’s disease patients.

Aims & Methods: We aimed to evaluate the diagnostic yield and therapeutic impact of DBE on small bowel CD. The medical records of 180 CD patients from September 2009 to April 2013 were retrospectively reviewed. Patients were included if they had known CD based on clinical, colonoscopic and histological findings and had been subjected to DBE. If one patient underwent more than one DBE examination only the first evaluation was considered. The primary end point of our study was to evaluate small bowel involvement that is beyond the reach of conventional colonoscopy. The secondary endpoints were to determine the impact of DBE findings on management strategy of CD. The diagnostic yield of DBE in small bowel CD was determined. In addition, the changes in medical treatment, endoscopic intervention and surgical procedures, within three months after DBE, were analysed.

Results: Among 180 patients with CD, 90 patients underwent 168 DBE examinations and were included. The mean age of included patients was 40 ± 13.6 years. They were 63 males and 27 females. Eighty-nine (91%) patients with established CD underwent DBE for evaluation of small bowel involvement and 8 (9%) patients underwent DBE because of suspicion of CD and had been newly diagnosed. The overall diagnostic yield of DBE was 69%, DBE revealed small bowel involvement proximal to the terminal ileum in 40 (64.5%) patients; of them 17 (42.5%) patients had isolated small bowel CD. Within 3 months after DBE examination the management strategy of CD had changed in 47 (52.2%) patients, based on DBE findings. The medical treatment escalated in 20 (32%) patients, and decreased in 7 (11%). Fourteen (24%) patients underwent DBE-assisted balloon dilatation, and 6 (9.6%) patients underwent CD-related surgery.

Conclusion: DBE is able to detect small bowel involvement in a significant proportion of CD patients. The DBE findings modified the management strategy in at least one half of CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
A study assessed adherence in patients with Crohn’s disease and found that lower adherence was associated with an increased risk of treatment failure.

**Results:**

- Of 181 patients evaluated, the median age was 47 ± 16 years; 98 (54.1%) were males and 32 (17.7%) were active smokers. 82 (45.3%) patients had CD and 99 (54.7%) had UC. The mean disease duration was 10.21 ± 8.5 years. Most patients were in remission (87.8%). In relation to the treatment, 35.9% were taking mesalazine, 2.8% steroids, 29.3% immunomodulators and 30.4% biologics. The oral route was the most frequent (52.5%), followed by rectal route (17.1%) and subcutaneous or intravenous (30.4%). Based on MMAS-4, almost half of our patients (42%) had high adherence to IBD treatment, 56 (30.9%) had medium and 41 (22.7%) had low adherence. In relation to factors associated with adherence, univariate analyses showed that patients with high adherence were older (52.0 ± 7.1 years vs 42.5 ± 14.4; p < 0.001) and their disease had a longer duration (13.2 ± 9.7 years vs 8.5 ± 7.1; p = 0.004) than patients with medium or low adherence. However, smokers had a lower adherence (p = 0.007). Multivariate analysis confirmed that age was associated with high adherence (OR:1.04, CI95% 1.01-1.06; p = 0.002) and being smokers with low adherence (OR:3.47, CI95% 1.36-9.00; p < 0.01). Other factors as sex, anxiety, depression, quality of life, disease activity, type of drugs or administration route were not significantly associated with adherence.

**Conclusion:** Only active smoking and age were predictors of insufficient adherence to drugs in IBD. Efforts for reinforce adherence should be especially directed to young patients. Quitting tobacco could improve adherence.

---

**References**


Correlation of components of the CDAI with SES-CD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Week 12 n=121</th>
<th>Mean (SD)</th>
<th>t-value</th>
<th>p-value</th>
<th>Week 52 n=80</th>
<th>Mean (SD)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stool frequency*</td>
<td>47.1 (35.2)</td>
<td>0.46</td>
<td>&gt;0.001</td>
<td>0.002</td>
<td>33.7 (31.2)</td>
<td>0.35</td>
<td>&gt;0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>41.0 (28.9)</td>
<td>0.21</td>
<td>0.020</td>
<td>0.56</td>
<td>21.8 (25.6)</td>
<td>0.06</td>
<td>0.59</td>
<td></td>
</tr>
<tr>
<td>General well-being</td>
<td>63.3 (50.2)</td>
<td>0.16</td>
<td>0.073</td>
<td>0.42</td>
<td>42.2 (46.7)</td>
<td>0.17</td>
<td>0.123</td>
<td></td>
</tr>
<tr>
<td>Extra-intestinal manifestations</td>
<td>14.0 (16.3)</td>
<td>0.22</td>
<td>0.017</td>
<td>0.41</td>
<td>11.3 (13.8)</td>
<td>0.11</td>
<td>0.317</td>
<td></td>
</tr>
<tr>
<td>Diastolic blood pressures</td>
<td>3.2 (9.3)</td>
<td>0.01</td>
<td>0.927</td>
<td>0.35</td>
<td>1.9 (7.3)</td>
<td>0.08</td>
<td>0.465</td>
<td></td>
</tr>
<tr>
<td>Abdominal mass</td>
<td>0.8 (4.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCT</td>
<td>21.1 (23.0)</td>
<td>0.22</td>
<td>0.070</td>
<td>0.70</td>
<td>15.7 (20.6)</td>
<td>0.46</td>
<td>0.07</td>
<td>0.316</td>
</tr>
<tr>
<td>Stool frequency + Abdominal pain</td>
<td>38.1 (56.6)</td>
<td>0.40</td>
<td>&gt;0.001</td>
<td>0.002</td>
<td>30.5 (48.1)</td>
<td>0.26</td>
<td>0.018</td>
<td>0.033</td>
</tr>
</tbody>
</table>

*the number of liquid or very soft stools per day. SES-CD, Simple Endoscopic Score for Crohn’s Disease. HCT, hematocrit. NA, not applicable.

Conclusion: From data with moderate to severe CD and evidence of mucosal ulceration in EXTEND supported previous findings that the CDAI was only weakly correlated with SES-CD, as assessed at 12 and 52 weeks. When SF was significantly correlated with SES-CD at week 12, the strongest correlation was for SF (r = 0.46) and the addition of AP to SF did not increase the correlation (Table). At week 52, SF, hematocrit, and SF + AP were significantly correlated with SES-CD. At week 12, the correlation of SES-CD with SF was similar regardless of whether the patient had disease of the ileum (r = 0.44 [P < 0.001] with ileal disease; r = 0.48 [P < 0.001] without ileal disease), while SES-CD correlated more strongly with AP in those with ileal disease (r = 0.237 [P < 0.005]) than those without ileal disease (r = 0.16 [P = 0.233]).

Table: Correlation of components of the CDAI with SES-CD

References:
References


7. Funderburg N. T., Stotelmyer P. R., Sung H. C., et al. Circulating CD4(+) and CD8(+) T cells are activated in inflammatory bowel disease and are associated with plasma markers of inflammation[J]. Immunology, 2013, 140(1):87.


### P0344 BOWEL PREPARATION QUALITY OF NER1006 VERSUS ORAL TRISULFATE SOLUTION AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

R. Ng Kwet Shing1, P. Bekal2
1Clinical Development, Norgine Limited, Harefield/United Kingdom
2Ohio GI and Liver Institute, Cincinnati/United States of America/UK

Contact E-mail Address: rng@norgine.com

**Introduction:** The success of colonoscopy is dependent on efficient bowel cleansing. Inadequate bowel cleansing may decrease diagnostic sensitivity, necessitate repeat procedures and potentially delay appropriate treatment. The increasing frequency of the incidence of colorectal cancer arising in the ascending colon necessitates effective cleansing of this area; additionally these cancers are often associated with poorer prognoses. Data suggest that detection in the ascending colon is more dependent on higher grades of cleansing, perhaps due to the nature of polyps present, which may be more likely to be sessile or serrated. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel preparation, a patented combination optimised for effective bowel cleansing. The NOCT study (a multicentre randomised Phase 3 clinical trial investigating bowel cleansing efficacy of NER1006 vs trisulfate solution) reported bowel preparation quality assessed by central readers. This post hoc analysis shows the cleansing assessment by site colonoscopists, who typically guide clinical decision making; hence this study may be more relevant for clinical practice than previous studies.

**Aims & Methods:** In the NOCT study, 523 patients who underwent a colonoscopy and had a site colonoscopist assessment did not show a statistically significant difference in bowel cleansing on the HCS was also assessed by the site colonoscopist and this post hoc analysis assessed the cleansing grades as determined by the site colonoscopist and this post hoc analysis assessed the cleansing grades as determined by the site colonoscopist. For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>93%) and high rates of high-quality cleansing of the ascending colon (>73%), however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

**Disclosure of Interest:** R. Ng Kwet Shing: Employee of Norgine. All other authors have declared no conflicts of interest.

**References:**

### Table 1: Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>N</th>
<th>Patients with successful cleansing N (%)</th>
<th>Difference (%)</th>
<th>P-value</th>
<th>95% CI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall colon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006 N2D</td>
<td>263</td>
<td>255 (97)</td>
<td>6</td>
<td>0.003</td>
<td>2.0–10.1</td>
</tr>
<tr>
<td>NER1006 N1D</td>
<td>270</td>
<td>239 (91)</td>
<td></td>
<td>0</td>
<td>7.2–23.1</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>263</td>
<td>248 (94)</td>
<td>0.681</td>
<td>−5.1–3.3</td>
<td></td>
</tr>
<tr>
<td>Ascending colon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006</td>
<td>259</td>
<td>241 (93)</td>
<td>−1</td>
<td>0.079</td>
<td>−0.7–13.6</td>
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<td>Trisulfate</td>
<td>264</td>
<td>248 (94)</td>
<td></td>
<td>0</td>
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</tr>
<tr>
<td>Overall colon</td>
<td>263</td>
<td>241 (93)</td>
<td>−1</td>
<td>0.079</td>
<td>−0.7–13.6</td>
</tr>
</tbody>
</table>

**Conclusion:** For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>93%) and high rates of high-quality cleansing of the ascending colon (>73%), however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

**N.B.** successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon) or score of 3 or 4 (ascending colon, high quality).

### P0345 BOWEL PREPARATION QUALITY OF NER1006 VERSUS SODIUM PICOSULFATE + MAGNESIUM CITRATE AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

S. Lewis1, J.P.h. Drenth2, C. Santander3, C. Pediconi4, B. Amlani5, A. Repici6
1Gastroenterology, General (internal) Medicine, Derriford Hospital, Plymouth, United Kingdom
2Gastroenterology and Hepatology, Radboud University Nijmegen Medical Centre - Gastroenterology and Hepatology, Radboud University Nijmegen, Netherlands
3Aparato Digestivo, Hospital Universitario de la Princesa, Madrid, Spain
4Clinical Development, Norgine Ltd, Harefield/United Kingdom
5Medical Affairs, Norgine Ltd, Harefield/United Kingdom
6Dept. Of Gastroenterology, Ist. Clinico Humanitatis Rozzano Dept. of Gastroenterology, Milano/Italy

Contact E-mail Address: sjl@doctors.org.uk

**Introduction:** The efficacy of colonoscopy is dependent on the quality of bowel cleansing. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel cleansing solution and is a patented combination optimised for effective bowel cleansing. The DAYB study was a European multicentre, randomised trial that tested the hypothesis that NER1006 would be non-inferior to sodium picosulfate and magnesium citrate (NaPic + MgCit) in terms of overall bowel cleansing and high-quality cleansing of the ascending colon plus caecum [1]. Bowel cleansing was assessed using the Harefield Cleansing Scale (HCS) [2]. The primary endpoints of the study were assessed by video review by a central reader. Bowel cleansing on the HCS was also assessed by the site colonoscopist and this post hoc analysis assessed the cleansing grades as determined by the site colonoscopists.

**Aims & Methods:** In the DAYB study, 515 patients (aged 18–85, median age: 55.0 years) underwent screening, surveillance, or diagnostic colonoscopy and were randomly assigned in a 1:1 ratio to receive either NER1006 or trisulfate solution, each administered as an overnight split-dose. Data from the 523 patients who underwent a colonoscopy and had a completed assessment by the site colonoscopist were included. Colonoscopists were blinded to the preparation administered. Cleansing was assessed according to the Harefield Cleansing Scale, following segmental scoring, cleansing of the overall colon was graded from A to D; grades A and B were judged as successful cleansing. Cleansing of the ascending colon was graded from 0 to 4; grades 3 and 4 were judged as high-quality cleansing.

**Results:** As Table 1 shows, the bowel preparation quality of NER1006 when assessed by site colonoscopists did not show a statistically significant difference to trisulfate for the overall colon (93% vs 94%, P = 0.681; 95% CI: −5.1–3.3%) or ascending colon (80 vs 74%, P = 0.079; 95% CI: −0.7–13.6%). There was, however, a numerical advantage in favour of NER1006 on the proportion of patients achieving high-quality cleansing success in the right colon.

**Table 1:** Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>N</th>
<th>Patients with successful cleansing N (%)</th>
<th>Difference (%)</th>
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<td>−0.7–13.6</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>264</td>
<td>248 (94)</td>
<td></td>
<td>0</td>
<td>7.2–23.0</td>
</tr>
<tr>
<td>Ascending colon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006</td>
<td>259</td>
<td>208 (80)</td>
<td>6</td>
<td>0</td>
<td>7.2–23.0</td>
</tr>
<tr>
<td>Trisulfate</td>
<td>264</td>
<td>195 (74)</td>
<td></td>
<td>0</td>
<td>7.2–23.0</td>
</tr>
</tbody>
</table>

**Conclusion:** For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>93%) and high rates of high-quality cleansing of the ascending colon (>73%), however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

**Disclosure of Interest:** S. Lewis: Employee of Norgine. All other authors have declared no conflicts of interest.

**References:**

### N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon) or score of 3 or 4 (ascending colon, high quality)
Several studies in recent decades have revealed new roles for vitamins—especially as a regulator of the immune system and suppressor of fibrostenosis. However, no reports have demonstrated this relationship seen with NER1006 is of clinical relevance. The trial lived up to the expectations in the analysis. The trial satisfied the patients and was considered to be important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0346 LOW VITAMIN D LEVELS ARE RELATED TO CLINICAL ACTIVITY, MUCOSAL INFLAMMATION, AND INTESTINAL FIBROSTENOSIS IN CROHN’S DISEASE.
T. Sawada1, O. Watanabe1, M. Nakamura1, T. Yamamura1, M. Matsushita1, M. Saito1, R. Matsutara1, Y. Mizutani1, Y. Niwa1, E. Ishikawa1, G. Uchida1, H. Otaka1, H. Suzuki1, T. Nishikawa1, H. Ishida1, T. Kuno1, S. Hattori1, K. Yamada1, T. Naka1, K. Furukawa1, K. Funakaya1, E. Ohno1, M. Miyahara2
1MGastroenterology And Hepatology, Nagoya University Graduate School of Medicine, Nagoya, Aichi-Pref./Japan
2Endoscopy, Nagoya University Hospital, Nagoya/Japan
Contact E-mail Address: tsawada@med.nagoya-u.ac.jp

Introduction: Several studies in recent decades have revealed new roles for vitamin D. For example, vitamin D plays a role in regulating skeletal muscle, as well as in cardiovascular and renal physiology, producing antinflammatory effects, suppressing fibrosis, and as a regulator of the immune system. In light of these new roles, especially as a regulator of the immune system and suppressor of fibrosis—vitamin D deficiency is considered to be related to disease activity and intestinal fibrosis, including that seen in Crohn’s disease (CD). Several reports have demonstrated a relationship between vitamin D deficiency and CD activity according to clinical parameters such as Crohn’s disease activity index (CDAI) and quality of life (QoL). However, no reports have demonstrated this relationship using endoscopic parameters such as endoscopic activity, mucosal inflammation, and intestinal fibrostenosis.

Aims & Methods: The aim of this study was to clarify the relationship between vitamin D deficiency and CD by using endoscopic parameters, as well as clinical parameters. Of the CD patients visiting Nagaoya University Hospital from May 2011 to February 2016, 82 patients were enrolled in this study. Serum 25-hydroxyvitamin D (25(OH)D), disease activity, and clinical factors of the subject were investigated prospectively. Endoscopic findings of 52 of the 82 total patients enrolled were investigated retrospectively from endoscopic records. This study design was approved by the ethics committee of Nagoya University Hospital. Clinical remission was defined as CDAI ≤150. Mucosal healing was defined as a simple endoscopic score for Crohn’s disease (SES-CD) ≤1. Moreover, to evaluate endoscopic activity from two aspects (mucosal inflammation and fibrostenosis), we divided SES-CD score into endoscopic mucosal inflammation score and endoscopic fibrostenosis score. We used the simplified Crohn’s disease endoscopic index (CDEI) in the analysis. The trial lived up to the expectations in the analysis. The trial satisfied the patients and was considered to be important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

Results: Mean age of the subjects was 41.11, and the male/female proportion was 64/18. The mean serum 25(OH)D level of subjects was 17.1 ng/mL, and 61 cases (74.4%) were classified as severe deficiency or deficiency. Mean serum 25(OH)D levels of the clinical remission and clinically active groups were 18.7 ± 8.1 ng/mL and 12.4 ± 3.6 ng/mL, respectively (P < 0.001). In a multivariate analysis, low levels of 25(OH)D and serum albumin and positive C-reactive protein (CRP) results were correlated with clinical activity. Mean serum 25(OH)D levels in the mucosal healing and no mucosal healing groups were 24.0 ± 9.8 ng/mL and 15.1 ± 6.6 ng/mL, respectively (P < 0.001). Mean serum 25(OH)D levels for the no mucosal inflammation and mucosal inflammation groups were 21.6 ± 9.6 ng/mL and 14.3 ± 5.5 ng/mL, respectively (P < 0.001); and those of the no fibrostenosis and fibrostenosis groups were 20.2 ± 4.8 ng/mL and 14.2 ± 6.7 ng/mL, respectively (P < 0.001; Mann-Whitney U test). In a multivariate analysis, low serum 25(OH)D levels were related with mucosal inflammation and intestinal fibrostenotic score of CD (P < 0.05; logistic regression analysis).

Conclusion: This study demonstrated the relationship between vitamin D level and disease activity in CD patients. The disease pathology of CD consists of repetitive intestinal inflammation and intestinal fibrostenosis formed during healing of inflammation. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0348 SKELETAL MUSCLE ATRROPHY IS A PREDICTIVE FACTOR FOR INTESTINAL RESECTION IN PATIENTS WITH CROHN’S DISEASE CASE

S. Bamba1, M. Sasaki2, A. Takaoka2, A. Nishida1, O. Inatomi1, M. Sugimoto3, A. Andoh3

1Division Of Gastroenterology, Shiga Univ. of Medical Sciences, Otsu/Japan
2Division Of Clinical Nutrition, Shiga Univ. of Medical Sciences, Otsu/Japan
3Division Of Endoscopy, Shiga Univ. of Medical Sciences, Otsu/Japan

Contact E-mail Address: sb@belle.shiga-med.ac.jp

Introduction: Inflammatory bowel diseases (IBD), such as ulcerative colitis (UC) and Crohn’s disease (CD), are chronic gastrointestinal diseases that are associated with protein-energy malnutrition (PEM). Although the frequency of altered body composition, such as reduced fat-free mass or skeletal muscle volume, has been shown to be high in patients with IBD, the relationships between skeletal muscle volume and the prognosis are yet to be elucidated.

Aims & Methods: We have conducted a retrospective study on 61 IBD patients who have admitted due to exacerbation of the disease. We have enrolled IBD patients with abdominal computed tomography and assessed the nutritional indices, such as the Onodera’s prognostic nutritional index (O-PNI) and control-nutritional status (CONUT). O-PNI was calculated based on the serum albumin and total lymphocyte count, using the following equation:

\[
O-PNI = \frac{\text{serum albumin (g/dl)}}{20} + \frac{\text{total lymphocyte count (x10^9/ml)}}{1000}
\]

The L3 skeletal muscle area (SMI) which is the cross-sectional area of the skeletal muscle at the level of the third lumbar (L3) vertebra normalized by the height squared is used to identify sarcopenia.

Results: Sarcopenia defined as low SMI were observed in 44% of all IBD patients (29% in CD, 54% in UC). In UC patients, the O-PNI, CONUT, height and albumin were significantly lower than the CD patients. Spermans’ rank correlation revealed that the SMI has a strong correlation to body weight and O-PNI in IBD patients. Multivariate analysis using Cox regression model demonstrated the SMI has a strong correlation to body weight and O-PNI in IBD patients. The L3 skeletal muscle volume can be a prognostic factor of intestinal resection in IBD, especially in CD. The results may originate from the fact that CD patients present other gastrointestinal diseases which accumulate intestinal deformity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0349 A PROSPECTIVE STUDY TO PREDICT A MILD COURSE OF CROHN’S DISEASE: AN INTERIM ANALYSIS OF THE PROGNOSIS STUDY

W. Krus1, L. Leifeld2, N. Hoepffner3, M. Hoesl4, P. Jessen5, M. Mroß6, L. Leifeld2, N. Hoepffner3, M. Hoesl4, P. Jessen5, M. Mroß6

1Internal Medicine, Evangelisches Krankenhaus Köln-Kalk, Köln/Germany
2St. Bernard Krankenhaus, Hildesheim/Germany
3Klinikum der Ludwig-Maximilians-Universität München, München/Germany
4Gastroenterologische Gemeinschaftspraxis- Praxisklinik, Nürnberg/Germany
5Division Of Endoscopy, St. Bernward Krankenhaus, Hildesheim/Germany
6Division Of Endoscopy, Innen Medizin, Evangelisches Krankenhaus Köln-Kalk, Köln/Germany

Contact E-mail Address: wolfgang.krus@googlemail.com

Introduction: Crohn’s Disease (CD) spans a wide spectrum of severity, from mild to severe, and can avoid under- as well as overtreatment of the patient if determined properly. While factors determining bad prognosis are studied in detail, factors predicting a mild course with the chance of simple treatments are less known. Here we show first results of a prospective evaluation of a retrospectively created score (JCC 2013;7:263) for prediction of mild CD which consists of age at diagnosis, CRP, an endoscopy score, presence of perianal lesions and complications.

Aims & Methods: This is a prospective, ongoing study performed in 12 IBD-specialized private gastroenterology practices (outpatients only) in Germany. All consecutive newly diagnosed CD patients (diagnosis ≤6 weeks) are included. An annual screening ileocolonoscopy with histology, investigation of the perianal area, laboratory tests including CRP are performed and CD complications (stenosis, fistula, extraintestinal manifestations or fever > 38 °C) evaluated to complete of the above quoted score. Patients are treated at the discretion of the physician. In case of a score indicating a good prognosis (≤3) or of mild clinical appearance mesalazine is started. In all other cases patients are treated according to guidelines. 5 year follow up is planned for all patients. If initial therapy fails, treatment is escalated. Source data verification is performed by external monitors. Primary aim of the study is to confirm the previously identified score and to test its power to predict a mild disease course as indicated by the need of not more than mesalazine therapy. Additional analyses include the percentage of patients with a score indicating a severe disease and their characteristics at diagnosis. This interim analysis presents preliminary data.

Results: Currently, 78 patients (33 male, 45 female; age 16-72, mean 35 years) with newly diagnosed CD are enrolled. 56 CD-patients with follow up 2-8 weeks (mean 8.5 months), mean age 35 years, female 21 mean, CRP 12.2 mg/l were included into the interim analysis. In 28 patients with a score from 0-2 step-up treatment occurred in 7%, whereas in 28 patients with a score >2, step-up rate was 43% (p=0.0043). Differences between patients with a score 0-2 or >2 were age (41 vs. 28 years, p=0.0011), CRP <2 mg/l (17/28 patients vs. 0, p < 0.0001), endoscopic score 1.4 vs. 2.7, p < 0.001, perforation 1/28 vs. 4/ 28, stenosis 1/28 vs. 6/28. There were no differences in terms of sex, fistula, extraintestinal manifestations and lever.

Conclusion: In this early analysis of a prospective study planned with a 5-year follow-up, we present a significant proportion of patients with mild CD and simple mesalazine therapy can be identified. These initial results encourage to continue and expand this prospective long-term study on the predictability of a mild CD course.

P0350 USEFULNESS OF REPEATING TESTING FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD): CORRELATION BETWEEN TUBERCULIN SKIN TEST (TST)/BOOSTER AND QUANTIFERON-TB (QFT)


1Gastroenterology, Hospital Virgen Concha, Zamora/Spain
2Pediatrics, Hospital Virgen Concha, Zamora/Spain

Contact E-mail Address: amfoncor@gmail.com

Introduction: The Spanish Working Group on Crohn’s Disease and Ulcerative Colitis (GETECCU) and other international guidelines recommend testing of latent tuberculosis infection (LTI) before anti TNF therapy by screening with tuberculin skin test (TST) and, in a potential state of energy, double screening by TST and interferon-gamma release assays (IGRAs) or two-time tuberculin test (TST/booster). Routine repetition is not recommended.

Aims & Methods: We aimed to assess the correlation between (TST/booster) and IGRAs using QUANTIFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zamora (Spain). In a single cohort of IBD patients attended in the department of gastro-entorology of Zamora Hospital, we implemented a questionnaire and collected TST/booster performed previously to February 2015. Afterwards, prospectively, between February 2015 to February 2017, TST and QFT were performed at the same day, and the TST-booster 7 days after. Finally we compared the results of the LTI screening performed prospectively with the screening of the retrospective cohort.

Results: A total of 404 patients were included with a mean age of 51.5 (SD 16.6), 225 (55.7%) male and 179 (44.3%) female. 227 patients (56.2%) were ulcerative colitis, 167 (41.3%) were Crohn disease and 10 (2.5%) were diagnosed of indeterminate colitis. 160 patients live in rural areas (40.6%), 60/355 (16.9%) were smokers. The prevalence of LTI and the correlation between TST/booster and QFT is shown in table 1.

Table 1: Prevalence of LTI and correlation between TST/booster and QFT.

<table>
<thead>
<tr>
<th>Prevalence of LTI</th>
<th>Prevalence of LTI in patients on immunomodulator or anti-TNF therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST/booster or QFT (+)</td>
<td>130/399 (32.6%)</td>
</tr>
<tr>
<td>TST/booster positives</td>
<td>116/371 (31.3%)</td>
</tr>
<tr>
<td>TST/booster(+) /QFT(+)</td>
<td>12/272 (10.3%)</td>
</tr>
<tr>
<td>QFT positives</td>
<td>40/264 (15.5%)</td>
</tr>
<tr>
<td>TST/booster(+) /QFT(+)</td>
<td>12/272 (10.3%)</td>
</tr>
<tr>
<td>TST/booster(+) /QFT(+)</td>
<td>3/39 (8%)</td>
</tr>
<tr>
<td>QFT positives</td>
<td>40/264 (15.5%)</td>
</tr>
</tbody>
</table>

Prevalence of LTI in patients on immunomodulator or anti-TNF therapy: TST/booster or QFT (+) 130/399 (32.6%), TST/booster positives 116/371 (31.3%), TST/booster(+) /QFT(+) 12/272 (10.3%), QFT positives 40/264 (15.5%), TST/booster(+) /QFT(+) 12/272 (10.3%), QFT positives 40/264 (15.5%).
Prevalence of LTI in retrospective testing was of 54.246 (22.0%). Prospective testing was (26.7% CD, 27.6% UC). Using the follow up, 30.191 (15.7%) patients who were negative for screening before 2015 were converted in positive for LTI (95% CI [10.2–21.1]).

Conclusion: The prevalence of LTI in our area is high (32.6%). The simultaneous presence of the stool test, an booster and QFT are useful for the detection of LTI. The CEC increases the detection of LTI even when is performed in patients without immunosuppressive treatments, in whom is not routinely recommended.

P0351 MAGNETIC RESONANCE ENTEROGRAPHY GLOBAL SCORE ALLOWS FOR ACCURATE QUANTIFICATION OF SMALL BOWEL INFLAMMATION IN CROHN’S DISEASE – A COMPARISON WITH CAPSULE ENDOSCOPY


1Diagnostic Imaging, Sheba Medical Center, Ramat Gan/Israel
2Gastroenterology Department, Sheba Medical Center, Ramat Gan/Israel
3Chaim Sheba Medical Center, Tel Aviv University, Tel Aviv/Israel

Contact E-mail Address: ukopylov@gmail.com

Introduction: Magnetic resonance enterography (MRE) and capsule endoscopy (CE) are prime modalities for evaluation of small bowel in patients with Crohn’s disease (CD). However, detection of proximal (jejenum and proximal ileum) small bowel inflammation by MRE is challenging. Current quantitative scores such as Magnetic Resonance Index of Activity (MaRIA) do not incorporate proximal small bowel data and were validated against ileocolonoscopy. Magnetic resonance enterography global score (MEGS) was designed for quantitative evaluation of the entire digestive tract; however, it was only validated against ileocolonoscopy and its accuracy in the proximal small bowel was not assessed. CE allows for accurate assessment of the entire small bowel and is the modality of choice for evaluation of the proximal small bowel.

Aims & Methods: We aimed to compare the quantitative evaluation of the small bowel inflammation by MEGS score and the Lewis capsule endoscopy score. Patients with known quiescent small bowel (CD) for at least 3 months (CDAI < 150) were prospectively recruited and underwent magnetic resonance enterography (MRE) and capsule endoscopies (CE). MEGS score was calculated for each bowel segment and the entire small bowel. MEGS is based on the involved segment length, wall thickness, mural enhancement, mural and perimesal edema and extra-intestinal findings. In addition, MARIA score was calculated for the terminal ileum. Small bowel inflammation on CE was quantified using the Lewis score (LS) (LS < 135– mucosal healing; LS ≥ 790 – moderate to severe inflammation). Proximal small bowel was defined as jejunum and duodenum on MRE and as 1st and 2nd tertiles LS on CE. Distal small bowel was defined as terminal ileum on MRE and 3rd tertile LS on CE. Fecal calprotectin (FCP) levels were measured and correlated with all scores.

Results: Fifty patients were included in the study. There was a strong correlation between LS and CECDAI (Pearson’s r = 0.67, p < 0.001), CECDAI > 11.1 corresponded to moderate to severe inflammation (LS ≥ 790) by linear regression. There was a moderate correlation between both scores and FCP levels that was somewhat stronger for CECDAI (r = 0.39, p < 0.002 vs r = 0.53, p = 0.001 for both). There was a weak correlation between LS and CRP levels (r = 0.27, p = 0.04) and none for CECDAI and CRP (r = 0.21). There was no correlation between MRE based scores and CECDAI.

Conclusion: In our prospective study, CECDAI and LS strongly correlated and performed similarly for quantitative assessment of mucosal inflammation in established CD.

Disclosure of Interest: U. kopylov. The study was supported by a generous grant from the Helmsley Charitable fund

All other authors have declared no conflicts of interest.

References


P0354 THIOPURINE MAINTENANCE THERAPY FOR IBD: WHICH IS THE BEST METHOD TO MEASURE MEDICATION ADHEREANCE?

A. Ochien, V. George, C. Selinger
Gastroenterology, St James Hospital, Leeds/United Kingdom

Contact E-mail Address: odouri.ochien@nhs.net

Introduction: For the majority of patients with IBD long-term therapy is required to maintain remission, yet 30–45% of patients do not adhere to their IBD medication. Medication adherence can be assessed with prescription refill rates, biological measures (metabolites, trough levels) and patient self-report tools. There is currently no accepted gold standard and the feasibility and utility of different adherence assessment tools in the routine outpatient clinic setting have not been fully examined. The aim of this service improvement project was to test the acceptability of self-report tools assessing thiopurine adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels.

Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients selfreported adherence using a visual analogue scale (VAS), the validated Morisky adherence tool (MOR) and the validated Medication Adherence Report Scale (MARS). TGN levels were classified as complete non-adherence (<100 and MMP low), partial adherence (TGN 100-235 and MMP low) or full adherence (>235 or MMP high). Correlation analysis was performed using Pearson tests.

Results: Of 100 approached patients none refused participation and TGN levels were available for 96. These included 38 women. Diagnoses were Crohn’s disease in 27, ulcerative colitis in 41 and IBD-U 3 cases. Concomitant therapy included 5/ASA (25 cases), anti-TNF (13 cases) and Vedolizumab (2 cases). The proportion of adherent patients was according to the relevant tool report tool 71% (TGN), 87% (VAS), 87% (Morisky) and 77% (MARS). VAS (Pearson 0.315, p = 0.005) and Morisky (Pearson r = 0.363, p = 0.001) correlated moderately with TGN, but MARS (Pearson r = 0.393) did not. The patients, who were non-adherent by TGN were detected by VAS in 3, Morisky in 6 and MARS in 3 cases. However, patients showing non-adherence according to self-report tools had 15–25 TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morisky and 4 of 15 for MARS.

Conclusion: Self-report tools provided a patient-friendly and inexpensive way of assessing adherence, but the correlation with TGN levels was only moderate. While providing a more objective TGN levels are problematic for routine use in all patients. TGN require a more invasive and expensive approach. Furthermore, TGN cannot detect “white coat adherence” (patients take medication only around appointments), which is the most likely explanation for normal TGN levels in patients reporting to be poorly adherent. Neither TGN levels nor self-report tools can be seen as the gold standard at present.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0355 ROLE FOR THERAPEUTIC DRUG MONITORING IN ASSESSING SECONDARY LOSS OF RESPONSE TO MAINTENANCE ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE

D. Tighe1, R. Hession2, A. Naqem2, S. Smith3, A. O’Connor1, N. Neslin2, B. Ryan1, D. McNamar3
1Gastroenterology, Trinity Academic Gastroenterology Group (TAGG), AMNCH Tallaght, Dublin/Ireland
2School Of Medicine, Trinity College Dublin, Dublin/Ireland
3 Trinity Academic Gastroenterology Group, Trinity College Dublin, Dublin/Ireland

Contact E-mail Address: donal.tighe83@gmail.com

Introduction: Anti-TNFa therapies have improved outcomes in patients with inflammatory bowel disease. Their use has been associated with improved clinical endpoints, reduced hospitalisation and rates of surgery. However secondary loss of response (LOR) to both infliximab (IFX) and adalimumab (ADA) is a significant problem, leading to further flares of disease, disease progression and poorer outcomes. Therapeutic drug monitoring (TDM), which involves measurement of an anti-TNFα trough level, offers the opportunity of exploring an immune basis behind LOR, and potentially adjusting doses or switching therapies to help regain clinical response.

Aims & Methods: The aim of this study was to evaluate whether TDM can help predict secondary LOR to infliximab and adalimumab and whether dose adjustments based on this information can help patients regain clinical response. This was a prospective, single-centre, cohort study from April 15, 2014 to April 2016, at our institution. Patients with Ulcerative colitis (UC) and Crohn’s disease (CD) were enrolled, if they were clinically (based on Harvey-Bradshaw Index (HBI) or partial Mayo scores) felt to be experiencing a secondary LOR to either infliximab or adalimumab maintenance therapy. Patients with inflammatory bowel disease were followed for a one-year period, from their initial assessment for secondary LOR to assess outcomes.

Results: 24 patients were recruited, 40 CD with Harvey-Bradshaw Index (HBI) >4 points and 6 patients with UC with Partial Mayo Score (PMS) > 2 points. Mean age was 46 years, 38% female and 62% with CD. The majority of patients were on IFX (95%) or ADA (95%). The therapeutic strategy chosen for each group was: 23.9% no change in treatment, 26.1% increase anti-TNFa dose or decrease infusion interval, 19.6% switch to another anti-TNFa drug, 15.2% switch to non anti-TNFa (ustekinumab). For patients who had doses adjusted, clinical response (decrease of HBI ≥ 3 points for CD) was reached in 77.8% of patients and remission (HBI ≤ 4 for CD) in 55.6% at the end of follow-up.

Conclusion: Secondary LOR to anti-TNFα therapy has a significant impact on patient outcomes. Therapeutic drug monitoring is helping us predict secondary LOR and for facilitating dose adjustment or switch in therapy in a clinically guided fashion.

Disclosure of Interest: All authors have declared no conflicts of interest.

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A. Ochien, V. George, C. Selinger, et al., Self-report tools provided a patient-friendly and inexpensive way of assessing adherence, but the correlation with TGN levels was only moderate. While providing a more objective TGN levels are problematic for routine use in all patients. TGN require a more invasive and expensive approach. Furthermore, TGN cannot detect “white coat adherence” (patients take medication only around appointments), which is the most likely explanation for normal TGN levels in patients reporting to be poorly adherent. Neither TGN levels nor self-report tools can be seen as the gold standard at present. United European Gastroenterology Journal 5(3S)

P0356 COMPARATIVE ACCURACY OF BOWEL ULTRASOUND VERSUS MAGNETIC RESONANCE ENDOCOPY AND COLONOSCOPY IN ASSESSING DISEASE ACTIVITY AND COMPLICATIONS AND INFLUENCING THE DECISION-MAKING PROCESS IN CROHN’S DISEASE

M. Allocca1, F. Fiorino2, C. Bonifacio2, F. Furfaro1, D. Gilaridi1, S. Radice1, L. Peryn-Biroulet1, S. Danese1
1Istituto Clinico Humanitas-irccs In Gastroenterology, Istituto Clinico Humanitas In Gastroenterology, Istitut, Rozzano/Italy
2Radiology, IRCCS Humanitas, Rozzano/Italy

Gastroenterology Unit, Inserm U954, Nancy University and Hospital, Nancy/ France

Contact E-mail Address: mariangela.allocca@humanitas.it

Introduction: Bowel Ultrasound (US) and Magnetic Resonance Enterography (MRE) are accurate in assessing disease activity and complications in Crohn’s disease (CD) patients. The comparative accuracy of US versus MRE + Colonoscopy (CS) in assessing disease activity and complications and influencing the decision-making process in CD is unknown.

Aims & Methods: Ileo-colonic CD consecutive patients seen in a tertiary referral Center (Humanitas Research Hospital, Milan, Italy) were prospectively assessed by MRE, CS and US, within 1 week. Sensitivity, specificity, accuracy, positive and negative predictive values (PPV and NPV) of US in assessing localization and extension (bowel wall thickening > 3 mm), bowel wall enhancement (increase of vascularization at power Doppler), strictures (narrowing of the lumen), fistulas and abscesses, and active disease (presence of ulcers at colonoscopy) were calculated using CS in combination with MRE findings as a reference standard. Two independent blinded IBD specialists reviewed separately MRE and US findings, and were asked to decide the therapeutic strategy (continue therapy vs. optimize/change therapy). Kappa agreement between MRE and US was calculated.

Results: Forty-one consecutive CD patients, irrespectively of disease activity and negative predictive values (PPV and NPV) of US in assessing localization and extension (bowel wall thickening > 3 mm), bowel wall enhancement (increase of vascularization at power Doppler), strictures (narrowing of the lumen), fistulas and abscesses, and active disease (presence of ulcers at colonoscopy) were calculated using CS in combination with MRE findings as a reference standard. Two independent blinded IBD specialists reviewed separately MRE and US findings, and were asked to decide the therapeutic strategy (continue therapy vs. optimize/change therapy). Kappa agreement between MRE and US was calculated. United European Gastroenterology Journal 5(3S)
Conclusion: Us was as accurate as the combination CS + MR1 in assessing disease activity and complications in CD patients. Therapeutic decisions based on US findings alone were appropriate in the vast majority of CD patients. US is a non-invasive, easy-to-use tool to manage CD patients in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0357 DIAGNOSTIC DELAY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE – A STUDY OF THE AUSTRIAN IBD STUDY GROUP (ATISG)


1Institute of Internal Medicine III, Medical University of Vienna, Vienna/Austria
2Innere Medizin, Krankenhaus Barmherzige Brueder, St. Veit an der Glan/Austria
3Department Of Gastroenterology And Hepatology, Medical University Graz, Graz/Austria
4Abteilung Für Innere Medizin I, Klinikum Wels-Grieskirchen, Wels/Austria
5Department Of Internal Medicine I, Medical University Innsbruck, Innsbruck/Austria
6Abteilung Innere Medizin IV, Krankenanstalt Rudolfstiftung, Vienna/Austria
7Innere Medizin, Landeskrankenhaus Oberpullendorf, Oberpullendorf/Austria
8Abteilung Innere Medizin III, Universitätsklinikum St. Pölten, St. Pölten/Austria
9Abteilung Für Innere Medizin V, Klinikum Wels-Grieskirchen, Grieskirchen/Austria
10Innere Medizin, Landeskrankenhaus Hall in Tirol, Hall in Tirol/Austria
11Abteilung Für Innere Medizin I, Landeskrankenhaus Wiener Neustadt, Wiener Neustadt/Austria
12Innere Medizin, Hartmannspital, Vienna/Austria
13Innere Medizin, Hauptsplus Krankenhaus, Vienna/Austria
14Innere Medizin, Krankenhaus Elisabethinen Linz, Linz/Austria
15Innere Medizin, Krankenhaus Barmherzige Brüder, Salzburg/Austria
16Innere Medizin, Landeskrankenhaus Feldkirch, Feldkirch/Austria
17Innere Medizin, Krankenhaus Barmherzige Brüder, Graz/Austria
18Department Of Epidemiology, Medical University of Vienna, Vienna/Austria

Contact E-mail Address: gottfried.novacek@medunwien.ac.at

Introduction: Diagnostic delay seems to be common in inflammatory bowel disease (IBD), especially in Crohn’s disease (CD). We sought to investigate the diagnostic delay in Austrian IBD patients and to identify associated risk factors as well as the impact of delayed diagnosis on the risk of intestinal surgery in CD.

Aims & Methods: A multicentre cohort study adult patients with IBD (CD, ulcerative colitis UC, inflammatory bowel disease unclassified IBU) attending 18 Austrian outpatient clinics were recruited between May 2014 and July 2015 to complete a multi-item questionnaire, which recorded medical and socioeconomic characteristics. Study outcome was the diagnostic delay defined as the time period from first symptom onset to diagnosis of IBD. A multivariable proportional hazard regressions model based on interval censored latency times was applied to the data.

Results: 1217 patients (CD 779, UC 400, IBU 21, missing 17; females 615) with a median age of 40 years (interquartile range IQR 31–52) and a median disease duration of 10 years (IQR 4–18 years) were analysed. The median diagnostic delay was 0.53 years (IQR 0.29–1.92 years) in CD and 0.28 years (IQR 0.00–0.90 years) in UC. In CD, the median time from first symptom to diagnosis was 0.11–0.86 years) in UC, respectively (p = 0.0001). Diagnostic delay did not differ significantly between CD and UC, but it was associated with older age at diagnosis.

Conclusion: The median diagnostic delay was longer in CD (6 months) than in UC patients (3 months) and was associated with older age at diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0358 IDENTIFICATION OF NON-INVASIVE BIOMARKERS TO DETECT ILEAL CEACAM-6 OVEREXPRESSSION AND ADHERENT INVASIVE E. COI (AIEC) INFECTION IN CROHN’S DISEASE PATIENTS: RESULTS FROM THE CEALIVE MULTICENTER STUDY

E. Vazeille1, X. Hebuterne2, M. Fumery3, B. Patiente4, S. Nancy5, P. Seksik5, L. Peyrin-Biroulet5, M. Allez6, A. Dubois5, B. Bulet7, J. Filippi7, J. Dupas8, M. Nachury9, G. Boschetti9, M. Goutte8, B. Pereira8, N. Barnich1, A. Buisson1
1Dept. Of Gastroenterology, CHU Estaiming-Clermont-Ferrand, Clermont-ferrand, France
2Service de Gastroenterologie et Nutrition Clinic, Nice/France
3Amiens University Hospital, Amiens/France
4Gastroenterology Unit, Hopital Huriez, Lille University Hospital, Lille/France
5University of Lyon, Lyon/France
6Gastroenterology And Nutrition Unit, Gastroenterology & Nutrition Department, Paris/France
7Department Of Gastroenterology, Nancy University Hospital Insrmt U954 Dept. of Hepato-Gastroenterology, Vandoeuvre les Nancy/France
8Gastroenterology, Hopital Saint-Louis APHP, Universite Denis Diderot Paris 7, Paris/France
9Lesaffre, Marcy-en-baroeul/France
10CHU Nord Amiens, Amiens/France
11CHU Lille, Lille/France

Contact E-mail Address: emilie.vazeille@udmail.fr

Introduction: Enterobacteria, especially adherent and invasive E. coli (AIEC), are suspected to play a key role in Crohn’s disease (CD). These bacteria are able to highly adhere to the ileal mucosa of CD patients through the CEACAM6 receptor (Caricnoernbryic antigen-related cell adhesion molecule 6). It has been shown that therapies targeting enterobacteria and/or AIEC could be more effective in mice overexpressing CEACAM6. In this line, the overexpression of CEACAM6 in the ileum as well as the presence of AIEC in the ileum could be potential biomarkers to select the patients who could benefit from drugs targeting the host-pathogen interaction. Unfortunately, the identification of these biomarkers is time-consuming and invasive highlighting the need for more convenient alternative.

Aims & Methods: We aimed to assess the correlation between the level of CEACAM6 in the saliva and the level of CEACAM6 in the ileum in CD patients and to define the best threshold of CEACAM6 in the saliva to detect overexpression of ileal CEACAM6. In addition, we attempted to identify non-invasive biomarkers of AIEC infection. In this prospective multicentre study (8 centers), all the patients requiring ileocoloscopy, regardless the indication, were consecutively included between September 2015 and September 2016. Clinical and endoscopic data were collected on the day of colonoscopy. Blood samples, stool samples (before bowel cleansing, saliva and ileal biopsies from healthy and affected areas) were also collected. CEACAM6 from ileal biopsies and saliva were measured (duplicates) using ELISA assays. AIEC were identified using phenotypic assays.

Results: Overall, 102 patients were enrolled in the study (Table 1).

Table 1: Baseline characteristics of the 102 CD patients included in the study.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female gender n, %</td>
<td>56 (56.6%)</td>
</tr>
<tr>
<td>Active smokers n, %</td>
<td>34 (34.3%)</td>
</tr>
<tr>
<td>Montreal classification</td>
<td></td>
</tr>
<tr>
<td>Disease location</td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td>27 (28.4%)</td>
</tr>
<tr>
<td>L2</td>
<td>12 (12.6%)</td>
</tr>
<tr>
<td>L3</td>
<td>58 (61.1%)</td>
</tr>
<tr>
<td>L4</td>
<td>7 (7.4%)</td>
</tr>
<tr>
<td>Disease behaviour</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>51 (54.3%)</td>
</tr>
<tr>
<td>B2</td>
<td>26 (27.7%)</td>
</tr>
</tbody>
</table>

(continued)
Ileal CEACAM6 level did not depend on disease severity or the site of biopsies as the median level of ileal CEACAM6 was 584 pg/ml [570.3; 1646] and there was no difference in healthy or ulcerated ileum (756 pg/ml [487; 1617] vs 947 pg/ml [604; 1820], p = 0.86). The median level of CEACAM6 from saliva was 3837 pg/ml [1889; 7388]. There was a positive correlation between the levels of CEACAM6 in saliva and CEACAM6 in the ileum (ρ = 0.47; p < 0.0001) in both macroscopically healthy areas (ρ = 0.53, p < 0.0001) and ulcerated area (ρ = 0.39, p = 0.0082). Using a ROC curve, we determined the best threshold of CEACAM6 in saliva for detecting ileal CEACAM6 antibodies. Using a ROC curve (area under the curve (AUROC) = 0.73), the cut-off value of 3800 pg/ml demonstrated the best performance to detect ileal CEACAM6 overexpression with substantial specificity (76.0% [54.9-90.6]) and positive predictive value (67.5% [74.5-93.5]).

Conclusion: CEACAM6 measurement in the saliva is feasible, non time-consuming and non-invasive. It could be a reliable test to detect the overexpression of CEACAM6 in the ileum from CD patients and could then be proposed as a non-invasive biomarker to select patients who might benefit from anti-adhesive therapies. In addition, we identified the number of enterobacteria associated to the ileum as a convenient and reliable test to screen CD patients for AIEC bacteria.

Disclosure of Interest: The study was funded by LESAFFRE company. I declare lecture fees for Abbvie, Takeda, Hospira, MSD, Vifor Pharma, SANofi-Aventis and Ferring. I declare consulting fees for Abbvie, Takeda, Hospira.

All other authors have declared no conflicts of interest.

References
**Introduction:** Increasingly, immunosuppressive medications such as azathioprine and 6-mercaptopurine (6-MP) have been used in order to prevent a possible remission of inflammatory bowel disease (IBD) patients. It has been reported that such treatments increase the risk of developing all types of skin cancer. Education of these patients is key in order to promote their awareness of their increased risk and it is vital for gastroenterologists to communicate to patients on sun protection strategies on initiating therapy. We recently performed a pilot study in this group which highlighted gaps in their knowledge of the increased risk and prevention strategies. We speculate clinician’s lack of knowledge was partly to blame.

**Aims & Methods:** Our aim was to determine Irish IBD clinicians’ knowledge of the skin cancer risk and advised photoprotective behaviours in this cohort. Cross-sectional descriptive study. We invited IBD clinicians via email to fill in an anonymous online survey designed to assess knowledge of skin cancer risk and preventative measures. Surveys were sent out to gastroenterology trainees, general gastroenterology trainees, gastroenterology specialists, and nurse specialists.

**Results:**
- 45% of respondents acknowledged the consequences of sun damage;
- 34 (79.1%) recognised the use of sun protective clothing increased skin cancer risk and almost 100% (44, 98%) knew working outdoors increased risk of skin cancer; and
- only 34 (79.1%) knew sun beds increased skin cancer risk.

Clinician’s knowledge of general factors associated with skin cancer risk and clinical experience was noted. Overall, clinician’s knowledge of general factors associated with skin cancer risk and preventative measures was also lacking; 37 (86%) knew patients should wear SPF 50 but almost half (47% n = 20) thought it should be applied twice daily rather than two hourly (51% n = 23) and only 47% (n = 20) knew patients should stay in the shade from 11am-3pm. Regarding their own practice; 39 (87%) report they emphasise the importance of sun protection in their patients; however, worryingly only 24 (55.8%) had heard of our national skin cancer prevention guidelines “Sunsmart”. Of interest; while physicians had a greater understanding of patient risk factors (p < 0.03), nurse specialists were more likely to emphasise the need for sun protection in clinic (p < 0.0003), and of physicians, trainees had a more complete knowledge of all advised preventative measures (p < 0.03).

**Conclusion:** Our study highlights IBD clinicians’ suboptimal knowledge of immunosuppression risk and their lack of emphasis on preventative measures and skin examination in clinics. A targeted educational and awareness programme may address this.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0362 HOME MONITORING OF DISEASE ACTIVITY AND FECAL CALPROTECTIN IN ADULT PATIENTS WITH INFLAMMATORY BOWEL DISEASE: RESULTS OF A PROSPECTIVE ANATOMICAL DISEASE ACTIVITY SCORING STUDY**

D. V. Ankersen, D. Marker, P. Weimers, J. Burisch, P. Munkholm
Department Of Gastroenterology, North Zealand University Hospital, Frederiksværk/Denmark

**Contact E-mail Address:** dorit.vedel.ankersen@regionh.dk

**Introduction:** Due to the chronic and progressive nature of inflammatory bowel disease (IBD) it is of significant importance to detect and treat a relapse as soon as possible in order to decrease the total inflammation burden and avoid progression of intestinal damage, and possibly improve the disease course. A validated Fecal Calprotectin (FC) home testing kit and smart phone application CalproSmart™ have been added to existent eHealth web-application, enabling patients to perform yearly skin checks on their patients on immunosuppressants. Their knowledge of preventative measures was also lacking: 37% (86%) knew patients should wear SPF 50 but almost half (47% n = 45) knew to be suspicious of changing color and 84% (n = 38) of an irregular border, but shockingly only five (11%) perform yearly skin checks on their patients. Their knowledge of specific immunosuppressant risk was suboptimal; while 82% (37/45) recognised cyclosporine had an increased risk of malignant melanoma. Regards prevention strategies; the majority knew what changes to look for in a suspicious mole; 100% (n = 45) knew to be suspicious of changing color and 84% (n = 38) of an irregular border, while shockingly only five (11%) perform yearly skin checks on their patients. Their knowledge of preventative measures was also lacking: 37 (86%) knew patients should wear SPF 50 but almost half (47% n = 20) thought it should be applied twice daily rather than two hourly (51% n = 23) and only 47% (n = 20) knew patients should stay in the shade from 11am-3pm. Regarding their own practice; 39 (87%) report they emphasise the importance of sun protection in their patients; however, worryingly only 24 (55.8%) had heard of our national skin cancer prevention guidelines “Sunsmart”. Of interest; while physicians had a greater understanding of patient risk factors (p < 0.03), nurse specialists were more likely to emphasise the need for sun protection in clinic (p < 0.0003), and of physicians, trainees had a more complete knowledge of all advised preventative measures (p < 0.03).

**Conclusion:** Our study highlights IBD clinicians’ suboptimal knowledge of immunosuppression risk and their lack of emphasis on preventative measures and skin examination in clinics. A targeted educational and awareness programme may address this.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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**P0363 S100A4 PROTEIN IN INFLAMMATORY BOWEL DISEASE: RESULTS OF A SINGLE CENTRE PROSPECTIVE STUDY**

M. Moravkova1, J. Vavrová2, J. Bures1
12nd Department Of Internal Medicine - Gastroenterology, Charles University, Faculty of Medicine and University Hospital in Hradec Kralove, Hradec Kralove/Czech Republic
2Institute Of Clinical Biochemistry And Diagnostics, Charles University, Faculty of Medicine and University Hospital in Hradec Kralove, Hradec Kralove/Czech Republic

**Contact E-mail Address:** darina.kohoutova@seznam.cz

**Introduction:** Ultrafilitic calprotectin (UC) and Crohn's disease (CD) represent a serious medically raised socio-economic problem worldwide. The family of S100 proteins represents a total of at least 25 relatively small calcium binding proteins. S100 proteins have a broad range of functions: they play a role in the regulation of cell proliferation, differentiation, apoptosis, energy metabolism, cellular signalling and calcium homeostasis. S100A4 (metastatin-1, calvasculin) strongly contributes to a process of metatization. Still, the role of S100A4 seems to be more complex as its profibrotic effect has been confirmed in the myocardium, liver parenchyme and in the intestine. Fibroblasts represent the key cell type in the pathogenesis of fibrostenosing/stricturing CD.**

**Aims & Methods:** The aim of this prospective study was to assess serum concentration of S100A4 protein in UC and CD. Study included 118 subjects: 93 patients with CD (44 men, 49 women, aged 22–74, mean 44 ± 14), 16 patients with UC (8 men, 8 women, aged 20–74, mean 39 ± 15) and 9 controls (average patient population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 2 men, 7 women, aged 53 ± 17). CD subgroup was divided according to the Montreal classification: 20/93 (22%) patients had B1 phenotype, 19/30 (20%) B2, 20/31 (20%) B3 and 34/93 (37%) B2 + B3. Perianal involvement was present in 27/93 (29%). L1 involvement was present in 15/93 (16%), L2 in 14/93 (15%) and L3 in 8/93 (11%). Serum concentration of S100A4 protein was investigated by means of Human Protein S100-A4 ELISA kit, the quantitative sandwich enzyme immunoassay technique (purchased from My Biosource, San Diego, California, USA).

**Results:** Serum concentration of S100A4 protein was significantly higher in UC compared to controls (58.8 ± 56.2 µg/L) compared to controls (mean 104.8 ± 40.5 µg/L, p < 0.019 and in CD (mean 154.4 ± 52.1 µg/L) compared to controls, p = 0.007. No difference in S100A4 was revealed between UC and CD, p > 0.05. In CD group, serum concentration of S100A4 in each subgroup (divided according to bowel involvement CD) was significantly higher compared to controls; p < 0.005. No differences in S100A4 were documented between each CD phenotypes. Serum concentration of S100A4 was significantly higher in L2 (mean 144.6 ± 44.2 µg/L) compared to controls, p = 0.041 and in L3 (mean 163.0 ± 52.8 µg/L) compared to controls, p = 0.002. Serum concentration of S100A4 was significantly higher in L2 (163.0 ± 52.8 µg/L) compared to L1 (mean 126.9 ± 47.6 µg/L), p = 0.017. No difference in S100A4 was observed between patients with and without perianal involvement, p > 0.05.
Conclusion: Association of serum S100A4 protein with UC and CD was significantly more common in IBD patients than in controls, more so in CD. Patients with active disease are more likely to have VitD deficiency than those in remission. The correlation with activity indexes was statistically significant between normal subjects and those with disease; albumin 42.4 g/L vs 38.9 g/L in normal vs stricturing disease (p < 0.0181 95%CI -0.23–0.02), CRP 8.8 mg/L vs 18.3 mg/L (p < 0.003 95%CI -0.46–0.10) and v 29.2 mg/L (p < 0.002 95% CI -0.43–0.11) amongst normal inflammation and inflammation and strictures respectively. Neither parameter could differentiate between inflammatory and restricting disease. 26 MREs performed with ileal CD had been further assessed; median age = 41yrs, male = 10(38%). RCE > 24% and high T2 signal intensity (SI) 6:26 (23%) and 11:26 (42.3%). RCE > 24% was occurred in only 1 patient with a visible stenosis. Average MRAIAs 2(6.7%) < 7 mild; 3/26 (11.5%) 7–11 moderate; 21/26 (80.7%) >1 severe. MRAIAs did not change significantly between 70 sec and 7 min. As expected T2 SI increased with MRAIAs >11, 26 vs 13 (p < 0.001, 95% CI 7.73–17.27). RCE > 24% correlated with MRAIAs >1, suggesting it as a predictive factor for fibrosis. Consistent with MRE findings, CRP was higher in patients with MacRA >11 (13.3 v 5.2) and lower in patients with RCE > 24% (3.9 v 14). Conclusion: Unlike biochemical markers, MRE may be a useful means to differentiate between inflammatory and restricting disease. Further study is required to assess the long-term predictive value. RCE may be a useful adjunct to current MRE and help detect fibrosis in small bowel lesions and warrants further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Kabbani TA et al. Association of Vitamin D Level With Clinical Status in an Italian IBD cohort in relation to disease activity. Serum 25-hydroxyvitamin D (25OHD) levels were significantly lower in IBD patients than in controls, more so in CD. Patients with active disease are more likely to have VitD deficiency than those in remission. The correlation with activity indexes should be confirmed in larger series.

Contact E-mail Address: ruimorais20@gmail.com
Introduction: Hypovitaminosis D is common in Inflammatory Bowel Disease (IBD) patients. Some studies suggest that the finding may relate to severity of the disease.1,3
Aims & Methods: The aim of the study was to determine the Vitamin D (VitD) status in an Italian IBD cohort in relation to disease activity. Serum 25-hydroxyvitamin D was measured in 260 IBD outpatients, not supplemented with VitD (110 Crohn’s disease (CD) and 150 Ulcerative Colitis (UC); 145 males and 115 females mean age 50.7 ± 15 years), and compared to those of 205 healthy blood donors, matched by age (±2– 2 years) and month in which the blood sample was collected. VitD levels were correlated to C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), Harvey Bradshaw Index (HBI) and Crohn’s Disease Activity Index (CDAI) for CD and Mayo partial score for UC. Chi square, T test and linear correlation were used when appropriate.
Results: IBD patients were at higher risk of VitD deficiency (defined as < 20ng/ml) than controls (OR 4.5, 95% CI 2.9-6.9, p< 0.0001). Of 260 IBD patients, 156 (60%) had VitD deficiency, more often in CD than in UC (72.7% vs 48% respectively, p < 0.001). Age < 40 and >60 years, winter/spring season, CRP >0.5mg/dl, ESR >20 mm/h, previous intestinal surgery and HBI ≥5 were significant risk factors for VitD deficiency. No differences were observed in relation to sex, smoking status, BMI, age at diagnosis, localization and behavior of disease, and need of steroids. There was a weak negative correlation between CRP values, HBI scores and VitD levels (R = -0.13, p = 0.037 and R = -0.26, p = 0.006 respectively).
Conclusion: VitD deficiency is significantly more common in IBD patients than in controls, more so in CD. Patients with active disease are more likely to have VitD deficiency than those in remission. The correlation with activity indexes should be confirmed in larger series.

Contact E-mail Address: malfa.d_p_sousa@hotmail.com
Introduction: The need for upper endoscopy in patients with Crohn’s disease (CD) with no symptoms is controversial. The aim of this study was to establish the prevalence of gastroduodenal involvement, regardless of symptoms, and its prognostic implications.
Aims & Methods: Patients from a single centre with established CD (n=347) were retrospectively evaluated – inclusion criteria: upper endoscopy without treatment. Gastroduodenal involvement was defined by considering macroscopic (erosions, ulcers or stenosis) and microscopic criteria (focal gastritis, cryptic irregularity, erosion/ulceration and granuloma in the absence of Helicobacter pylori (HP) infection).
Results: We included 140 patients - phenotype: 50% inflammatory, 31% structuring and 19% penetrating; Location: 42% ileal, 45% ileocolic and 13% colic. Upper endoscopy was performed in 19% for symptoms and in 81% for staging. Gastric macroscopic findings were detected in 49% (69/140); the most common were erosions (21%) and erythematous mucosa (18%). Biopsies were performed in 56% of patients: chronic gastritis 66%, normal 23%, granuloma 5%, focal gastritis 2% and cryptic microabrasion in 2%. HP was positive in 25% of patients. In the duodenum, endoscopic lesions were observed in 33% of the biopsies were observed in 35% of the biopsies were observed in 33% of the patients (46/ 140); the most common were erosions (16%) and ulcers (9%). Biopsies were performed in 32% and the most prevalent findings were chronic non-specific inflammation 62%, ulcers 17%, granuloma 3% and erosion 3%. Applying macro/microscopic criteria, gastroduodenal involvement by CD was considered in 18% of the patients and was not correlated with the presence of symptoms, phenotype or localization of the disease. The prevalence of gastroduodenal involvement was a significant predictor of hospitalization.
Conclusion: The prevalence of gastroduodenal involvement by CD in this sample was 18%, and a larger percentage have macro/microscopic findings that are not disease specific. The presence of symptoms does not predict gastroduodenal involvement due to CD that is associated with a worse prognosis.
Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: ruimorais20@gmail.com
Introduction: CT enterography is one of the most accurate imaging methods for evaluating Crohn’s disease (CD) extent and intestinal involvement.

Aims & Methods: The aim of this study was to determine the frequency and clinical impact of the incidental findings in CD patients who underwent CT enterography. This was a retrospective study that evaluated patients with CD who underwent CT enterography between January 2012 and December 2016. Incidental findings were defined as previously unknown extraintestinal lesions. The orientation of the patients after their detection was evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. 2016, 111(Jan), 1–8.
5. Helicobacter pylori (HP) infection.
6. United European Gastroenterology Journal 5(58)
Results: A total of 520 patients who underwent CT enterography were identified, with 370 being asymptomatic and 276 of these being women. The median age was 43 (32–53) years and 53% were women. The main indication for CT enterography was CD staging (81%). A total of 531 incidental findings were detected (median of 2 [1–3] per patient). The main findings identified were hepatic nodules (n = 59), hepatic cysts (n = 55) and salamioid cysts (n = 46). The findings implicated orientations to another medical specialty in 80 patients (29%), the main ones being Cardiovascular (n = 14) and Gynecology (n = 11). The findings implied additional exams in 59 patients (21%). Five (2%) underwent subsequent surgical intervention. Clinically relevant findings were found in 38 patients (14%), including 2 renal tumors, 2 ovarian teratomas and 3 cases of primary sclerosing cholangitis. The detection of incidental findings implied a change in CD therapy in 9 patients (3%); one suspended biologic therapy, 2 suspended immunomodulator therapy and 6 initiated biologic therapy.

Conclusion: Incidental findings are relatively common in patients with CD who undergo CT enterography. A significant proportion is clinically relevant and may involve change CD therapy. A risk stratification may be important to avoid morbidity associated with unnecessary examinations to assess benign situations.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0368 CLINICAL SIGNIFICANCE OF ASYMPTOMATIC CLOSTRIDIUM DIFFICILE CARRIAGE IN PATIENTS ON IMMUNOMODULATOR FOR INFLAMMATORY BOWEL DISEASE S.T. Law, W.M. Yip, K.K. Li Department Of Medicine And Geriatrics, Tuen Man Hospital, Hong Kong/Hong Kong Pre

Contact E-mail Address: stil168@hotmail.com

Introduction: Clinical significance of asymptomatic Clostridium difficile (C. difficile) carriage in patients on immunomodulator for inflammatory bowel disease (IBD) is largely unknown. [1, 2]

Aims & Methods: The aim of this study was to investigate the clinical implication of asymptomatic carriage of C. diff in IBD patients. Consecutive IBD patients on immunomodulators in clinical remission for the past six months were prospectively recruited from the IBD clinic since 2013. Those cases were excluded if they had past history of total colorectomy, the dosage of their immunomodulators were titrated according to their disease activity in the past six months or the types of their immunomodulators were other than azathioprine, mercaptopurine or methotrexate.

Stool specimen for C. difficile cytotoxin real-time polymerase chain reaction (RT-PCR) assay was obtained to all eligible patients at the time of enrollment and every follow-up during the study period. Patients were monitored for any IBD flare-up in which if happened, an additional stool specimen for C. difficile cytotoxin RT-PCR assay was obtained.

The primary outcomes were the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: <150: remission; 150–220: mild-moderate; 220–450: moderate-severe; >450: severe). The Ulcerative colitis Disease Activity Index (UC-DAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0–12; 0-2: remission; 3-6: mild; 7-10: moderate; >10: severe UC). The study population was partitioned with C. difficile carriage which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

Statistical inference of the variables was examined by Mann-Whitney U and 2 test for numerical and categorical parameters respectively.

Results: Of 197 IBD patients (CD: 98 (49.75%); male: 132(67.01%); age (yrs): median 43, minimum 17, maximum 79), 9(4.57%; CD: 6 patients) patients were found to be asymptomatic carriage of C. difficile during the study period. The demographic features, including age, gender ratio, smoking history and the duration of IBD, of the patient group with and without asymptomatic carriage of C. difficile were comparable each other. Four UC patients in the non-carriage group had prior history of anti-TNF exposure in which three were treated as maintenance therapy for the active disease activity, associated axial spondylarthropathy and rectovaginal fistula while the other two patients (one from each group) had received three doses of anti-TNF as rescue therapy for severe disease flare-up.

Incidence rates of the disease flare-up were comparable (11.17 vs. 22.22%, p = 0.313) between the non-carriage and carriage groups in which all these flares were under-controlled by course of high-dose prednisolone.

Clinical characteristics of the IBD patients with and without asymptomatic carriage of C. difficile

<table>
<thead>
<tr>
<th>Age (Yr)</th>
<th>Sex (m/f)</th>
<th>Smoker (%)</th>
<th>Year of Diagnosis (Yr)</th>
<th>Crohn disease (n, %)</th>
<th>Prior exposure of Anti-TNF (n, %)</th>
<th>Flare up (n, %)</th>
<th>C. difficile infection (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>43(26)</td>
<td>44(33)</td>
<td>4.5</td>
<td>7(9)</td>
<td>92(48.94)</td>
<td>4(2.13)</td>
<td>21(11.17)</td>
<td>16(5.80)</td>
</tr>
</tbody>
</table>

Data were expressed as median(interquartile range) *: all are UC cases and 3 for maintenance therapy with indications as follows: refractory colitis, spondyloarthropathy, rectovaginal fistula **: case of UC received 3 doses of anti-TNF for severe flare

Abbreviation: IBD, inflammatory bowel disease; C. difficile, Clostridium difficile; ulcerative colitis, UC; ns, non-significant

Conclusion: The incidence of asymptomatic carriage of C. difficile in the IBD patients on immunomodulators was not common. It did not associate with the disease flare-up but a significant portion of them could evolve subsequently into clinical infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0369 BOWEL ULTRASOUND IS USEFUL IN DISEASE MONITORING OF ULCERATIVE COLITIS PATENTS: FIRST ANALYSIS FROM THE TRUST&UC STUDY IN GERMANY C. Maaser1, F. Petersen1, U. Helwig2, A. Rössler3, D. Lang1, S. Rath4, T. Kucharczyk2, O. On Behalf Of The Trust&UC Study Group1

1 Ambulanzzentrum Gastroenterologie, University Teaching Hospital Lueneburg, Lueneburg/Germany
2 Department Of Internal Medicine And Gastroenterology, University Teaching Hospital Linz, Linz/Germany
3 Gastroenterology Practice, Oldenburg/Germany
4 Medical Department, AbbVie Deutschland GmbH & Co. KG, Wiesbaden/Germany
5 Medical Area Immunology, AbbVie Deutschland GmbH & Co. KG, Wiesbaden/Germany

Contact E-mail Address: christian.maaser@klinikum-lueneburg.de

Introduction: Due to the relapsing and highly variable nature of ulcerative colitis (UC), it would be desirable to have reliable tools for measuring parameters of disease activity in order to monitor response to therapy and to detect relapse. In the past decade it has already been shown that ultrasound (US) is a useful to monitor the disease activity. The hypothesis of the TRUST&UC (TRANsabdominal UltraSonography of the bowel To monitor disease activity in subjects with Ulcerative Colitis) study is that transabdominal US is an easy to use, easily repeatable, and accurate diagnostic tool in the assessment of UC activity, in monitoring the disease course, and response to therapy.

Aims & Methods: TRUST&UC is a German ongoing prospective, observational multi-center study in patients with active UC. The primary objective of this study is the prospective evaluation of bowel wall US in response to therapy in order to assess its value in monitoring UC patients in routine medical practice. Clinical parameters (e.g. CRP, fecal calprotectin) and the Simple Colitis Clinical Activity Index (SCCAI) were used for routine assessment of disease activity.

Results: 176 patients with active UC have been enrolled in 37 German IBD study group (GISG) centres until February 2017. 47.2% of the patients were female, median age was 38.9 years (range 19–77) with median disease duration of 152.2 days (range 8–1017). Of all the patients with a clinical flare defined by SCCAI 90.3% showed a bowel wall thickening (BWT), and only 9.7% showed no US signals. At US examination, a BWT in the colon sigmoideum was present in 276 (53%). The median age was 43 (32–53) years and 53% were women. The main indication for CT enterography was CD staging (81%). A total of 531 incidental findings were detected (median of 2 [1–3] per patient). The main findings identified were hepatic nodules (n = 59), hepatic cysts (n = 55) and salamioid cysts (n = 46). The findings implicated orientations to another medical specialty in 80 patients (29%), the main ones being Cardiovascular (n = 14) and Gynecology (n = 11). The findings implied additional exams in 59 patients (21%). Five (2%) underwent subsequent surgical intervention. Clinically relevant findings were found in 38 patients (14%), including 2 renal tumors, 2 ovarian teratomas and 3 cases of primary sclerosing cholangitis. The detection of incidental findings implied a change in CD therapy in 9 patients (3%); one suspended biologic therapy, 2 suspended immunomodulator therapy and 6 initiated biologic therapy.
stratification was the case in 20.6% of the patients, mesenteric fibro-fatty prolif-
eration more than 50%, had increased signal in the color Doppler US. At baseline systemic steroids were used in 62.1%, azathioprine in
36.2%, and TNFα antagonists in 40.0% of patients (N = 174).
All follow-up patients (N = 104) displayed acute inflammatory symptoms at baseline with active disease and anti-TNF therapy which required an introduction or escalation of treatment. After 12 weeks, the US examination showed signifi-
cant improvements of the following parameters: BWT in colon sigmoideum (87.5% vs 33.7%, p = 0.034) and colon transversum (42.3% vs 15.4%, p = 0.012), loss of haustation (54.8% vs 33.7%, p < 0.001), ascites (9.7% vs 2.9%, p < 0.001), mesenteric lymphadenopathy (31.6% vs 14.3%, p = 0.005), mesenteric fibro-fatty proliferation (40.0% vs 10.0%, p = 0.041) and increased signal in color Doppler US (56.7% vs 23.1%, p = 0.039). A decrease of BWT was significantly accompanied by a decrease in SCCAI (8.0 to 1.5 points, p < 0.001).
Conclusion: In this real-life cohort almost 90% of the patients showed a BWT, a pivotal IBD symptom and within 12 weeks selected bowel US parameters improved significantly from treatment intensification. Therefore, US examination is a useful tool to monitor disease activity and response to therapy in UC patients.

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C. Maaser: C. Maaser has received lecture and consulting fees from AbbVie.
F. Petersen: F. Petersen has received lecture and consulting fees from AbbVie.
U. Heigl: U. Heigl has received lecture and consulting fees from AbbVie.
A. Rüssler: A. Rüssler is AbbVie employee and may own AbbVie stock or options.
D. Lang: D. Lang is AbbVie employee and may own AbbVie stock or options.
S. Rath: S. Rath is AbbVie employee and may own AbbVie stock or options.
T. Kucharzik: T. Kucharzik has received lecture and consulting fees from AbbVie.
All other authors have declared no conflicts of interest.

Reference

P0370 THE GUT MICROBIOME IN IBD IS CHARACTERIZED BY IMPAIRED METABOLIC COOPERATIVITY AND CAN BE RESTORED UPON ANTI-TNF THERAPY
1Medical Department, University of Kiel, Kiel/Germany
2Institute Of Medical School, University Of Kiel, Kiel/Germany
3Institute For Experimental Medicine, University Of Kiel, Kiel/Germany

Contact E-mail Address: k.aden@ikmb.uni-kiel.de

Introduction: Blocking TNFα is an important treatment option for inflammatory bowel disease (IBD). The etiology of the disorder comprises a permanent activation of immune cascades and imbalanced cytokine networks. Evidence has been put forward that alteration of the human gut microbiome may play a critical role in the pathogenesis of IBD. However, the impact of targeted cytokine blockade on dysbiosis of intestinal microbial communities is poorly understood. Here, we investigate the effect of anti-TNFα treatment on gut microbial community structures in a prospective, longitudinal study for 30 weeks. The study compares IBD as a disorder, which primarily affects the gut, with sero-positive and -negative rheumatoid arthritis (RA) and IBD as a rheumatoid disorder (RD) as an inflammatory disease complex, which usually does not affect the intestine.

Aims & Methods: anti-TNFα naïve patients suffering from IBD (n = 12) or RD (n = 17), subject to first-time anti-TNFα therapy were recruited for longitudinal stool sampling at baseline and 2, 6 and 30 weeks after therapy induction. Intestinal microbiota communities were studied by 16S rRNA gene (V4) sequenc-
ing. Changes in microbiota before and after therapeutic interventions were assessed in terms of alpha and beta diversity, indicator species and prediction of metabolic cooperative interactions. Samples from healthy controls (n = 19) were included as a benchmark of healthy microbial profiles.

Results: Intestinal microbial diversity and cooperativity are decreased in both disease entities, IBD and RA. In IBD, anti-TNFα therapy is able to restore microbial diversity and cooperativity. More over cooperative metabolic interaction is significantly increased only in anti-TNFα responder. In RA, anti-TNFα therapy did not significantly restore microbial community structures.

Conclusion: We show that anti-TNFα treatment increases the gut microbial diversi-
ty and coupling of cross feeding metabolic interactions towards the state of healthy individuals. Assessment of metabolic interactions of intestinal microbiota may serve as a marker for clinical response in IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0371 SELF-MONITORING OF THE COLONIC INFLAMMATORY BOWEL DISEASE BY A RAPID HOME BASED FEACAL CALPROTECTIN TEST AND A SYMPTOM QUESTIONNAIRE
A. Puolanne1, M.A. A. Färkkilä1, K. Kolho2
1Clinic Of Gastroenterology, Helsinki University Hospital, Helsinki/Finland
2Pediatric Gastroenterology, University of Helsinki Children’s Hospital, Helsinki/ Finland

Contact E-mail Address: anna-maija.puolanne@hus.fi

Introduction: Faecal calprotectin (FC) is a most reliable noninvasive means to distinguish remission from active inflammation in inflammatory bowel disease (IBD). However, until now, commercially available FC tests are time-consuming, and consequently new rapid tests have been validated. As the incidence of IBD is increasing, self-
monitoring and eHealth technologies have been evaluated in managing patients with this life-long disease.

Aims & Methods: The aim of this prospective study was to evaluate the feasibility and cost-effectiveness of a semi-quantitative rapid FC home test and a validated symptom questionnaire, in patients with colonic IBD. The influence of the self-
monitoring to the course of the disease will also be evaluated. Between April 2015 and December 2016, 180 patients with colonic IBD (126 with UC, 47 with CD, and 7 with IBD unclassified) were included in the study and randomized in a study group and control group. Patients in the study group were instructed to perform the FC home test and fill in a symptom questionnaire every other month and with increasing of the symptoms, and sent the results to the study/IBD nurse by e-mail. The control group patients filled in the symptom questionnaire at baseline and at 12 months and with the appointment to the outpatient clinic according to normal practice. The patients were not reminded of performing the stool tests or filling in the questionnaires. The study period was 12 months, and it is still ongoing.

Results: By the end of February 2017, 134 of the 180 included patients had completed the 12 months’ follow-up. In the study group, 20/91 (22%) patients had performed the stool tests and filled in the symptom scores according to the study protocol for 6 months, and 14/91(15%) patients for 12 months. In the control group, 14/89 (16%) patients had filled in the symptom score at baseline and 12 months. There was a significant difference of the adherence between patients stratified for IBD-diagnosis, age, or sex. The satisfaction of the patients with the program as well as the reasons for the discontinuation of the study and influence of self-monitoring in the number of relapses, phone calls, e-mails, and appointments to the outpatient clinic in both groups will be evaluated.

Conclusion: The self-monitoring of IBD activity with a rapid FC home test provides an option for individualized treatment for increasing amount of IBD patients. However, in this study the adherence to the self-monitoring program was low. The patients need to be reminded of performing the stool tests and filling in the questionnaires in time. Also, the selection and education of the patients, as well as the easy accessibility of the monitoring program are crucial and need further consideration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0372 CLINICAL CHARACTERISTICS IN ULCERATIVE COLITIS PATIENTS WITH COLITIS ASSOCIATED DYSPLASIA/CANCER AND SPORADIC TUMOR
M. Mutaguchi2, M. Naganuma1, Y. Iwao2, T. Fukuda3, S. Sugimoto1, K. Nanki1, S. Mizuno1, H. Ogata4, T. Kanai1
1Division Of Gastroenterology And Hepatology, Department Of Internal Medicine, Keio University, Tokyo/Japan
2Center For Preventive Medicine, Keio University School of Medicine, Tokyo/Japan
3Center For Diagnostic And Therapeutic Endoscopy, Keio University School of Medicine, Tokyo/Japan

Contact E-mail Address: mu.mutaguchi@gmail.com

Introduction: Although the incidence of ulcerative colitis (UC)-related colorectal cancer (CAC) is increased in cases with long duration of disease, it should also be recognized that sporadic tumors (ST) develop as older. Various studies have been conducted on CAC, but there are few clinical studies on ST merged with UC. In
this study, the clinical and endoscopic features of CAC and ST, treatment method, and comparison were compared. Aims & Methods: Among 261 UC patients who underwent colonoscopy (CS) and had neoplastic lesions, the clinical features, treatment and diagnosis were compared between 71 patients (88 lesions) with CAC (including HGD; CAC group) and 47 patients (63 lesions) who underwent local excision (surgical or endoscopic resection) within the presence of the past/present inflammation of UC (ST group). Definition of CAC and ST was performed by conventional pathological and immunohistochemical findings.

Results: The age of UC onset (29.8 vs. 39.0) and tumor detection (45.5 vs. 57.3) in the CAC group were significantly higher than those in ST group (p < 0.01). The CAC group (47.1%) had a higher percentage of chronic persistent type than the ST group (2.3%), and the Mayo endoscopic score is also significantly higher (p = 0.001) in the CAC group (1.43) than ST group (0.38). The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAC group than ST group (p = 0.000). In patients with intraepithelial neoplasia (IEN) or submucosal lesions, flat lesion was found in 15 lesions of CAC group and whereas no flat lesion was observed in ST group. One lesion in ST group could not distinguish the lesions from the surrounding mucosa without magnifying colonoscopy. In ST group who received resections, 4 patients after resections observed ectopic CAC or low-grade dysplasia during follow-up. In CAC group, 50, 5, 4 patients received total colectomy, left colostomy, ESD, respectively, whereas in ST group, 1, 7, 45 patients received total colectomy, local colectomy, EMR and polypectomy, ESD, respectively. Although mortality from cancer was 11.4% (8/70 cases) in CAC group, no death due to cancer observed in patients whose lesions were found as IEN. On the other hand mortality from cancer was 2.1% (1/47 cases) in ST group.

Conclusion: Most sporadic lesions were endoscopically distinct and local resection was enough if inflammation was controlled. After the sporadic lesions were resected in remitting UC patients, regular surveillance colonoscopy is necessary because 8.5% (4/47) of patients was found CAC/dysplasia. Even in CAC group, prognosis is well in patients with IEN.

Disclose of Interest: All authors have declared no conflicts of interest.

P0374 CHANGES IN THERAPEUTIC STRATEGY AND OUTCOMES IN NEWLY DIAGNOSED PATIENT WITH CROHN’S DISEASE IN THE BULGARIA ERA IN HUNGARY: A NATIONWIDE STUDY BASED ON THE NATIONAL HEALTH INSURANCE FUND DATABASE

Z. Kurti1, L. Gonci2, Z. Vegh1, P.A. Golovics1, P. Fadgyas-Freyle1, J. Gimesi-Orszagh1, G. Korponai1, B.D. Lovas1, K. Gebe1, P.L. Lakatos1

11st Department Of Medicine, Semmelweis University Faculty of Medicine 1st Department of Medicine - 1st Department, Budapest/Hungary
2Strategic Analysis Department, National Health Insurance Fund (OEP), Budapest/Hungary
31st Department Of Medicine, Semmelweis University, Budapest/Hungary

Contact E-mail Address: zsuzsa.kurti@gmail.com

Introduction: Crohn’s disease (CD) diagnosis between 2004-2015 in Hungary based on the administrative database of the National Health Insurance Fund (OEP). We used the administrative database of the National Health Insurance Fund (OEP), the only nationwide state-owned health insurance provider in Hungary. Newly diagnosed CD patients were identified through previously reported algorithms using the ICD-10 codes for Crohn’s disease in the outpatient, (inpatient, medical, surgical) non-primary care records and drug prescription databases between 2004-2015. Patients were stratified according to the year of diagnosis and maximum treatment step during the first 3 years after the diagnosis.

Results: A total of 6173 (male/female: 46.12%/53.87%) newly diagnosed CD patients were identified during the observational period. Maximum treatment steps did not differ in patients diagnosed before and after 2009 (5-ASA: 11.7% vs. 12.2%, p = 0.157; ST: 46.4% vs. 30.5%, p = 15.6%). Probability of hospitalizations during the first 3-years from diagnosis was lower according to the maximal treatment step in patients diagnosed after 2009 (at 36 ± 30-day period: overall 55.7% vs. 47.4% (p = 0.000), anti-TNF: 73% vs. 66.7% (p = 0.103), 5-ASA: 64.6% vs. 56.1% (p = 0.000), steroid: 44.2% vs. 36.8% (p < 0.007), 5-ASA: 32.6% vs. 26.7% (p = 0.157), respectively. In contrast, surgery rates were not different according to the maximum treatment step (at 36 ± 30-day period: overall 16.0% vs. 15.5% (p = 0.672) anti-TNF 26.7% vs. 27.2% (p = 0.993), IS: 24.1% vs. 22.2% (p = 0.565), steroid 8.1% vs. 7.9% (p = 0.896), 5-ASA 10% vs. 11% (p = 0.816)).

Conclusion: Distribution of maximal treatment steps and surgery rates was not different according to the year of diagnosis and after 2009, although immunomodulators and biologics remained high after 2009. The time from diagnosis to surgery was shorter in CD patients receiving immunomodulators, whereas CD patients receiving biologics had a diagnosis to surgery interval of 12-24 months.

Disclose of Interest: All authors have declared no conflicts of interest.
PATIENTS WITH CROHN'S DISEASE TREATED WITH P0377 DYNAMICS OF PROINFLAMMATORY CYTOKINES IN COMBINED STEM CELL AND ANTI-CYTOKINE THERAPY OF CD WITH PERIANAL FISTULAS.

Aims & Methods:
We aimed to compare the efficacy of combined therapy (local and systemic) mesenchymal stem cells (MSCs) of bone marrow, infliximab (IFX) and antibiotics/immunosuppression (IS) on the rate of healing of simple perianal fistulas in Crohn's disease. 36 patients with Crohn's disease with perianal lesions were divided into three groups depending on the method of therapy. The first group of patients aged from 19 to 58 years old (Me=31) received MSCs according to the recommended scheme (Me=29) (n=14). In the 1st group the closure of the fistula was observed in 10/12 patients (83.3%), in the 2nd group healing simple fistulas after 12 months was observed in 8/10 patients (80.0%) (OR=0.83; 95% CI 0.14–4.9; p=0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p=0.32) did not find a fistula. After 12 months of the 1st group patients receiving MSCs, healing of simple fistulas persisted in 8/12 (66.6%) with the 2nd group - 7/9 (70.0%) (OR - 1.15; 95% CI 0.32–3.84; p=0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p=0.32) did not find a fistula. After 12 months of the 1st group patients receiving MSCs, healing of simple fistulas persisted in 8/12 (66.6%) with the 2nd group - 7/9 (70.0%) (OR - 1.15; 95% CI 0.32–3.84; p=0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p=0.32) did not find a fistula. After 12 months of the 1st group patients receiving MSCs, healing of simple fistulas persisted in 8/12 (66.6%) with the 2nd group - 7/9 (70.0%) (OR - 1.15; 95% CI 0.32–3.84; p=0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p=0.32) did not find a fistula.

Contact E-mail Address: chuevanea@mail.ru

Introduction: Mesenchymal stem cells (MSCs) are used for the treatment of chronic inflammatory and autoimmune diseases in recent years, including rheumatoid arthritis (RA) and inflammatory bowel disease (IBD). In most cases, treatment of the IBD patient receiving concomitant immunosuppressive therapy. It is found that immunomodulatory drugs (azathioprine (AZA), methotrexate, 6-mercaptopurine, infliximab (IFP)), regardless of the concentration, do not affect the viability, differentiation, phenotype, and ability to inhibit proliferation of MSCs's penumocytes, R. Gudkova1, E. Dobroliub1, A. Parfenov1

1IBD, Moscow Clinical Research Center, Moscow/Russian Federation
2Department Of Laboratory, Moscow Clinical Research Center, Moscow/Russian Federation
3Medical Radiological Research Centre, Obninsk/Russian Federation
4Immunology, Moscow Clinical Research Center, Moscow/Russian Federation

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
4. Campieri, M. et al. Optimum dosage of 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC. A random-effects model within a Bayesian framework was utilized to compare treatment effects and safety as odds ratios (ORs) with corresponding 95% credible intervals (CrI). The surface under the cumulative ranking area (SURCA) and median rank (MR) with corresponding 95% CrI were calculated to rank the treatment outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.
J. Robinson1, S. Crowe1, G. Whale1, K. Roberts1, M. West1, J. Ritter2, P. Irving1, S. Nurhbai1
1VHquest Ltd, Cambridge/United Kingdom
2Kings College London, London/United Kingdom
3Guys and St Thomas Hospital Dept. of Gastroenterology - Guys and St Thomas Hospital. dept. of Gas, London/United Kingdom

Contact E-mail Address: suhail.nurhbai@vhsquared.com

Introduction: The oral delivery of therapeutic concentrations of anti-TNF to affected mucosa of patients with inflammatory bowel disease (IBD) has remained a challenging endeavor despite advances in protein engineering, the attractions of oral dosing for chronic therapies, and the acknowledged benefit of anti-TNF monoclonal antibodies in the management of IBD. As the ileum is commonly involved in Crohn’s disease (CD), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibiotic to TNF, V565, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: Following prior placebo-controlled demonstration of the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibiotic to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h post dose with further collections 16, 24 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition, serial blood samples were taken for determination of V565 serum concentrations over 24 h.

Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of Crohn’s disease), post dose with further collections 16, 24 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition, serial blood samples were taken for determination of V565 serum concentrations over 24 h.

In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 166.5 mg dose contained a total of 135 MTs. 50 MTs were recovered 2 h post dose from Subject 31001; these MTs were stored as a potential control to provide additional ileal V565 to lesions distal to the ileum. This profile may be beneficial for IBD and merits further investigation as a potential oral treatment.

Disclosure of Interest: J. Robinson: J Robinson is an employee of the Sponsor company.
S. Crowe: S Crowe is an employee of the Sponsor company.
G. Whale: G Whale is an employee of the Sponsor company.
K. Roberts: K Roberts is an employee of the Sponsor company.
M. West: M West is an employee of the Sponsor company.
J. Ritter: J Ritter was a salaried employee of Quintiles at the time of the study; he has no other significant relationships.

Micromolar concentration of V565 in ileal fluid

<table>
<thead>
<tr>
<th>Hours post-dose</th>
<th>Subject</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>16</th>
<th>17–24</th>
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<tbody>
<tr>
<td>31001</td>
<td>406</td>
<td>306</td>
<td>0.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>31002</td>
<td>33</td>
<td>1130</td>
<td>792</td>
<td>82</td>
<td>13</td>
<td>5 (ave)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31003</td>
<td>1060</td>
<td>496</td>
<td>0</td>
<td>7</td>
<td>38 (ave)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31004</td>
<td>126</td>
<td>0.2</td>
<td>11</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In conclusion, the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibiotic to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h post dose with further collections 16, 24 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition, serial blood samples were taken for determination of V565 serum concentrations over 24 h. The oral delivery of therapeutic concentrations of anti-TNF to affected mucosa of patients with inflammatory bowel disease (IBD) has remained a challenging endeavor despite advances in protein engineering, the attractions of oral dosing for chronic therapies, and the acknowledged benefit of anti-TNF monoclonal antibodies in the management of IBD. As the ileum is commonly involved in Crohn’s disease (CD), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibiotic to TNF, V565, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: Following prior placebo-controlled demonstration of the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibiotic to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h post dose with further collections 16, 24 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition, serial blood samples were taken for determination of V565 serum concentrations over 24 h. The oral delivery of therapeutic concentrations of anti-TNF to affected mucosa of patients with inflammatory bowel disease (IBD) has remained a challenging endeavor despite advances in protein engineering, the attractions of oral dosing for chronic therapies, and the acknowledged benefit of anti-TNF monoclonal antibodies in the management of IBD. As the ileum is commonly involved in Crohn’s disease (CD), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibiotic to TNF, V565, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.
obviously evaluated by the IBD validated Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACT-F).

Aims & Methods: The main objective was to assess the efficacy of electroacupuncture (EAc) vs. sham EAc and no treatment for treating fatigue in patients with quiescent IBD in a single-blind randomized controlled trial. Secondary objectives were to assess changes in quality of life, depression, anxiety and sleepiness after treatment with EAc.

Methods: Fifty-two patients with quiescent IBD and severe fatigue (FACT-F ≤ 40) (65.3% female, mean age 42 years) were randomized to EAc vs sham acupuncture. Patients in the EAc group performed a total of 9 acupuncture sessions during eight weeks (2 sessions/first week and one session per week during the after the treatment periods. Results: Both EAc and Sham group improved the FACT-F score post-treatment (EAP -9.53 points, 95% CI (-12.3 to -6.75, Basal Vs 9th session p < 0.001); Sham group (-1.9 to -2.66, Basal Vs 9th session p = 0.063). Depression (8.9, 95% CI from 4.1 to 13.8, Basal Vs 9th session p = 0.002), anxiety (10.6 points, 95% CI from 3.6 to 17.6, Basal Vs 9th session p = 0.006) and sleepiness (1.46 points, 95% CI from 0.096 to 2.83, Basal Vs 9th session p = 0.038). However, the differences in between EAc and sham and control groups were not significant (p > 0.05).

Conclusion: Both targeted and sham electroacupuncture are effective in managing fatigue in patients with quiescent IBD.

References

P0382 EFFICACY AND SAFETY OF GOLIMUMAB IN CROHNS DISEASE: A FRENCH NATIONAL RETROSPECTIVE STUDY

C. Martineau1, B. Fournier2, P. Wils3, T. Vaysse4, R. Aliev5, A. Buisson6, B. Cachay7, E. Potier-Chambrenay6, C. Huriez6, A. Abirhol8, M. Funney5, X. Hebuterne5, S. Viennot11, D. Laharie12, L. Beaugerie1, S. Nancey2, H. Sokol1
1St Antoine Hospital, Paris/FRance
2Gastroenterology, CH Lyon Sud gastro secteur Jules Courtmont, Pierre Bentez Cedex/France
3Huriez Hospital, Lille/FRance
4Bicetre Hospital, Kremlin-Bicetre/FRance
5Hospital Saint Eloi Hepatologie entérologie, Montpellier/France
6Dept. Of Gastroenterology, CHU Esaix Clermont-Ferrand, Clermont-Ferrand/FRance
7Dept. Of Gastroenterology, Henri Mondor Hospital, APHP Dept. of Gastroenterology, Creteil/France
8Hospital Cochin Gastroentérologie, Paris/FRance
9Amiens University Hospital, Amiens/FRance
10Hospital Arche 2, Nice/FRance
11Hopital de Caen, Caen/FRance
12CHU de Rouen, Hopital Haut-Leveque dept. de Gastroenterologie, Pessac/FRance

Contact Email Address: klomartineau@gmail.com

Introduction: Anti-TNFs such as adalimumab (ADA) and infliximab (IFX), have improved the therapeutic care of Crohn’s disease (CD). However their use may be associated with loss of efficacy, adverse events and sometimes primary failure. After the first anti-TNF discontinuation, it is possible to switch to another anti-TNF. In France, three anti-TNF are available in ulcerative colitis (IFX, ADA and golimumab), but only the first two are approved in CD, because golimumab has not been studied in this indication. The aim of this study was to report golimumab efficacy and safety in CD.

Aims & Methods: This national multicenter retrospective study included patients with CD from 12 French tertiary centers who received golimumab and analyzed: clinical response, duration of treatment, tolerance, reasons for discontinuation of treatment, adverse effects and treatments preceeding and associated with golimumab. The main endpoint was the efficacy of golimumab defined by the treatment before failure (need for therapeutic optimization or cessation).

P0383 BIOLOGICS AND BIOSIMILARS: WHAT MATTERS TO PHYSICIANS? A. Molinari1, A. Louiza-Bonnilla2, D. Charles3
1Global Alliance for Patient Access, Washington, DC/United States of America
2Cancer Treatment Centers of America, Philadelphia, PA/United States of America
3Allergy, Immunology and Rheumatology, University College London, London/United Kingdom

Contact Email Address: pdavidcharles@gmail.com

Aims & Methods: The purpose of this survey was to determine physicians’ familiarity and comfort level with prescribing biosimilars to patients. The survey was sent to physicians residing in the European Union and specializing in the following clinical fields: dermatology, endocrinology, gastroenterology, oncology, and rheumatology.

Introduction: Biologic medicines and their biosimilar counterparts are effective therapies for many conditions, including inflammatory bowel disease, Crohn’s disease, and ulcerative colitis. The European Medicines Agency (EMA) has approved twenty-two biosimilar medicines, which are derivatives of eight original biologics, and four more biosimilar are scheduled to be reviewed this year. As the number of approved biosimilars rises, regulatory agencies must closely monitor their safety and efficacy.

Results: The majority of survey respondents specialized in endocrinology (19%) and gastroenterology (19%). Respondents were recruited almost equally from the five countries, with France being the most represented country (22%) and the UK being the least represented (18%). The majority (55%) indicated that safety and efficacy is the most important factor in determining whether a patient should be switched from a prescribed biologic therapy to its approved biosimilar. Thirty percent of respondents indicated that clinical trials related to the biosimilar’s condition being treated was the most important factor for switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and only 3% were primarily concerned with immunogenicity.

Conclusion: This survey suggests that the safety and efficacy of biosimilar medicines is of paramount importance to physicians and that physicians highly value clinical trial data for biosimilars. Given that biosimilars are structurally distinct from their original innovator biologics, the EMA should consider requiring more stringent clinical trials data for biosimilars seeking approval. Fifty percent of respondents indicated that clinical trials related to the biosimilar’s condition being treated was the most important factor for switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and only 3% were primarily concerned with immunogenicity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0384 ARE STEROIDS STILL USEFUL IN THOSE INFILAMMATORY BOWEL DISEASE PATIENTS UNDER IMMUNOSUPPRESSION? A RETROSPECTIVE POPULATION-BASED STUDY

L. Arias García1, G. Hontoria Bautista1, E. Badía Aranda1, F. Sáez-Royuela1, M. Gonzalo1, F. Gomollón1, B. Lucia Aladre1
1Servicio De Aparato Digestivo, H. Universitario Burgos, Burgos/Spain

Contact Email Address: baucillas@gmail.com

Introduction: Oral steroids are effective in inducing remission of moderate flares of patients with either ulcerative colitis (UC) or Crohn’s disease (CD). However, we know little about their efficacy in immunosuppressed patients or their possible role in reducing biologics and/or surgical needs in these patients.
**Table:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>CD</th>
<th>UC</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender (male)</strong></td>
<td>136 (52%)</td>
<td>71 (54%)</td>
<td>207 (53%)</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>46/4/1/18/18L2/36/L3 17/L4</td>
<td>52/E3/45/E2/3/E1</td>
<td>97 (25%)</td>
</tr>
<tr>
<td><strong>Behaviour</strong></td>
<td>75/B7/43/B2-3 25%Perianal disease</td>
<td>23 (18%)</td>
<td>72 (19%)</td>
</tr>
<tr>
<td><strong>Appendectomy</strong></td>
<td>91 (77%)</td>
<td>6 (5%)</td>
<td>97 (25%)</td>
</tr>
<tr>
<td><strong>Extraintestinal manifestations</strong></td>
<td>49 (19%)</td>
<td>23 (18%)</td>
<td>72 (19%)</td>
</tr>
<tr>
<td><strong>Smoke habit</strong></td>
<td>Smoker 84 (32%)</td>
<td>Smoker 17 (3%)</td>
<td>Smoker 101 (26%)</td>
</tr>
<tr>
<td><strong>Ex-smoker</strong></td>
<td>Ex-smoker 50 (19%)</td>
<td>Ex-smoker 12 (9%)</td>
<td>Ex-smoker 62 (16%)</td>
</tr>
<tr>
<td><strong>Non smoker</strong></td>
<td>Non smoker 126 (48%)</td>
<td>Non smoker 103 (78%)</td>
<td>Non smoker 229 (58%)</td>
</tr>
<tr>
<td><strong>Steroids at diagnosis</strong></td>
<td>200 (77%)</td>
<td>104 (79%)</td>
<td>304 (78%)</td>
</tr>
<tr>
<td><strong>Biological before IMM</strong></td>
<td>4 (2%)</td>
<td>0 (0%)</td>
<td>4 (2%)</td>
</tr>
<tr>
<td><strong>Surgery before IMM</strong></td>
<td>62 (24%)</td>
<td>2 (16%)</td>
<td>64 (16%)</td>
</tr>
<tr>
<td><strong>Surgery after IMM</strong></td>
<td>Classical 38 (63%)</td>
<td>Classical 18 (62%)</td>
<td>Classical 56 (63%)</td>
</tr>
<tr>
<td><strong>ECA</strong></td>
<td>Low biodisp 22 (37%)</td>
<td>Low biodisp 11 (38%)</td>
<td>Low biodisp 33 (37%)</td>
</tr>
<tr>
<td><strong>Smoker</strong></td>
<td>84 (32%)</td>
<td>23 (18%)</td>
<td>107 (28%)</td>
</tr>
<tr>
<td><strong>Ex-smoker</strong></td>
<td>50 (19%)</td>
<td>50 (19%)</td>
<td>100 (25%)</td>
</tr>
<tr>
<td><strong>Non smoker</strong></td>
<td>50 (19%)</td>
<td>40 (10%)</td>
<td>90 (23%)</td>
</tr>
</tbody>
</table>

**Aims & Methods:** We aimed to determine the efficacy of systemic or low bioavailability immunosuppressive treatment (ADA) for moderate to severe active Crohn's disease (CD) in patients treated according to the local product label. The study was an observational, non-interventional post-marketing registry assessing the long-term safety and effectiveness of ADA-naive patients with moderate to severe active Crohn's disease (CD), with or without prior ADA experience. The registry included patients 18 to 70 years of age with moderate to severe active Crohn's disease (CD) who were treated according to the local product label. The study was conducted in the United States and included 5025 patients evaluated in the registry. Participants were followed for a median of 13 months (0–178). A total of 304 patients (78%) had moderate to severe disease (CD) and 72 (19%) had at least one steroid treatment during follow-up (63% systemic steroid and 37% low bioavailability oral steroid). A median time of steroid treatment of 4 (1–168) months. Average time from IM to steroid treatment was 26 (6–207) months. In CD patients there were no differences regarding sex, age, disease location, gender, disease duration, extra intestinal manifestations, appendectomy, smoking habit, need for steroids at diagnosis and previous abdominal surgery between patients with no need of steroids and patients with steroid treatment during follow-up. In CD patients, biological treatment for perianal disease before IMM (p = 0.009) and fistulizing (B3) behavior (p = 0.005; OR: 2.284) were risk factors for using steroids after IMM treatment. In UC patients, no statistically significant variables were identified. 49 of these 89 steroid treatment patients (55%) needed biological treatment or surgery after a median of 13 months (0–178). 19 (21%) needed more than one steroid treatment (2–5) and just 31 patients (35%) did not need any other treatment. CD patients had higher risk (p = 0.007; OR: 3.529) to receive biological treatment or surgery versus UC patients. Otherwise, the months using steroids in UC patients, the greater risk for biological or surgery treatment (p = 0.009). During follow-up, it's not statistically significant (p = 0.078), we observe that 75% probability of rescue treatment for UC patients in 62 months (0–178) months for CD patients. Conclusion: 23% of CD immunosuppressive patients needed at least one steroid treatment after 6 months of IMM. Previous biological treatment and B2-B3 behavior predicted steroid treatment in CD patients, who had 3.5 times more risk to receive biological treatment or surgery after steroid treatment using it earlier than UC patients. Just 1/3 of patients who needed steroid treatment after IMM did not need any other rescue treatment.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

[1] Mayo Clinic College of Medicine, Rochester/United States of America/MN
[2] Academic Medical Center, Amsterdam/Netherlands
[3] Medical University of Vienna, Vienna/Austria
[4] University Of Edinburgh, Gastrointestinal Unit, Edinburgh/United Kingdom
[5] University of Calgary, Calgary/Canada
[7] AbbVie Deutschland GmbH & Co. KG, Ludwigsburg/Germany

**Contact E-mail Address:** loftus.edward@mayo.edu
P0386 EFFECT OF ADA rimABUM ON CLINICAL AND HEALTH-RELATED QUALITY OF LIFE OUTCOMES BY DISEASE SEVERITY AND PRIOR TUMOUR NECROSIS FACTOR INHIBITOR USE IN PATIENTS WITH ULCERATIVE COLITIS IN A CLINICAL PRACTICE SETTING: SUBGROUP ANALYSES FROM INSPIRADA


1Oxford University Hospitals, Oxford, United Kingdom
2Robarts Research Institute, London, Canada
3University of Calgary, Calgary, Canada
4Istituto Clinico Humanitas, Milan, Italy
5AbbVie Inc., North Chicago/United States of America
6AbbVie Deutschland GmbH & Co. KG, Ludwigshafen/Germany

Introduction: Adalimumab (ADA) has been shown to improve clinical outcomes and health-related quality of life (HRQoL) significantly in patients (pts) with ulcerative colitis (UC) in a clinical practice setting. Evidence is limited about benefits of ADA among UC pts with different characteristics.

Aims & Methods: The aim was to examine clinical and HRQoL effects of ADA in pts with UC based on disease severity and prior use of tumour necrosis factor inhibitor (TNFi). INSPIRADA details have been published. Pts received ADA 160 mg at week (wk) 0,2 followed by ADA 40 mg at wk 4 through 26. Pts who did not respond to ADA by wk 8 were to discontinue. Pts who lost response or had severe UC pts could escalate to ADA 40 mg weekly. UC pts were categorized into subgroups based on physician global assessment (PGA) of disease severity (moderate [baseline PGA <= 2] vs severe [baseline PGA = 3]) and previous TNFi use (naive vs experienced).

Results: Among pts with moderate UC (n = 386) and severe UC (n = 74), SCCAI response rates were 74.6% vs 74.3%, 80.1% vs 71.6%, and 67.1% vs 64.9% at wk 2, 8, and 26, respectively. Although remission rates were similar between moderate and severe pts at wk 26 (49.5% vs 40.5%, p = 0.16), ADA provided greater disease control for moderate pts at wk 2 (29.8% vs 9.5%, odds ratio [OR] 4.195% confidence interval [CI] 1.8–9.1; p < 0.0001) and wk 8 (52.3% vs 31.1%, OR 2.4, 95% CI 1.4–4.4; p = 0.01) compared to severe pts (Table). The rate of disease escalation (ADA 40 mg weekly) was 28.0% in moderate and 28.4% in severe UC pts. HRQoL outcomes were similar between the moderate and severe cohorts. Among pts who were naive (n = 389) and those experienced to TNFi, remission response rates were 90% vs 74.0%, 80.9% vs 76.2%, 79.2% vs 75.5%, and 66.3% vs 68.4% at wk 2, 8, and 26, respectively. No significant difference was observed in remission rates for naïve vs experienced pts at wk 2 (28.0% vs 19.4%, p = 0.43) and wk 26 (49.4% vs 41.7%, p = 0.23), but naïve pts showed a significantly higher remission rate than experienced pts at wk 8 (52.5% vs 31.9%, OR 2.1, 95% CI 1.2–3.7; p < 0.0001). The rate of disease escalation was 26.5% in naïve vs 36.1% in experienced pts (p = 0.09). In general, HRQoL outcomes were similar between naïve and experienced TNFi pts.

Table: Remission rate by disease severity and previous use of TNFis

<table>
<thead>
<tr>
<th>Remission rate, n (%)</th>
<th>Moderate UC (n = 386)</th>
<th>Severe UC (n = 74)</th>
<th>Odds ratio (95%CI)*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 2</td>
<td>115 (29.8%)</td>
<td>7 (9.5%)</td>
<td>4.06 (1.81–9.12)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Wk 8</td>
<td>202 (52.3%)</td>
<td>23 (31.3%)</td>
<td>2.43 (1.43–4.40)</td>
<td>0.001</td>
</tr>
<tr>
<td>Wk 26</td>
<td>191 (49.5%)</td>
<td>30 (40.5%)</td>
<td>1.44 (0.87–2.38)</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Conclusion: ADA treatment achieved clinically relevant rates of SCCAI response and remission even in pts who had severe UC and those who were more treatment-refractory (experienced to TNFis), in clinical practice. In addition, ADA was associated with greater disease control in the induction period for pts with moderate than severe UC and for naïve pts than those experienced to TNFis.

Disclosure of Interest: S. Travis: Adviser, grants, lecturer; AbbVie; Asahi; Boehringer; BMS; Cosmo; Eli; Ferring; FPRT Bio; Genentech/Roche; Genzyme; Glenmark; GW; Lilly; Merck; Novartis; Novo Nordisk; Oceca; Pfizer; Shire; Santarus; SigmoidPharma; Synthion; Takeda; Tillotts; Topiev;... Funding Statement: Financial support for the study was provided by AbbVie. AbbVie participated in the interpretation of data, review, and approval of the abstract. All authors contributed to the development of the publication and maintained control over the final content.

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Cmax ranged from 5016.4 to 14253.6 μg/mL and 10.0 to 23.1 μg/mL, respectively. The next cohort was conducted subsequently from low dose to high dose. The PK profiles after a single SC injection were linear by dose levels. SC administration of CT-P13 is feasible in terms of bioavailability and safety. Bioavailability of CT-P13 SC was approximately 60.6%, (mean range 11.3 to 13.7 days vs. 11.7 to 12.2 days) between SC and IV formulation. Mean AUC0-last and T1/2 values were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in IV administration of CT-P13 in healthy subjects. In a single dose escalation study, 38 male subjects with median age of 23 years (range 19, 30 years) were treated with CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profile of SC and IV formulation was evaluated by measuring the AUC0-∞, Cmax, Tmax and T1/2.

Results: A total of 38 male subjects with median age of 23 years (range 19, 30 years) were treated with CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profile of SC and IV formulation was evaluated by measuring the AUC0-∞, Cmax, Tmax and T1/2.

Conclusion: Biological therapy has been highly effective for inflammatory bowel disease (IBD). In addition to anti-tumour necrosis factor (anti-TNF) drugs, a gut-selective anti-inflammatory biologic, vedolizumab (VDZ), has been approved since 2014. However, the real-world comparative effectiveness of VDZ and anti-TNF has not been fully investigated.

Disclosure of Interest: Treatment with intravenous (IV) PT-P13, a biosimilar infliximab (INX) licensed for use in 80 countries, is highly effective and well tolerated. To increase treatment modalities with CT-P13 for patients, a new subcutaneous (SC) formulation was developed.

Aims & Methods: This phase I and open label study, conducted at a single site in Korea, was designed to evaluate safety and pharmacokinetics (PK) of SC administration of CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profile of SC and IV formulation was evaluated by measuring the AUC0-∞, Cmax, Tmax and T1/2.

Results: A total of 38 male subjects with median age of 23 years (range 19, 30 years) were treated with CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profile of SC and IV formulation was evaluated by measuring the AUC0-∞, Cmax, Tmax and T1/2.
Disclosure of tumour necrosis factor antagonists (anti-TNF) treatment in this populations is ill-defined.

Aims & Methods: To assess the main adverse events (AE) of this therapy in the elderly population in comparison with the younger patients, we performed a retrospective cohort study of patients with IBD that initiated treatment with anti-TNF agents in October 2003 and 2014, with a follow-up until December 2013. Demographic, clinical and medication data were collected. AE (including opportunistic, malignancy, dermatologic, neurologic, cardiac and vascular, hepatic, infusion reactions and others) occurring during anti-TNF treatment in elderly and younger patients were analysed and both groups were compared. The severe AE definitions from Food and Drug Administration (FDA) and European Medicines Agency (EMA) were used.

Results: Of the 219 patients (55.3% women; average disease duration 13.60 ± 7.74 years), 25 were more than 65 years-old (elderly group, mean age 70.0 years vs. younger group, mean age 41.77 years). Infliximab was used in 174 patients (on average 1585 days) and adalimumab in 93 (on average 1379 days), with a total 1106 years of anti-TNF exposure. In the elderly, azathioprine was used less frequently (80.0 vs. 90.0%, p = 0.008). There were 46 severe AE overall, including 18 cancers and 16 opportunistic infections (5 tuberculosis). Malignancy (20.0% vs. 6.7%, p = 0.039) and cardiovascular events (16.0 vs. 4.1%, p = 0.036) occurred more frequently in the elderly, whereas dermatologic AE were more common in the younger group (4.0 vs. 0.0%, p = 0.044). The severe AE (24.0 vs. 20.1%, p = 0.794) including death (4.0 vs. 2.6%, p = 0.521) was not significantly different between groups.

Conclusion: Despite being at higher risk of malignancy and cardiovascular events, the total number of severe adverse events was not significantly increased in elderly patients. Particular attention to malignancy surveillance and treatment of cardiovascular comorbidities is advised in this population.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest: F. Argüelles Arias, : Advisory boards and has received financial support to attend scientific meetings from Kerra Pharma. All other authors have declared no conflicts of interest.

References

P0390 CLINICAL RESPONSE TO VEadoluzumab in IBD Patients is Associated with the Concomitant Use of ImmunoMODulators
I. Parisi, R. Vega, L. Whitely, S. Bloom, S. Mccartney
GI Medicine, University College London Hospitals, London/United Kingdom

Contact E-mail Address: ioannparisis@hotmail.com

Introduction: The role of biologics in medical management of inflammatory bowel disease (IBD) has been established since anti-TNF agents invaded the market several years ago. Vedolizumab, an anti-integrin gut-selective molecule, is a more recent biologic treatment which has been approved for the management of both Crohn’s disease and ulcerative colitis. Its efficacy in inducing and maintaining remission was shown in GEMINI studies, although a good percentage of the trial participants had previously failed anti-TNFs. We conducted this study in order to describe outcomes in a real-life cohort of IBD patients who were treated with Vedolizumab, consisting both of previously anti-TNF exposed but also anti-TNF naive patients. Multivariate analysis searched for factors associated with response to treatment.

Aims & Methods: All patients with IBD who received at least three doses of Vedolizumab in UCLH since the drug was officially licensed in the UK were included in the study. Demographics, clinical and endoscopic response rates were recorded and analysis was conducted in the whole cohort and in the subgroups of Crohn’s and UC patients separately. Univariate analysis and logistic regression were conducted in order to identify important associations with clinical and/or endoscopic response.

Results: 59 patients with IBD were treated with vedolizumab from May 2015 to October 2016. 28 (47%) had Crohn’s disease and the majority (n = 43, 73%) had mainly colonic inflammation (12 colonic Crohn’s, 29 UC, 2 IBDU). Median time from anti-TNF exposure to Vedolizumab initiation was 8 years. 17 (29%) were anti-TNF naive (all UC) and 28 (67%) had previously failed both Infliximab and Adalimumab. 36 (61%) were on a concomitant immunomodulator (IM), either Methotrexate (18) or Azathioprine (7). 14 (24%) patients had a clinical response to Vedolizumab based on a reduction of Harvey-Bradshaw index (HBI) from baseline ≥3 points for Crohn’s patients or a reduction of partial Mayo score ≥2 points for UC patients. The rates of response were similar in Crohn’s and UC patients while there was no difference in response according to gender, previous anti-TNF exposure, disease duration or location of inflammation. Patients on no concomitant IM were less likely to respond to Vedolizumab (Odds ratio 0.26, 95%CI 0.07–0.91, p = 0.036). 11(18.6%) patients experienced adverse events while treated with Vedolizumab, five of which related to active IBD. There were two minor allergic reactions and two mild inflections.

Conclusion: Clinical response to Vedolizumab was observed in two-thirds of our IBD patients, similarly in Crohn’s disease and ulcerative colitis. Concomitant IM were the only factor which was importantly associated with a higher response rate. Overall there were no serious adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0392 CORRELATION OF RELATIONSHIP BETWEEN INFliximab TRough AND ANTIBODY LEVELS WITH CLINICAL RESPONSE RATES AT COMPLETION OF INDUCTION THERAPY

D. Tighe1, S. Smith2, A. O’Connor2, B. Ryan1, N. Breslin1, D. McNamara1
1Gastroenterology Trinity Academic Gastricenterology Group (TAG), AMNCH Tallaght, Dublin/Ireland
2Trinity Academic Gastroenterology Group, Trinity College Dublin, Dublin/Ireland

Contact E-mail Address: donalitätighe83@gmail.com

Introduction: Anti-TNFα therapies have helped improved response rates, reduced complication rates, and quality of life for patients with inflammatory bowel disease (IBD). However primary loss of response (LOR) is still a big concern. Therapeutic Drug Monitoring (TDM) potential of adjust- dosing of anti-TNFα in a treat to target fashion. The end of anti-TNFα induction therapy is a key time point in the management of IBD. TDM is a useful method to help explore an immune basis behind LOR. In addition anti-TNFα trough levels, are a significant predictor of future likelihood of clinical response and mucosal healing.

Aims & Methods: The aim of this study was to explore the relationship between infliximab (IFX) and adalimumab (ADA) trough and antibody levels with clinical response rates, at the end of anti-TNFα induction therapy. This was a prospective, single-centre study. Patients were recruited from the gastroenterology department at our centre, from July 2015 to August 2016. Inclusion criteria were all patients older than 17 years old with IBD who started treatment with anti-TNFα drugs, either infliximab or adalimumab, during the study period. Patient demographics, medication and clinical history were collected from the electronic hospital information system. Baseline clinical disease activity indexes were per- formed. The Haemorrhage Index for Crohn’s disease (CD), and partial Mayo scores for Ulcerative colitis (UC). Clinical response was defined as reduction in HBI ≤2 or reduction in partial Mayo score ≤4 and ≥30% from baseline. Anti-TNFα trough and antibody levels were measured using standard ELISA techni- ques.

Results: 35 patients were recruited: 23 CD, 12 UC. 18 patients were treated with IFX, trough and antibody levels, are a significiant predictor of future liklihood of clinical response rates. For infliximab, mean trough levels in responders was 16.4 ug/ml (IQR 4.9-22.7) versus 5.5 ug/ml (0.5-8.8) for non-responders (p value 0.026 95% CI 1.24-8.43). Antibody forma- tion occurred in 6 patients (17.1%). The patients who had primary non- response, 18/35 (51.4%) had doses of anti-TNFα escalated, 7/17 (41.1%) for infliximab, and 11/18 (61.1%) for adalimumab. 4 patients required surgical intervention. The proportion of patients with histological remission at week 8 was significantly higher in the budesonide group than in the placebo group (intention-to-treat (ITT) 79% vs 42%; p = 0.001). The difference in clinical remission at week 8 between mesalazine (63%) and budesonide (68%) was not statistically significant (p = 0.099). The proportion of patients with histological remission at week 8 was higher with budesonide (68%) than with mesalazine (26%; p = 0.02) and placebo (21%; p = 0.008). The rate of adverse events did not differ among groups.

Conclusion: Oral budesonide 9 mg once daily is highly effective and safe for induction of clinical and histological remission in lymphocytic colitis, while oral mesalazine 3 g once daily was only numerically, but not statistically signifi- cantly better than placebo.

Disclosure of Interest: S. Mielck: Prof. Mielcke receives lecture fees and travel costs
T. Naac: I am employee at Dr. Falk Pharma GmbH.
T. Greinwald: Dr. Greinwald is employee at Dr. Falk Pharma GmbH
All other authors have declared no conflicts of interest.

Reference

P0394 PREGNANCY OUTCOMES IN THE TOFACITINIB ULCERATIVE COLITIS OCTAVE STUDIES

1University of California, San Francisco/United States of America/CA
2Department Of Gastroenterology And Hepatology, Charité Medical Center Virchow and Medical School of the Humboldt, University of Berlin, Berlin/Germany
3Icahn School of Medicine at Mount Sinai, New York/United States of America/ NY
4Pfizer Inc, Collegeville/United States of America/PA
5Division Of Gastroenterology, Scripps Clinic, La Jolla, San Diego/United States of America/CA
6Krankenhaus der Barmherzigen Brüder, Salzburg/Austria

Contact E-mail Address: daniel.baumgart@charite.de

Introduction: A pregnant woman with ulcerative colitis (UC), compared with age- matched controls, is at higher risk of adverse outcomes including spontaneous abortion, preterm birth and low birth weight.1,2 Tofacitinib is an oral, small molecule Janus kinase inhibitor that is being investigated for UC. Tofacitinib has been shown to be foetidial and teratogenic in both rats and rabbits at exposures 146 times and 13 times, respectively, the human dose of 5 mg twice daily (BD). There is no adequate and well-controlled studies of tofacitinib in pregnant women.

Aims & Methods: We report the pregnancy outcomes from three randomised, placebo-controlled studies (OCTAVE Induction 1, NCT01465763; OCTAVE Induction 2, NCT01485951; OCTAVE Sustain, NCT01485874) and one ongoing open-label extension study (OCTAVE long-term study, NCT01470612) of tofa- citinib monoclonal antibody in patients (pts) with moderate to severe UC.3,4 Pregnancy outcomes following maternal or paternal exposure to tofacitinib or 5 mg BD were identified from Pfizer’s internal safety database up to 23 March, 2017, and categorised as: healthy newborn, medical termination, foetal death, congenital malformation, spontaneous abortion or pending/lost to follow-up. Trial proto- cols required use of highly effective contraception for females of childbearing potential, and study drug to be discontinued in any female pts who became pregnant.

Results: A total of 1139 unique pts (incl. placebo) enrolled in the UC OCTAVE trials, of whom 296 were females of childbearing age. There were a total of 25 pregnancies reported with exposure to tofacitinib. Of these, 11 were cases of maternal exposure, all during the 1st trimester, including: 2 (18.2%) spontaneous abortions (5 mg BD, n = 1; 10 mg BD, n = 1), 2 (18.2%) medical terminations (both 10 mg BD), 4 (36.4%) healthy newborns (all on 10 mg BD) and 3 (27.3%) cases of pending/lost to follow up (all on 10 mg BD). Out of the 14 cases of patient exposure, 11 (78.6%) were healthy newborns (5 mg BD, n = 2; 10 mg BD, n = 9) and 3 (21.4%) were pending/lost to follow-up (5 mg BD, n = 1; 10 mg BD, n = 2). Overall, there were no cases of foetal death or congenital malformation.

Reference
Safety assessments were performed on all patients in this study. All adverse events (AEs) during the study period were recorded. AEs for which the causality of tofacitinib could not be ruled out were defined as side effects (SEs). Feasibility problems (FPs) included blood withdrawal difficulty, venous pressure elevation, coagulation in the apheresis system and venous access difficulty. The safety of GMA was investigated in the following six special situation subgroups: the elderly (≥65 years), concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia (haemoglobin <10 g/dl), paediatric (<18 years) and other groups. We also compared AEs, SEs and FPs between the subgroups with/without each special situation by univariate analysis. The efficacy of GMA was also assessed in patients with UC. Patients with a partial UC disease activity index score (pUC-DAI) of ≤3, those with missing pUC-DAI scores and those receiving concomitant treatment with infliximab, adalimumab, tacrolimus or cyclosporine were excluded from efficacy analysis. pUC-DAI scores were calculated at the baseline and then after the final GMA session or when the GMA therapy had to be discontinued because of AEs or FPs. Remission was defined as a pUC-DAI score of ≤2 with no individual sub-score exceeding 1 point. Patients who received additional treatment by the final GMA session, including infliximab, adalimumab, tacrolimus and cyclosporine, were considered non-responders to GMA.

Results: This study included 363 patients (304 UC, 59 CD). Among these patients, SEs and FPs were observed in 3.0%, 10.7% and 16.3% of the patients, respectively. There were 105, 112, 103, 89, 43 and 39 patients in the elderly, concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia, paediatric and other groups, respectively. The incidence of AEs was significantly higher in patients on multiple concomitant immunosuppressants compared with those not receiving them. Likewise, the incidence of AEs was significantly higher in patients of the anaemia group compared with patients with haemoglobin ≥10 g/dl. The incidence of FPs was significantly lower in patients of the retreatment group with GMA than in those who received non-responders to GMA. The pUC-DAI score significantly decreased from 6.2 at baseline to 3.4 after the final GMA session (P < 0.001) and the remission rate at the final GMA session was 43.5%.

Conclusion: This multi-centre observational study showed that GMA has an acceptable safety profile in IBD patients and sufficient effectiveness in UC patients who have special situations. However, care should be taken when GMA is used in patients with anaemia or those who have received concomitant treatment with multiple immunosuppressants.

Disclosure of Interest: H. Tanaka: Lecture fee(s) from JIMRO Co., Ltd. T. Shibuya: unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd. T. Osada: unrestricted grant from JIMRO Co., Ltd. Financial support for research from JIMRO Co., Ltd. S. Kukuma: employee of JIMRO Co., Ltd. E. Hosoi: Employee of JIMRO Co., Ltd. All other authors have declared no conflicts of interest.
state-wide hospital records. Psychological support was offered where scores on HADS and/or K6 indicated likely need.

Results: 506 patients were approached during the 12-month screening phase; 50.6% were male, 70.8% used clean intermittent catheterization, mean disease duration of 11.4 years, 43.3% in clinical remission, and 9.8% current smokers (Australia’s average 13.3%). Of these 506, 67% participated in psychological screening, 38% scored within the clinical range, and 17% accepted psychological support. Gender was a significant predictor of participation in psychological screening: women were 62% more likely to participate than men. Analogies and/or mental health medication increased the likelihood of scoring within the clinical range nearly fivefold (analyse use OR = 5.32, p = .030; psycho OR = 6.94, p = .001). Significant predictors of accepting psychological treatment included older age (OR = 1.03, p = .041), anxiety (OR = 1.09, p = .045), general distress (OR = 1.11, p = .003) and lower quality of life (OR = 0.93, p = .042). At baseline, anxiety and depression were both negatively correlated with medication adherence (anxiety r = -.323, p = .000, depression r = -.200, p = .000) and overall quality of life (anxiety r = -.708, p = .000; depression r = -.787, p = .000). Depression and general distress were related to overall healthcare utilisation (depression r = -1.31, p = .016, general distress r = -1.124, p = .026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of emergency department presentations (r = 1.24, p = .024), outpatient appointments (r = -119, p = .030), and appointment cancellations (r = -155, p = .055). Currently, approximately half of the twelve month follow-up data has been collected. Preliminary analysis shows improvements for patients’ mental health, quality of life and medication adherence (see table below).

Table 1: Outcomes of psychological support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Screening (Mean)</th>
<th>SD</th>
<th>Follow-up (Mean)</th>
<th>SD</th>
<th>t value</th>
<th>p value</th>
<th>ETA²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>12</td>
<td>3.6</td>
<td>9</td>
<td>4.1</td>
<td>4.87</td>
<td>.000***</td>
<td>0.56</td>
</tr>
<tr>
<td>Depression</td>
<td>8.8</td>
<td>3.9</td>
<td>6.4</td>
<td>5.0</td>
<td>4.34</td>
<td>.000**</td>
<td>0.30</td>
</tr>
<tr>
<td>Distress</td>
<td>18.2</td>
<td>4.8</td>
<td>13.9</td>
<td>5.1</td>
<td>7.47</td>
<td>.000***</td>
<td>0.56</td>
</tr>
<tr>
<td>Mental QoL</td>
<td>51</td>
<td>15.9</td>
<td>60.6</td>
<td>18.5</td>
<td>-4.91</td>
<td>.000***</td>
<td>0.39</td>
</tr>
<tr>
<td>Physical QoL</td>
<td>72.5</td>
<td>14.9</td>
<td>75.0</td>
<td>17.7</td>
<td>-1.50</td>
<td>.142</td>
<td>0.06</td>
</tr>
<tr>
<td>Total QoL</td>
<td>57.6</td>
<td>14.6</td>
<td>65.1</td>
<td>17.4</td>
<td>-4.39</td>
<td>.000***</td>
<td>0.34</td>
</tr>
<tr>
<td>Medication adherence</td>
<td>5.1</td>
<td>2.0</td>
<td>5.7</td>
<td>2.2</td>
<td>-2.03</td>
<td>.049**</td>
<td>0.09</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

Conclusion: Psychological issues are prevalent in patients with IBD and associated with decreased quality of life and medication adherence. Screening is more likely to participate in psychological screening, and in general the screening approach was widely accepted. In addition, high proportions of patients reported clinical levels of distress (irrespective of their IBD activity) and went on to accept psychological intervention. All of which demonstrate a widespread need for support in this cohort. Furthermore, preliminary data of treatment outcomes are promising. At study completion we will be better able to clarify the extent to which patients with IBD benefit from this new integrated approach.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0397 LONG-TERM EFFICACY, SAFETY, AND IMMUNOGENICITY DATA FROM A PHASE III CONFIRMATORY STUDY COMPARING GP2017, A PROPOSED BIOSIMILAR, WITH REFERENCE ADALIMUMAB

A. Blauvelt1, J. Lacour2, J. F. Fowler3, E. Schuck4, J. Jauch-Lembach4, A. Balfour5, C. L. Leonardi3

1Oregon Medical Research Center, Portland/United States of America
2University of Nice Sophia Antipolis, France
3Dermatology Specialists, Louisville/United States of America
4Hexal AG, Holzkirchen/Germany
5Central Dermatology, St Louis/United States of America

Contact E-mail Address: julia.jauch-lembach@sandoz.com

Introduction: Demonstration of biosimilarity is based on the evaluation of pharmacological, biological, preclinical, and clinical data. Based on this totality of evidence, a biosimilar may be approved for use in the same indications for which the reference medicine is approved without conducting a clinical trial in each indication. A prerequisite for this extrapolation is clinical confirmation of biosimilarity in a patient population sensitive enough to detect potential differences in efficacy, safety, or immunogenicity between the proposed biosimilar and the reference medicine. GP2017, a proposed biosimilar to adalimumab, was approved, including inflammatory bowel disease.

Aims & Methods: To evaluate long-term efficacy, safety, and immunogenicity in patients continuously treated with either GP2017 or reference adalimumab from initial randomization to Week 51. Eligible patients were moderate-to-severe chronic plaque psoriasis randomized to receive an initial dose of 80mg subcutaneous GP 2017 or reference adalimumab, followed by 40mg every other week, starting one week after the initial dose, up to 17 Week. At Week 17, patients with ≥50% improvement in Psoriasis Area and Severity Index (PASI 50) at Week 16 were re-randomized in a 2:1 ratio to either remain on their initial study treatment or undergo a sequence of three treatment switches between GP 2017 and reference adalimumab until Week 35. Thereafter, patients were returned to their originally randomized treatment up to Week 51.

Results: From randomization to Week 51, 168 and 171 patients received continuous treatment with GP 2017 or reference adalimumab, respectively. In the protocol analysis set, PASI 75 response rates for continual GP2017/reference adalimumab at Weeks 17 and 51 were 75.2% and 79.2%, respectively. The investigator’s global assessment (IGA) response rates (IGA score of 0 [clear] or 1 [almost clear] and ≥2 point improvement from baseline) were similar between the continual GP2017/reference adalimumab groups, improving from time and remaining stable from Week 17 (60.5% [53.9%]) to Week 51 (59.8% [55.1%]). There were no clinically relevant differences between the continual GP2017/reference adalimumab groups in the frequency of adverse events (AEs) (61.3%/64.9%), treatment-related AEs (17.9%/18.7%), serious AEs (3%/3.8%), or AEs leading to discontinuation of study drug (7.9%/7.8%). Infections/infestations were the most commonly reported AEs, with nasopharyngitis most frequently reported by 8.9%/10.5% of patients treated with continual GP2017/reference adalimumab. Between Weeks 1 and 51, binding antidrug antibodies were detected in 38.8%/45.3% of patients treated with continual GP2017/reference adalimumab, 88.7%/84.7% of which were neutralizing.

Conclusion: Efficacy was similar and sustained in patients with psoriasis continuously treated with GP 2017 or reference adalimumab for up to 51 weeks. Safety profiles and immunogenicity were generally similar in both groups. Clinical data add to the totality of evidence suggesting GP 2017 could be used as a biosimilar for the treatment of the same indications for which reference adalimumab is approved, including inflammatory bowel disease.

Disclosure of Interest: A. Blauvelt: Investigator for Sandoz

J. Lacour: Investigator for AbbVie, Aman, BMS, BI, Celgene, Galderna, Janssen, LEO Pharma, Lilly, MSD, Novartis, Pfizer, Regeneron, Roche, Sandoz.

J. Jauch-Lembach: Paid employee of Hexal AG, a Sandoz company

A. Balfour: Paid employee of Hexal AG, a Sandoz company

C.L. Leonardi: Consultant for AbbVie, Aman, BI, Dermira, Janssen, Eli-Lilly, Leo, Sandoz, UCB, Pfizer and Vitae and member of the Speaker bureau for Abbvie, Celgene, Novartis and Eli Lilly.

P0398 PREDICTIVE FACTORS OF RESPONSE TO GRANULOCYTE MONOCYTE APOPLEXY IN INFLAMMATORY BOWEL DISEASE

I. Rodriguez - Lago1, J.M. Bentive-Cantero2, V. Garcia-Sanchez2, L. Sempere2, A. Gutierrez1, I. Galonda1, A. Rodriguez-Pescador1, E. Fernandez2, I. Lafuente3, A. Loroño3, J.L. Cabrera3

1Gastroenterology, Hospital de Galakau, Galakau/Spain
2Gastroenterology, Hospital Universitario Reina Sofia, Cordoba/Spain
3Gastroenterology, Hospital General Universitario de Alicante, Alicante/Spain
4Dialysis Unit, Hospital de Galakau, Galakau/Spain
5Research Unit. Red De Investigacion En Salud En Enfermedades Cronicas (redissc)/.; Hospital de Galakau, Galakau/Spain

Contact E-mail Address: iago.r.lago@gmail.com

Introduction: Granulocyte-monocyte apheresis (GMA) can be employed for the treatment of inflammatory bowel disease (IBD), especially for ulcerative colitis (UC). The usual treatment schedule is a weekly session for 5 weeks processing 1800 ml in 60 minutes. It has been described that different factors of the disease and the technique can improve the response to this treatment.
Aims & Methods: We performed a retrospective study of all patients treated with GMA (Adacolumn) in 3 IBD Units in Spain. The clinical and analytical data were assessed before and 1 month after the end of the GMA. The Ethics Committee of Euskadi approved the study protocol. The aim of our study was to evaluate the presence of clinical, analytical of technique-related factors associated to a better response to GMA.

Results: A total of 105 patients were included (51 female, 49%, age 35.7 (SD 16.5). Ninety-three had UC (50% extensive, 45% left-sided), 10 Crohn’s disease (90% ileocolonic) and 2 IBD-U. Mayo score at baseline was 3.5 (SD 4.6) and Harvey – Bradshaw was 10.1 (SD 3.8). The Mayo endoscopic subscore was 1 (16%), 2 (56%) or 3 (27%). Almost all patients (97%) have been previously treated with steroids and 42% were exposed to biologics. At baseline, 85% were on steroids, 38% thiopurines and 18% biologics. None of the previous or concomitant treatments were associated with a better response to GMA. Fifty-six subjects received weekly sessions for 5 weeks processing 1800 ml/session in 60 minutes. Forty patients received an intensive GMA regimen: biweekly sessions with a mean of 8 sessions (SD 2.6), processing 388 ml/session (SD 1729) and lasting 1 minute (SD 24). The intensive group showed a slightly higher response rate to GMA as compared with those in the standard regimen (response rate 67% vs 55%, p = 0.28). Those subjects treated with > 5 sessions showed higher remission (24% vs 13%) and response rates (47% vs 24%) as compared to <5 sessions (p = 0.004). A mean duration of >60 min/session also showed better results in terms of remission (22% vs 16%) and response (45% vs 27%) when compared to <60 min/session (p = 0.04). There was also a trend towards higher remission rates in those with higher processed blood volume. Thirty-nine percent were able to wean off steroids completely one month after GMA. We observed a decrease in the mean platelet volume and the platelet to lymphocyte ratio after GMA in those cases who did not respond. Considering its clinical efficacy in this clinical practice study. Increasing the number of sessions or its length were associated with a better response to GMA. The mean platelet volume and the platelet to lymphocyte ratio could help to predict the response.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0399 ANDECALIXIMAB (ANTI-MMP9) INDUCTION THERAPY FOR ULCERATIVE COLITIS: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, PHASE 2 STUDY
1University of California, San Diego/United States of America
2Delta Research Partners, Monroe/United States of America
3GastroOne, Germantown/United States of America/AL
4Gastroenterology Research of America/U. of Texas, San Antonio/United States of America/AL
5Istituto Clinico Humanitas IBD Center, Milan/Italy
6University of California, San Diego/United States of America
7Delta Research Partners, Monroe/United States of America
8GastroOne, Germantown/United States of America
9Gilead Sciences, Foster City/United States of America

Contact E-mail Address: wsandborn@ucsd.edu

Andecaliximab in subjects with active Crohn’s disease (CD). Selective inhibition of MMP-9 reduced fibrosis in a murine model of intestinal fibrosis, suggesting that MMP-9 may contribute to intestinal complications in CD. Accordingly, MMP-9 has been proposed as a therapeutic target for CD. Andecaliximab (GS-5745) is a monoclonal antibody that selectively binds to CAM-5.7 and inhibits MMP-9. It was found to be safe in a phase 1 dose-ranging study in UC subjects, where it showed clinical response and remission compared to placebo. The aim of this phase 2 study was to evaluate the safety and efficacy of andecaliximab in patients with active Crohn’s disease (CD). Selective inhibition of MMP-9 reduced fibrosis in a murine model of intestinal fibrosis, suggesting that MMP-9 may contribute to intestinal complications in CD. Accordingly, MMP-9 has been proposed as a therapeutic target for CD. Andecaliximab (GS-5745) is a monoclonal antibody that selectively binds to CAM-5.7 and inhibits MMP-9. It was found to be safe in a phase 1 dose-ranging study in UC subjects, where it showed clinical response and remission compared to placebo. The aim of this phase 2 study was to evaluate the safety and efficacy of andecaliximab in patients with active Crohn’s disease (CD).

Aims & Methods: This was a double-blind, randomized, placebo-controlled 8-week induction study in adult CD subjects with moderate to severe disease activity (defined as: CDAI score total 220–450, weighted PR2 score ≥11 [standard CDAI weightings: abdominal pain 0–3 x7 plus mean number of daily stools x2] and SES-CD total score ≥6 [or ≥4 score if disease limited to ileum and/or right colon or ulcer presence and size score ≥2]). Subjects were required to have an inadequate response, or loss of response or intolerance to at least 1 of the following treatments in the last 5 years: corticosteroids, immunomodulators, TNF-alpha antagonist or vedolizumab. Subjects were randomized 1:2:2:2 to receive subcutaneous (SC) injections of: placebo, 150 mg andecaliximab every 2 weeks (Q2W), 150 mg andecaliximab weekly (QW) or 300 mg andecaliximab QW. Centrally-read colonoscopies/colonoscopy were performed at baseline and week 8. The primary outcome was EBS clinical remission, defined as an Endoscopic subscore of ≤1, rectal Bleeding subscore of 0, and ≥1 point decrease in Stool frequency from baseline to achieve a subscore of 0 or 1. Results: A total of 165 subjects from 23 countries were enrolled. The percentage (confidence intervals) of subjects achieving EBS clinical remission was similar between subjects treated with andecaliximab Q2W and placebo: 7.4% (2.1–17.9%), 1.8% (0.9–6.9%) and 7.3% (2.0–17.6%), respectively. Confidence intervals overlap for all groups and no single EBS component subscore appears to have driven the results. No concerning imbalances occurred between the treatment groups (Table 1).
P0401 TUBERCULIN SKIN TEST CONVERSION RATE IN INFILTRATORY BOWEL DISEASE PATIENTS RECEIVING ANTI-TNF ALPHA AGENTS

M. Fragkaki, A. Mptouti, I. Dimas, G. Paspatis, K. Karmiris
Gastroenterology, Venizelion General Hospital, Heraklion/Greece
Contact E-mail Address: gpaspatis@gmail.com

Aims & Methods: Few data exist regarding the kinetics of this test during therapy. Therefore, we investigated the conversion rate of PPD-TST in IBD patients under anti-TNFalpha treatment. Anti-TNFalpha-treated IBD patients followed up in our centre with a baseline PPD-TST underwent a second one during therapy. Those with a positive PPD-TST either at baseline or during therapy (> 10 mm in naïve and > 5 mm in those exposed to immunomodulators [IMS]) received 300 mg isoniazid orally for 9 months.

Introduction: Anti-TNFalpha therapy increases the risk of tuberculosis (TB) (re)activation in inflammatory bowel disease (IBD) patients. Purified protein derivative tibial tuberculin skin test (PPD-TST) is considered a pre-requisite at baseline.

Results: Sixty-eight IBD patients have currently been enrolled (males: 51.47%, median age at IBD diagnosis: 33.1 years [IQR: 20.3, range: 16.7–66.7], median duration of IBD was 7.7 months [IQR: 9.9, range: 4.3–24.7]). Nine patients (13.2%) had a positive PPD-TST at baseline, 48 patients have undergone a second PPD-TST (median time between the 1st and 2nd PPD-TST: 44.26 months [IQR: 42.8, range: 6.3–190.1]). Twenty patients were under combination therapy with an IMS at the 2nd PPD-TST. Six patients with a positive baseline PPD-TST remained positive (in 5 patients the diameter was decreased & in one increased 7 mm). Out of the remaining 42 patients with a negative baseline PPD-TST, eight (19%) exhibited a positive 2nd PPD-TST; three of them were receiving infliximab for less than 3 years and five of them adalimumab (for less and 3 for more than 3 years). Only 2/8 were under combination therapy. There was no case of active tuberculosis during the study. All patients with a PPD-TST conversion received anti-tuberculous treatment.

Conclusion: A positive PPD-TST followed by anti-TB treatment before the initiation of anti-TNFalpha in IBD patients was not associated with an increased rate of TB infection during therapy. One-fifth of the patients with a negative baseline PPD-TST demonstrated a conversion but without any undesirable consequence if so treated. Therefore, the kinetic of PPD-TST in IBD patients under anti-TNFalpha treatment should be monitored.

P0402 THE TEMPORAL EVOLUTION OF IMMUNOGENICITY IN INFILTRATORY BOWEL DISEASE PATIENTS TREATED WITH ADALIMUMAB

B. Ungar1, T. Engel1, D. Yablecovich1, A. Lahat1, A. Lang1, B. Avidan1, O. Har-Noy1, N. Levar1, L. Selinger1, S. Neuman1, O. Haj Natour1, M. Yavzori1, E. Fudini1, O. Picard1, U. Kopylov1, Y. Chowers1, A. Lahat1, E. Broide1, E. Shachar2, R. Elikaim1, S. Ben-Horin1

1Gastroenterology Institute, - Gastroenterology institute, †IL, Ramon Git,Israel
2Gastroenterology, Rambam Health Care Campus, Haifa,Israel
3Gastroenterology, Meir Medical Center, Kfar Saba,Israel
4The Kamila Gonzalezowski Institute Of Gastroenterology, Assaf Harofeh Medical Center, Zerifin,Israel
5Assaf Harofeh medical Center Clalit Health Services Gastroenterology, Zerifin, Israel

Contact E-mail Address: bellageshish@gmail.com

Introduction: Adalimumab and anti-adalimumab-antibodies (AAA) levels have been associated with clinical outcome of Crohn’s disease (CD). Nevertheless, because adalimumab is usually self-injected at home, prospective serial-sampling studies are scarce. Thus, data on the temporal evolution of adalimumab immunogenicity is still limited, and the validity of comparisons of adalimumab versus infliximab immunogenicity remains questionable.

Aims & Methods: Our aim was to assess trends in adalimumab and AAA levels over time and their clinical implications. CD patients starting adalimumab therapy were followed prospectively in three participating medical centers in Israel, by establishing a program for home-visits by physicians at induction and every 3 months, or in case of relapse. At each home visit, patients’ clinical activity score were determined and blood tests obtained for CRP, drug and AAA trough levels. AAA levels were determined by a drug-tolerant assay. A comparison with temporal evolution of infliximab immunogenicity in a previously reported cohort using the same assay and methodology was additionally performed.

Results: 102 CD patients starting adalimumab were prospectively followed. Fourteen (14%) experienced primary non-response and 20 (20%) lost response to adalimumab therapy during maintenance. Thirty-three (32%) developed AAA, which were more common among those previously exposed to adalimumab (p = 0.002) but were not affected by co-treatment with immunomodulators or not (p = 0.28). AAA developed as early as week 2 in 18/33 (55%) of AAA positive patients (7/18 with history of interrupted therapy), and in 26/33 (79%) within 24 weeks. Thirty-two of cases, AAA preceded loss-of-response or occurred simultaneously (median interval - 4 weeks). As compared to antibodies-to-infliximab (ATI), AAA formation rate over time was significantly lower (p = 0.01, log rank test), and some patients developed AAA even after one year of therapy. Transient AAA were much less common than transient ATI (7% vs 32%, p < 0.0001), and 85% of AAA events were associated with loss of response compared with 58% rate for ATI (p = 0.01).

Conclusion: AAA formation often occurs earlier than anticipated, and associates with primary non-response to adalimumab induction. Overall rate of immunogenicity is lower for adalimumab compared to infliximab. However, once they occur, AAA are more specific to ATI.
of GLB with 47–49% of patients maintaining the effect after one year. Due to its relatively recent use there are still few real-life data on clinical outcomes of patients receiving golimumab in the routinely activities. In our region GLB became available starting July 2015.

Aims & Methods: Aim of this study has been to prospectively evaluate the efficacy of golimumab for the treatment of UC in the real-life setting of our referral centre. 13 patients (7 male, 6 female) with moderate-to-severe UC were enrolled in the study from June 2015 to December 2016. Patients received an induction dose of GLB 200 mg s.c. at baseline, 100 mg at week 2 and then a maintenance dose of 100 mg for a body weight > < 80 kg, respectively, with no optimization allowed. Partial Mayo score was computed at baseline and every 2 weeks for the first 6 weeks of therapy, then every 4 weeks throughout the maintenance period. Follow-up is still ongoing. Primary end point has been the clinical response at the end of the induction phase (intended as the reduction of Partial Mayo score > 30% and > 3 points vs baseline) and in the maintenance period, the secondary end point being the steroid-free clinical remission (Partial Mayo score < 2 with all subscores < 1) at the end of the induction phase and throughout the maintenance phase. Complete follow-up is available for all patients at week 30, with 4 patients reaching the week 54 of monitoring.

Results: At the time of GLB starting, localization of the disease according to Montreal classification was left-sided colitis (EL) in 70%, pancolitis (EC) in 23% and proctitis (EP) in 7% of patients. Ten patients (77%) were anti-TNF naïve, 3 patients (23%) had already received one anti-TNF in the past. Clinical response was obtained in 6/13 (46%) at week 6 and in 2 further patients at week 10, for a total of 8/13 (62%). Three patients resulted in complete clinical steroid-free remission after 6 weeks. At week 30, 5 patients still showed a clinical response (38%), one of them (7%) resulted in complete steroid-free remission. Among the 4 patients reaching week 54, 2 experienced a flare of disease whereas 2 were still in remission. One patient is in remission at week 42, potentially accounting for a total of 3/13 patients in remission after one year (23%). No differences were found between naïve and non-naïve patients. No significant adverse events were reported in the study period.

Conclusions: Our results seem to suggest that Golimumab, as compared to registratory trials, is able to induce a better initial clinical response but shows a higher secondary response of the disease in the long term. Whether this really reflects a lower efficacy of GLB or could depend on the unavailability of dose optimization, not allowed in the Italian prescription rules for GLB, needs to be evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.
delivery. An acute high fermentable fibre intake delays drug dissolution in the colon, but had little influence over total release. These findings have implications for optimising drug selection in maintenance of remission in UC.

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R.E. Burgell: Rebecca has received consultancy fees from Allergan. The Department of Gastroenterology at Monash University benefits financially from the sales of a digital app and booklets on the low FODMAP diet.

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P.R. Gibson: PG has served as consultant or advisory member for AbbVie, Ferring, Janssen, Merck, Allergan, Pfizer, Celgene & Takeda; research support from AbbVie & Janssen; speaking honoraria for his institution from AbbVie, Janssen, Ferring, Mylan & Pfizer.

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**P0406 HIGHER EXPOSURE TO GOLIMUMAB IS ASSOCIATED WITH ENDOSCOPIC RESPONSE IN PATIENTS WITH ULCERATIVE COLITIS: RESULTS FROM THE GO-KINETIC TRIAL**

S. Berends1, A. Strik2, R. Mathot1, G. R. D’Haens2, M. Lowenberg2

1Hospital Pharmacy, Academic Medical Center, Amsterdam/Netherlands

2Gastroenterology, Academic Medical Centre, Amsterdam/Netherlands

Contact E-mail Address: s.e.berends@amc.uva.nl

**Introduction:** Golimumab (GLM) is a subcutaneously administered anti-tumour necrosis factor (anti-TNF) antibody that is approved for the treatment of moderate to severe ulcerative colitis (UC). We investigated the association between systemic exposure (area under the curve (AUC)) of GLM during induction therapy and endoscopic response in moderate-severe UC.

**Aims & Methods:** In this prospective observational trial, patients with moderate to severe UC (Mayo endoscopy score ≥2) received induction treatment with GLM 200 mg SQ at week 0 and 100 mg (at week 2) followed by 50 or 100 mg at week 6, in patients with a bodyweight of less or more than 80 kg, respectively. Serum GLM concentrations were measured at day 0, 4, 7, 14, 18, 28, 42, and 56, as well as anti-GLM antibody levels, C-reactive protein (CRP) and albumin serum concentrations. Serum GLM concentrations were measured with an enzyme-linked immunosorbent assay and anti-GLM antibody levels were measured with a drug-sensitive antigen binding test, both developed by Sanquin laboratories. Endoscopic response was defined as ≥1 point reduction in endoscopic Mayo score at week 8–10 compared to baseline.

**Results:** A total of 20 patients were enrolled of which 19 patients underwent an endoscopy at baseline and 8–10 weeks after start of treatment. Median age (interquartile range) was 46 years [36–57], median baseline CRP serum concentration was 4.5 mg/L [1.1–13.7] and median baseline albumin serum concentration was 44 g/L [40–45]. None of the patients developed antibodies against GLM during induction treatment. After the induction phase, 12 out of 19 patients (63%) achieved an endoscopic response. Median AUC at week 2 and 6 was higher in endoscopic responders compared to non-responders. Median GLM trough concentrations at week 2 and 6 were higher in endoscopic responders compared to non-responders (Table 1). Correlations between GLM trough concentrations and AUCs at week 2 (Pearson correlation coefficient: 0.86, P < .0001) and week 6 (Pearson correlation coefficient: 0.81, P < .0001) were statistically significant. Despite a low area under the ROC-curve (AUROC), a GLM serum trough concentration ≥3.3 mg/L (AUROC: 0.75, 95% CI: 0.526–0.974, sensitivity: 67%, specificity: 71%) was associated with endoscopic response after the induction phase.

**Conclusion:** Serum trough concentrations of GLM and AUCs at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with improved endoscopic outcomes.

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R. Mathot: Has received consulting fees from MSD and research grants from Bayer, UCB Pharma, Shire and Roche.

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M. Lowenberg: Has received speaking fees from AbbVie, Covidien, Dr. Falk, Ferring Pharmaceuticals, Merck Sharp & Dohme, Receptos, Takeda, Tillots and Tramedico. He has received research grants from AbbVie, Merck Sharp & Dohme, Acheema healthcare and ZonMW.

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**P0407 COMPARATIVE EFFICACY AND SAFETY OF TOFACITINIB AND BIOLOGICS AS INDUCTION THERAPY FOR MODERATELY TO SEVERELY ACTIVE ULCERATIVE COLITIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS**

D. T. Rubin1, A. O. Ashaye2, Y. Zhang3, Y. Xu4, K. Faehrbach1, L.A. Chen1, A. Manachem2, C. Kayhan2, J. Woolcott1, J.C. Cappellern1

1Inflammatory Bowel Disease Center, University of Chicago Medicine, Chicago, United States of America/IL

2Evidea Inc, London/United Kingdom

3Division Of Gastroenterology, New York University School of Medicine, New York/United States of America/ NY

4Pfizer Ltd, Walton Oaks/United Kingdom

5Pfizer Inc, Groton/United States of America/CT

6Pfizer Inc, Kirkland/Canada/QC

Contact E-mail Address: drubin@medicine.bsd.uchicago.edu

**Introduction:** Tofacitinib is an oral, small molecule Janus kinase inhibitor being investigated for moderately to severely active ulcerative colitis (UC). We performed a systematic literature review (SLR) and network meta-analysis (NMA) to compare the efficacy and safety of tofacitinib to available tumour necrosis factor inhibitors (TNFi) and integrin receptor antagonists for induction therapy of adults with moderately to severely active UC.

**Aims & Methods:** Using indexing and free-text terms, searches were conducted in the EMBASE, MEDLINE, CENTRAL, DARE and CINAHL databases to identify RCTs published as of January 2015. Proceedings of relevant conferences from 2012–2014 were also reviewed. Comparators of interest were infliximab, golimumab, adalimumab and vedolizumab. Two reviewers independently assessed studies for inclusion, and extracted and validated the study/patient data. Fixed- and random-effects Bayesian NMAAs were conducted to compare efficacy outcomes and rates of adverse events (AEs) at 6–12 weeks in the overall population (TNFi-naive or exposed) and by prior TNFi exposure.
**Table 1: Hypothetical dissolution profiles UC patients (n=15)**

<table>
<thead>
<tr>
<th>Dissolution characteristics</th>
<th>Eudragit L</th>
<th>Eudragit L with slow release</th>
<th>Eudragit S</th>
<th>Multi-matrix (MMX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothetical complete dissolution</td>
<td>pH ≥ 6 for 1 h</td>
<td>pH ≥ 6 for 4-5 h</td>
<td>pH ≥ 7 for 2-4 h</td>
<td>pH ≥ 7 for 6 h</td>
</tr>
<tr>
<td>Complete in small intestine</td>
<td>67%</td>
<td>100%</td>
<td>HF 25%; LF 19%</td>
<td>HF 0%; LF 13%</td>
</tr>
<tr>
<td>Complete dissolution</td>
<td>100%</td>
<td>HF 97%; LF 100%</td>
<td>HF 80%; LF 87%</td>
<td>HF 53%; LF 67%</td>
</tr>
</tbody>
</table>

**Results:** Twelve induction trials were identified from the SLR (ACT 1 & 2, EUCLYPUS, GEMINI-I, PURSUIT SC, TOFACITINIB PHASE 2, Feagan 2005, 1 PROCTER 2003, UC-SUCCESS, ULTRA 1, ULTRA 2, Suzuki 2014) and included in the NMA. Unpublished data from tofacitinib Phase 3 induction trials (OCTAVE 1 & 2) were also used in the analysis. Fixed-effects NMA showed that tofacitinib 10 mg twice daily (BID) is associated with a higher rate of mucosal healing 86/90 mg in the overall population (odds ratio [OR] 95% CI 1.82 [95% credible interval (CrI) 1.06, 3.14]), and vs vedolizumab 300 mg (OR 3.71 [95% CI 1.37, 10.64]) and etrolizumab 300 mg (OR 12.09 [95% CI 1.68, 22.73]) in TNFi-exposed patients. A higher rate of clinical remission was seen with tofacitinib 10 mg BID vs adalimumab in TNFi-exposed patients (OR 11.93 [95% CI 1.84, 15.78]). AE rates were similar between tofacitinib 10 mg BID and comparators in the overall and TNFi-naïve populations when analysed individually, but tofacitinib 10 mg BID was found to be associated with a higher rate of disaggregated AEs (“any AE”) than etrolizumab 300 mg in the overall population (OR 2.78 [95% CI 1.08, 7.41]). There were no statistically conclusive differences in the rates of specific AEs between tofacitinib 10 mg BID and comparators.

**Conclusion:** This NMA suggests that tofacitinib may be more effective as induction therapy in moderately to severely active UC than adalimumab and vedolizumab in TNFi-exposed patients, and is associated with a higher rate of mucosal healing than adalimumab in the overall population. Rates of specific safety events were similar between tofacitinib and all other treatments.

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D.T. Rubin: Consulting fees: AbbVie, Amgen, Janssen, Pfizer Inc, Takeda, UCB. Research grants: AbbVie, Genentech, Janssen, Takeda, UCB.

A.O. Ashaye: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered.

Z. Yang: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered.

X. Xu: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered.

K. Fahrbach: Employee of Evidera, who provide consulting and research services to pharmaceutical and related organisations. In salaried positions, work with a variety of companies, and are precluded from receiving payment or honoraria directly for services rendered.

J. Woolcott: Employee and shareholder of Pfizer Inc.

C. Cappelleri: Employee and shareholder of Pfizer Inc.

**References**


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D. Mary Beth: MB Dorr - an employee of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, who may own stock and/or hold stock options in the Company.

All other authors have declared no conflicts of interest.
Disclosure of Interest: show that switching from IFX-biological to IFX-biosimilar is feasible and safe.

serious adverse events (SAE) that patients experienced were documented.

anti-drug antibodies [ADAs]. Patients were asked to fill in SIBDQ and Mayo or reactive protein [CRP], fecal calprotectin [FCP], infliximab trough level [TL] and alpha (TNF-α) inhibitors, such as Infliximab (IFX), are a major component in inducing and maintaining remission in more refractory patients. Recently IFX-biosimilars have been introduced for the treatment of IBD, these are less expen-

mary endpoint was number of patients in remission at week 30. We measured C-

Conclusion: This is the first double blind randomized clinical trial that compares SAE, none were related to the study drug.

Mean age at inclusion was 42 years. 21 patients have finished the 30-week follow-

pitals. 35 patients had CD and 12 had UC. 27 patients were female, 20 were male.

Patients in both arms received 4 to 6 doses of 5 mg/kg to 10 mg/kg during the 30-

week study period. Patients eligible for inclusion had to be in clinical remission (HBI < 5 and MAYO ≤ 2) and have a fecal calprotectin ≤ 250 mg/g. The primary endpoint of patients in remission at week 30. We measured C-reactive protein [CRP], fecal calprotectin [FCP], infliximab trough level [TL] and anti-drug antibodies [ADAs]. Patients were asked to fill in SIBDQ and Mayo or HBI questionnaires three times during the study period. Adverse events (AE) and serious adverse events (SAE) that patients experienced were documented.

Results: So far, we included 47 patients from 6 secondary Dutch Teaching hospi-

tals. 35 patients had CD and 12 had UC. 27 patients were female, 20 were male.

Mean age at inclusion was 42 years. 21 patients have finished the 30-week follow-

up. 35 patients received IFX-biosimilar. One patient experienced a relapse of IB, this patient received IFX-biosimilar. 2 patients experienced a SAE, none were related to the study drug.

Conclusion: This is the first double blind randomized clinical trial that compares treatments with IFX-biological or IFX-biosimilar. The preliminary results show that switching from IFX-biological to IFX-biosimilar is feasible and safe.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Introduction: Crohn’s disease (CD) and ulcerative colitis (UC) are the main enti-
ties of inflammatory bowel disease (IBD). For most patients, medical treatment is sufficient to keep the disease in remission. However, a simple increase in microbial diversity and successful establishment of members of the butyrate producing Lachnospiraceae and Ruminococcaceae families is not sufficient for a successful outcome of FMT.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0411 ENCAPSULATED FECAL MICROBIOTA TRANSFER IN PATIENTS WITH CHRONIC, ANTIBIOTIC-REFRACTORY POUCHITIS

A. Steube1, M. Vitali2, A. Sturm2, C. Bunning3, A. Stallmach1, D. Pieper2

1Clinic For Internal Medicine IV, Jena University Hospital, Jena/Germany

2Department Of Internal Medicine (gastroenteriology), DRK Kliniken Berlin I Westend, Berlin/Germany

3Department Of Internal Medicine, Krankenhaus Wallhöfde, Berlin-Zehlendorf/ Germany

Contact E-mail Address: andreas.stallmach@mail.uni-jena.de

Introduction: We analyzed the success of fecal microbiota transfer (FMT) via encapsulated or endoscopic jejunal application to 14 patients with chronic, anti-

bacterial refractory pouchitis. After FMT, FMT was performed either via encapsulated cryopreserved microbota or via endoscopic jejunal application to 14 patients. Stool samples for FMT preparation derived from three unrelated healthy donors. Patients were treated by FMT every 4 weeks according to the individual therapeutic outcome.

Stool samples before FMT and during follow-up were subject to microbial community structure analysis through high throughput sequencing of the V1-V2 regions of the 16S rRNA (1), clinical response and mucosal inflammation was assessed by fecal calprotectin (FCP) levels.

Results: Clinical response occurred in 7 of 14 patients after two to four FMTs. 4 patients showed clinical worsening and 3 patients showed no improvement. FCP dropped in responders from 536 mg/kg stool (med.; min-max: 116–3000) to 150 mg/kg (191-1409), whereas in patients with flare FCP values increased from 100 mg/kg (157) to 1450 mg/kg (1221–1778). Microbiota analysis of 10 patients and two donors revealed a significantly lower diversity in pouchitis patients compared to healthy donors as assessed by the total phylotype number, the Shannon diversity and Pielou’s evenness. In patients showing response, typi-

ical response occurred in diversity was due to the successful establishment of the donor microbiota as assessed by the analysis of sample-similarity matrices constructed using the Bray-Curtis algo-
rithm and a detailed analysis of the taxonomic composition. The encapsulated fecal microbiota was as effective as the endoscopic jejunal application in its capacity to restructure the pouch microbiota and increase the diversity and an overall restructuring of the microbial biota into a composition resembling the donor not necessarily correlated with clinical outcome and clinical worsening was observed during three FMTs where the established microbiome structure resembled that of the donor in diversity and composition.

Interestingly, a high abundance of Ruminococcaceae was associated with remis-
sion in a recent study on ulcerative colitis (2). However, two patients showed worsening here despite a high increase in the relative abundance of Ruminococcaceae after FMT.

Conclusion: Fecal microbiome transfer in patients with chronic pouchitis is a promising therapeutic option and donor microbomas could successfully be transferred via capsules or via jejunoscopy delivering fresh stool filtrate. However, simple increase in microbial diversity and successful establishment of members of the butyrate producing Lachnospiraceae and Ruminococcaceae families is not sufficient for a successful outcome of FMT.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0412 HISTOLOGIC MEASURES OF MUCOSAL HEALING CORRELATE WITH ENDOSCOPIC MEASURES OF DISEASE ACTIVITY AT BASELINE AND FOLLOWING INJECTION THERAPY WITH THE JAKI INHIBITOR FILGOTINIB IN ACTIVE CROHN’S DISEASE: RESULTS FROM FITZROY STUDY

W. Reinsch1, G. R. D’Haens2, G. De Hertogh3, A. Van Der Aa3, J. Zhang2, A. Tassef1, C. Yun1, A. Serone1, B. G. Feagan4, W. J. Sandborn5, S. Vermiere5, J. M. Jansen2

1Medical University of Vienna, Vienna/Austria

2Gastroenterology, Academic Medical Centre, Amsterdam/Netherlands

3Department Of Pathology, University Hospitals Leuven, Leuven/Belgium

4Bioscience, Gilead Sciences, Foster City/United States of America

5Development, Galapagos NV, Mechelen/Belgium

Clinical Research, Gilead Sciences, Inc. Foster City/United States of America

Robarts Research Institute, London/Canada

6University of California, San Diego/United States of America

7Dep't Of Gastroenterology, University Hospital Leuven - Dept. of Gastroenterology, University Hospital Leuven; Leuven/BE, Leuven/Belgium

Contact E-mail Address: walter.reinsch@meduniwien.ac.at

Introduction: Mucosal healing (MH) has been established as co-primary treat-

ment target in Crohn’s disease, predominantly defined by the absence of ulceration. However, even in patients with MH, inflammation may persist on histologic examination1. Filgotinib (FIL), a selective inhibitor of JAK1 that blocks cytokine signaling through inhibition of STAT phosphorylation, has recently shown effi-
cacy in a double-blind, placebo (PBO)-controlled Phase 2 study in CD (Fitzroy2). Effects of filgotinib versus placebo have been demonstrated on centrally read endoscopy and histopathology assessments after a 10-week induc-
tion treatment.

Aims & Methods: In this post hoc analysis, we explored the correlation between histologic and endoscopic disease activity at baseline (BL) and following FIL indution therapy by comparison of total ileal Global Histology Activity Score (IGHAS)/colonic GHAS (CGHAS) score or IGHAS/CGHAS activity subscores (a; activity items: presence of epithelial damage, polymorphonuclear leukocytes in lamina propria, neutrophils in epithelium, erosion or ulceration, granuloma)3, versus total ileal Simplified Endoscopic Score for CD (ISES-CD)/colonic SIES-

CD (CSES-CD) score or ISES-CD/CSES-CD ulcer subscores (u; sum of size and % affected surface). CD patients were randomized 3:1 to receive 200 mg FIL or PBO QD for 10 weeks2. Intestinal biopsies were collected at BL and Week 10 (W10) from the most affected areas of each predefined bowel segment (ileum, ascending, transverse, descending, sigmoid colon and rectum). Biopsies were formalin fixed and paraffin embedded. The mean changes from baseline for each treatment group were compared to zero using a single t-test.

Results: Baseline values were comparable across treatment groups, although CGHAS and CSES-CD were numerically higher in the PBO group (Table 1). Following 10 weeks of treatment with FIL 200 mg, histologic measures of colonic mucosal healing (IGHAS and ISES-CD) were significantly improved and were coupled with macroscopic changes in both CSES-CD and uCSES-CD. Changes in histology score for ileal segments were numerically greater after FIL treatment versus placebo. Histology total and subscores were significantly higher in patients with total and endoscopic ulcer subscores at baseline, and more pronounced when looking into the colonic segments versus the ileal seg-

ments (IGHAS > ISES-CD: Corr = 0.62, p < 0.001; Corr = 0.65, p < 0.001;BL and W10 respectively)aghv > uCGHAS \( r = 0.53, p < 0.001 \)}
**CROHN'S STUDIES**


**P0413 RESPONSE AND REMISSION AFTER 16 WEEKS OF USTEKINUMAB—AN ALL PATIENTS ANALYSIS FROM THE UNITI CROHN’S STUDIES**

J. Colombel1, S. Sloan2, C. Gasink2, L. Gao2, D. Jacobstein2, S. D. Lee2, S. R. Targan3
1Icahn School of Medicine at Mount Sinai, New York/United States of America
2Janssen Scientific Affairs, LLC, Horsham/United States of America/PA
3Janssen Research & Development, LLC, Spring House/United States of America/PA
4University of Washington Medical Center, Seattle/United States of America/WA
5 Cedars-Sinai Medical Center, Los Angeles/United States of America/CA

Contact E-mail Address: jeан-frederic.colombel@msnn.edu

Introduction: Ustekinumab (UST) has been shown to induce and maintain clinical response and remission in moderate to severe Crohn’s disease (CD) in 2

induction ([UNITI-1 (anti-TNF failures) and UNITI-2 (anti-TNF non-failures) and 1 maintenance (IM-UNITI)] randomized, placebo controlled Phase 3 trials. We evaluated the efficacy (response and remission) for all patients who received an intravenous (IV) induction dose of approximately 6 mg/kg, including responders (CDAI decrease ≥100) and non-responders, 8 weeks after the first UST maintenance dose of 90 mg subcutaneous (SC), i.e. 16 weeks from the IV induction dose.

**Aims & Methods:** Patients achieving clinical response 8 weeks after a single IV induction dose were randomized to SC placebo (PBO), UST 90 mg every 12 weeks (q12w) or every 8 weeks (q8w). UST patients not in clinical response 8 weeks after the IV induction dose were given UST 90 mg SC and if in clinical response 8 weeks later were continued on 90 mg SC q8w dosing. A total of 458 patients were exposed to an IV induction dose of 6 mg/kg (UNITI-1, N = 249 and in UNITI-2, N = 209) with a response rate at week 8 of 37.8% and 57.9% vs. PBO response rate of 20.2% and 32.1% respectively. The remission rate at week 8 in UNITI-1 and UNITI-2 was 20.9% and 40.7 vs. PBO of 7.3% and 19.6% respectively. For this evaluation, the response and remission status of the entire population exposed to an IV induction dose of 6 mg/kg of UST was evaluated 8 weeks after the first subcutaneous maintenance dose of UST. All patients who received 6 mg/kg IV UST induction were included, including responders randomized to SC PBO (who did not receive SC UST at week 8).

**Results:** Of the 219 patients not in clinical response in UNITI 1&2, 37.6% and 60.5% respectively were in clinical response 8 weeks after the first maintenance UST dose (90 mg SC). Evaluating all patients exposed to 6 mg/kg IV UST induction, response rates 8 weeks after the first subcutaneous injection (16 weeks after the IV induction dose) for UNITI1&2 are 47.4% and 73.7% respectively (see table for response and remission rate). Similar assessments were calculated in the sub-population who were anti-TNF naïve upon enrolment into UNITI-2.

**Response rates and Remission rates for all patients 16 weeks after induction of 6mg/kg IV UST**

<table>
<thead>
<tr>
<th>Study</th>
<th>IV UST (n)</th>
<th>% Clinical Response</th>
<th>% Clinical Remission</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITI-1</td>
<td>249</td>
<td>47.4</td>
<td>24.1</td>
</tr>
<tr>
<td>UNITI-2</td>
<td>209</td>
<td>73.7</td>
<td>55.5</td>
</tr>
<tr>
<td>UNITI-2 TNF naïve</td>
<td>144</td>
<td>72.9</td>
<td>60.4</td>
</tr>
</tbody>
</table>

**Conclusion:** These numbers at week 16 are expected to reflect real-world experience in patients who receive the induction dose and one additional maintenance dose 8 weeks later. The resulting rates of response and remission are higher than previously reported in the induction studies across all populations (anti-TNF non-failures and anti-TNF failures). About 73% of anti-TNF non-failures attain clinical response and over half are in remission. The data support the clinical rationale for providing at least one SC maintenance dose of ustekinumab irrespective of clinical response 8 weeks after IV induction.

**Disclosure of Interest:** J. Colombel: Investigator for Janssen Scientific Affairs, LLC
Introduction: Biologics such as infliximab (IFX) (an anti-TNF) and vedolizumab (VDZ) (anti-integrin) are treatment options for patients with moderate-to-severely active inflammatory bowel disease (IBD), who have failed conventional therapy.

Aims & Methods: Our aim was to compare time to treatment discontinuation, flares, and hospitalisations among patients with IBD initiating VDZ versus IFX who were biologic-naive. All patients with IBD (ulcerative colitis or Crohn’s disease [CD]) who initiated biologic treatment with VDZ or IFX between 01/05/2014 and 22/02/2016 were identified in the US Explorys Universe database; the first infusion was deemed the index date. Analyses focused on patients who: (1) successfully completed induction therapy (≥3 infusions within 98 days of index date); (2) were ≥18 years of age at index; (3) had ≥365 days of medical history prior to index (“baseline”); and (4) had 365 days of follow-up after the index date. VDZ initiators were matched to IFX initiators (1:3) using propensity scores. Kaplan-Meier Method was used to compare median time to discontinuation of VDZ and IFX during follow-up, defined as the first of either: no receipt of biologic <90 days of previous infusion, or switch to another biologic. Similar method was also used to compare median time to IBD-related hospitalisations, surgeries, and flares (defined as use of intravenous steroids), respectively. Interquartile range (IQR) was also calculated.

Results: 105 VDZ initiators were matched to 315 IFX initiators. Baseline characteristics of both cohorts are described in Table 1. CD accounted for ~60% of patients in each cohort. In the baseline period, ~70% of patients in both cohorts had received corticosteroids; 20% of VDZ vs. 38% of IFX initiators received an immunosuppressive therapy. Median time since diagnosis was 2.4 years for VDZ initiators and 3.1 years for IFX initiators. Median time to treatment discontinuation was 244 (IQR for VDZ: 194–307 and IFX: 190–300) days in both cohorts. Median time to first VDZ-related hospitalisation was 153 (IQR: 78–209) days for VDZ initiators vs. 98 (IQR: 45–168) days for IFX initiators. For IBD-related flares, median time was 111 (IQR: 40–226) days for VDZ initiators vs. 93 (IQR: 35–182) days for IFX initiators.

Table 1. Baseline characteristics of propensity-score matched IBD patients initiating therapy with vedolizumab or infliximab

<table>
<thead>
<tr>
<th></th>
<th>Vedolizumab (N = 105)</th>
<th>Infliximab (N = 315)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) age, years</td>
<td>46 (16.0)</td>
<td>44 (16.8)</td>
<td>0.297</td>
</tr>
<tr>
<td>Female, %</td>
<td>52.4</td>
<td>52.7</td>
<td>&gt;0.999</td>
</tr>
<tr>
<td>Caucasian, %</td>
<td>89.5</td>
<td>84.1</td>
<td>0.180</td>
</tr>
<tr>
<td>Insurance type, %</td>
<td></td>
<td></td>
<td>0.202</td>
</tr>
<tr>
<td>Medicaid</td>
<td>6.7</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>23.8</td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>63.8</td>
<td>65.7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5.7</td>
<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis, years</td>
<td>3.6 (3.5)</td>
<td>3.1 (3.6)</td>
<td>0.667</td>
</tr>
<tr>
<td>Comorbidities, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>3.8</td>
<td>2.9</td>
<td>0.745</td>
</tr>
<tr>
<td>Rheumatic disease</td>
<td>5.7</td>
<td>2.9</td>
<td>0.221</td>
</tr>
<tr>
<td>Mild liver disease</td>
<td>11.4</td>
<td>10.2</td>
<td>0.715</td>
</tr>
<tr>
<td>Malignancies</td>
<td>6.7</td>
<td>4.1</td>
<td>0.295</td>
</tr>
<tr>
<td>IBD-related measures (during the baseline period), %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>5.7</td>
<td>7.3</td>
<td>0.663</td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>37.1</td>
<td>32.7</td>
<td>0.407</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>70.5</td>
<td>71.1</td>
<td>0.902</td>
</tr>
<tr>
<td>Immunosuppressives</td>
<td>20.02121</td>
<td>37.8</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Conclusion: Among biologic-naive IBD patients, there was a trend toward prolonged median times to first IBD-related hospitalization or first flare with VDZ compared to IFX. The median time to discontinuation was comparable between the therapies. Future studies should examine comparative effectiveness outcomes in a larger cohort over a longer follow-up period.

Disclosure of Interest: H. Patel: I am currently an employee of Immensity Consulting, Inc., which received funding from Takeda Development Centre Ltd. R. Curtis: Employee of Takeda Development Centre Ltd. M.J. Khalid: Employee of Takeda Development Centre Ltd.
CARCINOGENESIS

P. Brun5, M. Scarpa2, I. Castagliuolo1, M. Scarpa2

Antimycin A and H2O2) and antioxidant (N-acetyl cysteine) stimuli in presence
used to quantify the expression of CD80 in response to pro-oxidant (such as
on CD80 expression in colonic epithelial cells using an

Aims & Methods: 

Presentation, a crucial event in the immune surveillance mechanisms 1. We
liferation. Interestingly, reactive oxygen species (ROS) seem to modulate antigen
were recently showed that expression of the co-stimulatory molecule CD80 on epithe-

Introduction:

Cancer development has been linked to oxidative stress by increas-

were

\[ p < 0.001 \]

\[ HC 

\[ CD25 \]

\[ CD69 \]

\[ CD80 \]

\[ CD38 \]

\[ MAPK \]

\[ p < 0.001 \]

\[ CD200 \]

\[ CD300 \]

\[ CD40 \]

\[ CD40L \]

\[ CD80 \]

\[ CD90 \]

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\[ CD120b \]

\[ CD163 \]

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Receptor Superfamily Member 1A (TNFRSF1A) with Bifidobacterium (n = 0.89, p < 0.01).

Conclusion: The intestinal antimicrobial gene profiles differ between subsets of IBS patients and healthy subjects. An altered ability to recognize microbiota associated with immune activity and the relative abundance of gut bacteria may play a role in the complex pathophysiology of IBS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0417 THE EXPOSURE OF ANTIBIOTICS IS ASSOCIATED WITH INCREASED RISK OF COLORECTAL CANCER—A SYSTEMATIC REVIEW AND META-ANALYSIS
X. He1, W. Wu2, Y. Ding2, L. Sun1
1Department Of Gastroenterology, Sir Run Run Shaw Hospital, Zhejiang University, Hangzhou/China
2The First Affiliated Hospital, School Of Medicine, State Key Laboratory for Diagnosis and Treatment of Infectious Diseases, hangzhou/China
3Department Of Gastroenterology, Sir Run Run Shaw Hospital, hangzhou/China

Contact E-mail Address: hexingkang1990@163.com

Introduction: Recently, accumulating evidence suggested that the dysbiosis of the intestinal microbiota was associated with increased risk of colorectal cancer and might play a significant role in the colorectal carcinogenesis [1-2]. Many environmental factors (e.g. diet and lifestyle) that altered the gut microbiota had been reported in the development of colorectal cancer[3]. Antibiotics are able to shift the gut microbiota by altering bacterial composition and functions. The overuse of antibiotics is associated with such adverse effects, such as severe infections, obesity, inflammatory bowel disease. Similarly, it is plausible to hypothesize that overuse of antibiotic might be linked to CRC by altering the colonic microbiota. However, the relationship between antibiotic and CRC was unclear and studies regarding this topic were limited [4-7].

Aims & Methods: To evaluate the association between use of antibiotic and the risk of developing colorectal cancer, a systematic literature search was conducted using PubMed, EMBASE, Web of science and Cochrane library to identify related studies published before October 2016. Two independent investigators screened and extracted data from included articles. A random-effects model was adopted to calculate overall odds ratio (OR) and 95% confidence interval (CI).

Results: From initial search, we identified four case-control studies and finally included in the meta-analysis. Compared with no/low use of antibiotics, high prescriptions of antibiotics were significantly associated with an excess cancer risk (OR = 1.11, 95%CI 1.01–1.21). There was a significant heterogeneity across studies ($I^2 = 62.1%$, $p = 0.048$). Longer duration of antibiotics was also significantly correlated to increased risk of CRC (OR = 1.14, 95%CI 1.03–1.25) with no significant heterogeneity ($I^2 = 39.6%$, $p = 0.191$). There was no evidence of significant publication bias among this meta-analysis.

Conclusion: Higher prescriptions and longer duration exposure of antibiotics were associated with increased risk of developing colorectal cancer. Further studies are needed to verify our results and explore underlying mechanisms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0418 EFFECT OF INTERNAL AND EXTERNAL BILIARY DRAINAGE ON INTESTINAL MUCOSAL BARRIER FUNCTION IN BILIARY OBSTRUCTION RATS
S. Li1, X. Su1, K. Luo1, C. Ge1, W. Li1
1Gastroenterology-hepatology, People’s Liberation Army General Hospital (PLAGH), Beijing/China
2China-Japan Union Hospital Capital Medical University, Beijing/China
3The General Hospital of the Chinese People’s Liberation Army, Beijing/China
4Yichang Central’s Hospital, Yichang/China
5Gastroenterology And Hepatology, The General Hospital of the Chinese People’s Liberation Army, Beijing/China

Contact E-mail Address: 118357349@qq.com

Introduction: Internal biliary drainage has been confirmed better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstructive jaundice, but the relevant mechanism is still unclear.

Aims & Methods: We aimed to investigate the effect of internal and external drainage on obstructive jaundice rats on intestinal mucosal barrier function with special reference of intestinal immune-related index expression. Sixty male Sprague-Dawley rats were randomly assigned to four groups: OJ, sham operation (SH), internal biliary drainage (ID) and external biliary drainage (ED). All animals underwent surgical ligation of the bile duct, except SH was produced by separating common bile duct locally but not dividing on day 1. Then ED and ID were reoperated on day 8 for biliary drainage procedure. Blood from inferior vena cava were collected for the test of DAO and slgA activities by the method of ELASA.

The terminal ileum specimens of each groups were collected for observation of the morphological changes with haematoxylin-eosin (HE) staining. The expression of IgA mRNA, plgR mRNA, GB-AP1mRNA, RD-5mRNA were measured by real-time PCR.

Results: After bile duct ligation, the injuries of the intestinal mucosa were obvious in OJ group with thinner mucosa, sparser villi, destruction of the epithelial cell and accompanied by inflammatory cell infiltration. The expression of IgA mRNA and plgR mRNA reduced markedly (P < 0.01), while the impaired intestinal mucosa have different degrees of recovery and ID group was more similar to SH group in intestinal mucosal morphology. The levels of the DAO in OJ group was increased more dramatically than that in SH, ID and ED groups while slgA were decreased (P < 0.01), and the activities of the DAO, slgA in ID group were similar to the level of SH group (P > 0.05), different to the level of ED group (P < 0.01). The changes of the plasma DAO and slgA activities were significantly correlated with the conditions of intestinal mucosa (P < 0.01). The expression of RD-5 mRNA in OJ group were decreased significantly than that in SH, ID and ED groups while GB-AP1 mRNA, IgA mRNA, plgR mRNA were increased (P < 0.01). Interestingly enough, after external bile drainage, there is no improve-ment in IgA mRNA and plgR mRNA (P > 0.05). But in ID, the relative expression of IgA mRNA and plgR mRNA reduced markedly (P < 0.01), while the mRNA expression of GB-AP1 and RD-5 mRNA in ED group was changed less than that in ID which were more similar to SH group. The protein expression of GB-AP1 was increased significantly in the intestinal mucosal of OJ group, which was higher than that of in SH group (P < 0.01). After internal and external biliary drainage to alleviate OJ respectively, the GB-AP1 expression was decreased significantly in ID group, similar with SH group (ID vs OJ, P < 0.01, ID vs SH, P > 0.05), and lower than that of in ED group (P > 0.05).

Conclusion: The differential expression of IgA mRNA, plgR mRNA, GB-AP1 mRNA, RD-5 mRNA and activities of DAO and slgA in OJ, ID, ED and SH reflect internal biliary drainage better than external biliary drainage. There may be a new protective mechanism between GB-AP1 and intestinal immune-related index, which thus appears to be a key factor in maintaining function of intestinal mucosal barrier. Disclosure of Interest: All authors have declared no conflicts of interest.

P0419 COMPARATIVE EFFECT OF XYLOGLUCAN ASSOCIATIONS WITH COMPOUNDS FROM ANIMAL OR ALGAE ORIGIN ON LPS-INDUCED ENTERITIS IN RATS
H. Eutamene, C. Harkat, V. Theodorou
1Unite` De Neuro-gastroenterologie & Nutrition, Toxalim UMR 1331 INRA/UPS/INPT-EI-Purpan, Toulouse/France

Contact E-mail Address: helene.eutamene@inra.fr

Introduction: Xyloglucan (XG) is a film-forming agent exhibiting protective effects against diarrhea linked to infectious gastroenteritis in humans; further in animal models, xyloglucan efficacy against cholera-toxin-induced diarrhea was tested prolonged when this mucoprotectant agent is associated with gelatin from animal origin. The use of compounds from animal source in galenic formulations is nowadays questionable.

Aims & Methods: Thus, in this study, we aimed at comparing the efficacy of XG associated with gelatin vs XG associated with gelose a marine polysaccharide on LPS-induced enteritis in rats. Since LPS-induced enteritis is characterized by increased intestinal permeability and mucosal inflammation, the efficacy of xyloglucan associations was evaluated by measurement of these two parameters. Male Wistar rats (200-250 g) were orally treated with either XG (10 mg/kg) + gelatin (25 mg/kg) or XG (10 mg/kg) + gelose (25 mg/kg) or XG (10 mg/kg) + gelose (50 mg/kg) or vehicle (NaCl 0.9%) 3 h before intraperitoneal (IP) administration of LPS from E. coli (1 mg/kg). Six hours later APS administration, the animals were sacrificed and strips of ileum were collected in order to evaluate (i) intestinal epithelial paracellular permeability to FITC-dextran 4Kd in Ussing chambers and (ii) mucosal inflammatory response by myeloperoxidase (MPO) activity measurement.
Results: Compared with control, LPS administration induced a significant increase (p < 0.05) of intestinal paracellular permeability (53.0 ± 4.9 vs 181.6 ± 21.1 pmol/cm² respectively) associated with jejunal mucosal inflammation (302.1 ± 9.5 vs 655.6 ± 108.9 U MPO/g protein, respectively). XG (10 mg/kg) + gelose at the lowest dose (25 mg/kg) failed to reverse the intestinal hyperpermeability and mucosal inflammation induced by LPS. In contrast, XG (10 mg/kg) + gelatin (25 mg/kg) and XG (10 mg/kg) + gelose at 50 mg/kg significantly (p < 0.01) and equally prevented LPS-induced hyperpermeability (34.8 ± 2.8, 38.7 ± 3.9 vs 181.6±21.1 pmol/cm² respectively) and jejunal inflammation (27.70 ± 32.2, 286.2 ± 28.8 vs 655.6 ± 108.9 U MPO/g protein respectively).

Conclusion: This study shows that oral treatment with xylanoglucon associated with gelose at 50 mg/kg has similar protective effects on LPS-induced enteritis in rats than xylanoglucon associated with gelatin. These data demonstrate that algae are an effective and safe substitute for replacing compounds from animal origin in xylanoglucon mucoprotectant formulations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0421 CLINICAL CHARACTERISTICS OF CYTOMEGALOVIRUS COLITIS: 15 YEAR-EXPERIENCE IN A TERTIARY MEDICAL CENTER

P. Le1, R. Wu2, C. Chiu1, C. Kuo1, M. Su1, C. Lin1, J. Hsu3
1Department Of Gastroenterology And Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan/Taiwan
2Department Of Pathology, Linkou Chang Gung Memorial Hospital, Taoyuan/Taiwan
3Department Of General Surgery, Linkou Chang Gung Memorial Hospital, Taoyuan/Taiwan

Contact E-mail Address: puoshin@gmail.com

Introduction: Cytomegalovirus (CMV) colitis in adults is mostly described in immunocompromised patients (solid organ or hematopoietic stem cell transplant recipients, patients with human immunodeficiency virus (HIV) infection, use of immunosuppressive drugs, including steroid or chemotherapeutic agents), and often has worse outcome than in children. Besides, it was also frequently presented in patients with known or subsequent new diagnosis inflammatory bowel disease [1, 2]. However, there are only case reports and few case series with limited patients (below 15 cases) among immunocompetent individuals without inflammatory bowel disease [3-5]. The largest meta-analysis study of cytomegalovirus colitis in immunocompetent hosts included 44 patients and noted advanced age, male gender, presence of immune-modulating comorbidities and need of surgical intervention negatively influencing survival in 2005 [6].

Aims & Methods: We enrolled 42 immunocompetent patients and 27 immunocompromised patients with CMV colitis diagnosed by immunohistochemistry stain between April 2002 and December 2016 in Linkou Chang Gung Memorial Hospital, a 3383-bed tertiary medical center and referral center in Taiwan. We analyzed the risk factors of in-hospital mortality and overall survival. Furthermore, we compared the clinical differences between immunocompetent and immunocompromised patients with CMV colitis.

Results: Early diagnosis (before 9 days) was independent predictor of in-hospital mortality in CMV colitis patients. ICU admission (P = 0.010), requisites days of diagnosis>9 days after admission (P = 0.018), shock (P = 0.001), respiratory failure (P = 0.033), hemoglobin <10 g/dL (P = 0.002), Creatinine ≥1.37 mg/dL (P = 0.004) and CRP>29 mg/dL (P = 0.011) negatively impacted on overall survival. There were older and more comorbidities in immunocompromised group. However, the in-hospital mortality rate and overall survival rate was similar to immunocompromised group. Besides, Cystadillicum difficile infection or steroid didn’t affect in-hospital mortality rate and overall survival rate neither. Melenia was first and most common symptom in immunocompetent group, but diarrhea in the other.

Analysis of the clinical factors associated with in-hospital mortality in all patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio 95%CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Univariate analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>1.039*10⁰</td>
<td>0.000 → &gt;10⁰²</td>
</tr>
<tr>
<td>Shock</td>
<td>5.714</td>
<td>1.793 → 18.210</td>
</tr>
<tr>
<td>Respiratory failure</td>
<td>4.062</td>
<td>1.309 → 12.610</td>
</tr>
<tr>
<td>Operation before diagnosis</td>
<td>5.200</td>
<td>0.583 → 17.553</td>
</tr>
<tr>
<td>Underlying diseases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infectious bowel disease</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Systemic lupus erythematosus</td>
<td>4.900</td>
<td>0.747 → 32.123</td>
</tr>
<tr>
<td>Solid organ transplantation</td>
<td>2.941</td>
<td>0.174 → 49.636</td>
</tr>
<tr>
<td>Solid organ malignancy</td>
<td>0.941</td>
<td>0.992 → 9.671</td>
</tr>
<tr>
<td>Hematological malignancy</td>
<td>2.941</td>
<td>0.174 → 49.636</td>
</tr>
<tr>
<td>Liver cirrhosis</td>
<td>0.941</td>
<td>0.992 → 9.671</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>2.067</td>
<td>0.576 → 7.421</td>
</tr>
<tr>
<td>End stage renal disease</td>
<td>3.357</td>
<td>0.742 → 15.181</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1.682</td>
<td>0.543 → 5.205</td>
</tr>
<tr>
<td>HIV infection</td>
<td>0.000</td>
<td>0.000 → &gt;10⁰⁵</td>
</tr>
<tr>
<td>Immunosuppressive medication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunosuppressant</td>
<td>5.200</td>
<td>0.583 → 17.553</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>4.840*10⁰⁰</td>
<td>0.000 → &gt;10⁰⁰</td>
</tr>
<tr>
<td>Steroid</td>
<td>1.124</td>
<td>0.336 → 3.764</td>
</tr>
<tr>
<td>Mortality over 1 month</td>
<td>2.350</td>
<td>0.472 → 11.008</td>
</tr>
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</table>

Laboratory data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio 95%CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total WBC count (×10⁰⁰)</td>
<td>0.000 → &gt;10⁰⁰</td>
<td>0.999</td>
</tr>
<tr>
<td>ANC (×10⁰⁰)</td>
<td>1.000</td>
<td>0.000 → 1.000</td>
</tr>
<tr>
<td>ALC (×10⁰⁰)</td>
<td>0.999</td>
<td>0.998 → 1.000</td>
</tr>
<tr>
<td>Hemoglobin level (g/dL)</td>
<td>0.668</td>
<td>0.485 → 0.918</td>
</tr>
<tr>
<td>Platelet count (×10⁰⁰/mm³)</td>
<td>0.995</td>
<td>0.990 → 1.001</td>
</tr>
<tr>
<td>Creatinine (mg/dL)</td>
<td>1.448</td>
<td>1.059 → 1.978</td>
</tr>
<tr>
<td>ALT (IU/L)</td>
<td>0.995</td>
<td>0.958 → 1.033</td>
</tr>
<tr>
<td>Bilirubin (mg/dL)</td>
<td>1.370</td>
<td>0.965 → 1.944</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
<td>0.625</td>
<td>0.231 → 1.687</td>
</tr>
<tr>
<td>C-reactive protein (mg/dL)</td>
<td>1.009</td>
<td>1.000 → 1.018</td>
</tr>
<tr>
<td>Viral markers</td>
<td></td>
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</tbody>
</table>

(continued)
Continued

Analysis of the clinical factors associated with in-hospital mortality in all patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odd ratio</th>
<th>95%CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMV pp65 antigenemia</td>
<td>0.65</td>
<td>0.140–0.307</td>
<td>0.593</td>
</tr>
<tr>
<td>CMV IgG positive</td>
<td>0.28</td>
<td>0.016–5.095</td>
<td>0.394</td>
</tr>
<tr>
<td>CMV IgM positive</td>
<td>3.20</td>
<td>0.547–17.841</td>
<td>0.012</td>
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<tr>
<td>Clostridium difficile infection</td>
<td>0.89</td>
<td>0.077–10.300</td>
<td>0.925</td>
</tr>
<tr>
<td>Ganciclovir or valganciclovir treatment</td>
<td>2.26</td>
<td>0.579–9.026</td>
<td>0.023</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>0.985</td>
<td>0.953–1.026</td>
<td>0.563</td>
</tr>
<tr>
<td>Surgical treatment</td>
<td>1.840</td>
<td>0.392–8.630</td>
<td>0.439</td>
</tr>
<tr>
<td>Perforation</td>
<td>1.441</td>
<td>0.123–16.920</td>
<td>0.771</td>
</tr>
</tbody>
</table>

Conclusion: Immuno-compromised patients or steroid users did not have higher in-hospital mortality rate. Early diagnosis was only independent factor for lower in-hospital mortality in patients with CMV infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

2. Khan TV, Toms C. Cytomegalovirus Colitis and Subsequent New Diagnosis of Inflammatory Bowel Disease in an Immunocompetent Host: A Case Study and Literature Review. Am J Case Rep 2016; 17: 538-43.

P0423 A RANDOMISED CONTROLLED TRIAL OF RIFAXIMIN TO PREVENT RELAPSE OF CLOSTRIDIUM DIFFICILE INFECTION ASSOCIATED DIARRHOEA AFTER RESOLUTION WITH STANDARD THERAPY

A. Montgomery2, R. Spiller1
1NHRI Nottingham Digestive Diseases Biomedical Research Centre, University of Nottingham, Nottingham/United Kingdom
2Nottingham Clinical Trials Unit, University of Nottingham, Nottingham/United Kingdom

Contact E-mail Address: Giles.Major@nottingham.ac.uk

Introduction: Clostridium difficile associated diarrhoea (CDAD) is a common nosocomial infection. The most commonly prescribed treatments, metronidazole and vancomycin, have a primary cure rate of 90% but in 4 cases suffer a relapse in the following months. A disrupted microbiota is thought to increase the risk of relapse. Rifaximin is a non-absorbable antibiotic that suppresses C. difﬁcile proliferation. In a trial of 68 patients Carey et al. found that a course of rifaximin after standard therapy reduced relapse rate though not significantly1.

Aims & Methods: We aimed to further investigate the efﬁcacy of rifaximin to prevent CDAD relapse in a parallel group, randomised, placebo controlled trial in 23 hospitals in England. Population: age ≥ 18 with resolution of CDAD after treatment with metronidazole or vancomycin, defined as cessation of diarrhoea for ≥ 2 days. CDAD diagnosis required evidence of toxin production or pseudomembranes at endoscopy. Exclusion criteria were pregnancy or breast feeding; life expectancy < 4 weeks; unable to take intervention (hypersensitivity or swallowing disorder); > 5 days elapsed since treatment. Randomisation was stratified by hospital using a remote, internet-based system. Participants, clinicians and researchers were blind to allocation. Intervention: Rifaximin 1200 mg daily for two weeks then 600 mg daily for two weeks, in three divided doses. Comparator: identical placebo. Primary Outcome: relapse ≤ 12 weeks after treatment initiation, deﬁned as diarrhoea (≥ 3 tines per 6 or 7 stools per day) for 2 days with evidence of toxin production. Sample Size: The planned sample size was 180 to detect a difference in relapse of 20% (30% placebo, 10% rifaximin) with 80% power, allowing for loss to follow-up of 20%. EudraCT 2012-003205-10; www.clinicaltrials.gov NCT01670149; ISRCTN 65163992

Results: Recruitment occurred December 2012–March 2016. Of 2157 patients screened, 151 were eligible, willing and randomised before funding limits were reached (74 placebo, 77 rifaximin). Primary outcome data were available on 130. Mean age was 71.9 (SD 15.3). 36% were in-patients at start of intervention. 36% had a prior recorded episode of CDAD. 26% were using proton pump inhibitors prior to CDAD diagnosis, with a higher rate of use in the rifaximin group (32% vs. 15.9%) on placebo relapse within 12 weeks compared to 11.6% (p=0.08). A difference between groups of 15.7% (95% CI 28.1% to 0.7%, p=0.04). The risk difference was 0.54 (95% CI 0.28 to 1.05, p=0.07). During 6-month follow-up 9 participants died in each group (12%). Adverse event rates were similar between groups.

Conclusion: CDAD relapse rate was 13.7% lower than on placebo. The conﬁdence interval means that lack of effect remains possible but the estimated effect size is similar to Carey’s trial1 with meta-analysis of the trials showing a statistically signiﬁcant effect. The effect size is similar to that reported for fidaxomicin at 40 days2, or for bezlotoxumab at 3 months3. Age and mortality rate were higher in our trial which may reﬂect greater similarity to the population at risk. Comparative trials of the effectiveness and cost effectiveness of alternative treatment strategies should follow.


All other authors have declared no conﬂicts of interest.

References

Aims & Methods: The aim of this study was to assess in-hospital delay of surgery as a potential risk factor for complications in patients with acute appendicitis. PubMed and EMBASE were searched from 1990 to July 2016. Outcome measures of interest were complicated appendicitis, surgical site infections and postoperative morbidity. All studies reporting surgically treated patients with one of these outcome measures in two or more predefined time intervals were included. Adjusted odds ratios were pooled using forest plots if possible. All unadjusted data was pooled using generalized linear mixed models.

Results: Forty-five studies with 152,314 patients were included. Pooled adjusted odds ratios revealed no significantly higher risk for complicated appendicitis when delaying appendectomy for 6 to 12 hours or 13 to 24 hours; odds ratio 1.07 (95% CI 0.98-1.17) and 1.09 (95% CI 0.95-1.24), respectively. For a delay of 24 to 48 hours, a significant adjusted odds ratio of 1.43 (95% CI 1.21-1.70) was identified. Pooled unadjusted data showed a decreased risk for complicated appendicitis when appendectomy was delayed for 24 to 48 hours, however statistical uncertainty in this interval increased considerably compared to the first 24 hours. Conclusion: Delaying appendectomy for up to 24 hours after admission did not result in higher rates of complicated appendicitis, surgical site infections or morbidity. When prompt surgery is hampered by logistic or personal reasons, delaying appendectomy up to 24 hours is an acceptable alternative for patients with no preoperative signs of complicated appendicitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
notably contributed by elderly patients, of which the incidence has increased by three-fold over the period. Recurrence at 60 days increased from 5.7% in 2006 to 9.1% in 2014 (P<0.001). The increased use of proton-pump inhibitors accounted for 58.8% of the surge.

Conclusion: The incidence of C. difficile infection has increased more than three-fold, and was associated with an increased disease recurrence and use of proton-pump inhibitors. Our results suggest need for further surveillance in Asia which hovers half of the world’s population.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0428 THE PROPHYLACTIC CLIP APPLICATION BEFORE SNARE POLYPECTOMY BLEEDING IN LARGE PEDUNCULATED POLYPS

J.S. Sohn, S.H. Park, Y. Song, K. Kim

Background: The prophylactic hemoclip can be used to reduce post-polypectomy bleeding in large pedunculated polyps. The aim of the present study was to evaluate the effectiveness of prophylactic clips application before snare polypectomy in large pedunculated polyps.

Materials and Methods: We performed prophylactic clip application before snare polypectomy for large pedunculated polyps (>1 cm in size) in 116 patients. Prophylactic clips were applied in the two groups with or without prophylactic clips application. Immediate PPB was defined as bleeding that continued for over 30 minutes from the polypectomy site and graded from grade 1 to 4, and delayed bleeding was defined as a history of hematochezia from the day of procedure to the day of first visit of outpatient clinic.

Results: Sixty-seven patients were included in the clip group and 49 patients in the control group. Prophylactic clips application reduced immediate PPB (P=0.008). However, delayed bleeding was not different in both groups (4.5% vs. 11.4%, P=0.208). Among delayed bleeds, 15 patients were treated by endoscopic hemostasis. The bleeding was significantly lower in the clip group than in the control group (4.5% vs. 20.0%, P=0.008).

Conclusion: Prophylactic clip application before snare polypectomy is effective in reducing immediate PPB.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0429 DOES CONTINUATION OF WARFARIN BECOME A POST-PROCEDUREAL ALTERNATIVE METHOD TO HEMOClip REPLACEMENT IN COLONIC POLYPECTOMY/ENDOSCOPIC MUCOSAL RESECTION?

I. Saito1, S. Ono1, Y. Takeda2, K. Takemura3, H. Doyama4, Y. Tsuji5, K. Niimi6, S. Kodashima7, N. Yamamichi8, M. Fujishiro9, K. Koike1

1Department Of Endoscopy & Endoscopic Surgery, Graduate School Of Medicine, the University of Tokyo, Tokyo/Japan
2Department Of Gastroenterology, The University of Tokyo Hospital, Tokyo/Japan
3Department Of Gastroenterology, Ishikawa Prefectural Central Hospital, Ishikawa/Japan
4Center For Epidemiology And Preventive Medicine, Graduate School of Medicine, the University of Tokyo, Tokyo/Japan

Introduction: Heparin replacement (HR) during periprocedural periods is described in various guidelines as the recommended method for colorectal polypectomy while discontinuing warfarin. However, the rate of post-colonoscopic polypectomy bleeding in patients undergoing HR has been reported to be as high as 20%. As an alternative method to HR, colonic polypectomy without discontinuation of warfarin may be feasible, however there is still insufficient evidence. The aim of this study was to assess the safety of colonic polypectomy/endoscopic mucosal resection (EMR) without discontinuation of warfarin during periprocedural periods.

Materials and Methods: This is a prospective multicenter single-arm exploratory study in Japanese patients who received warfarin for the purpose of prevention of thrombosis. Patients were prospectively enrolled and underwent colonoscopic polypectomy or EMR without discontinuation of warfarin. Conventional clip closure of the resection site was performed in all cases and oral diet was resumed 2 days after the procedure. The primary outcome was post-polypectomy/EMR bleeding that was confirmed by emergency endoscopy or a decrease in the hemoglobin level of >2 g/dl with hematochezia even if the bleeding site was not identified.

Results: Between January 2015 and November 2016, a total of 30 consecutive patients (M:F; 26:4, 69.9±8.0 years) were enrolled in this study after written informed consent was obtained. A total of 81 lesions (tumor diameter: 5.4±2.9 mm, adenoma 70, others 10, lost lesion 1, number of polypctomy clips 4.9±2.2) were treated by polypectomy/EMR. Four patients experienced post-polypectomy/EMR bleeding (4/30: 13.3%) in 3–11 days after the procedure, although no cases required blood transfusion. In 3 of these bleeding cases, a single responsible site was identified by emergency endoscopy. Therefore, the confirmed rate of post-polypectomy/EMR bleeding based on the number of recurred lesions was 3.9% (3/76), but may range to 9.5% (8/81). There were no other adverse events.

Conclusion: The rate of post-colonoscopic polypectomy/EMR bleeding in patients without discontinuation of warfarin single therapy was comparable to that in patients undergoing HR. Continued warfarin without discontinuation of warfarin is feasible and may reduce the hospitalization associated with HR.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0430 EFFECTS OF HEPARIN BRIDGING THERAPY ON POST-POLYPECTOMY BLEEDING AND THROMBOEMBOLIC RISKS IN PATIENT UNDERGOING COLONOSCOPIC POLYPECTOMY

N. Hayashi1, H. Kato2, K. Kato3, Y. Okamoto3, T. Mizoshita3, T. Shinnara1, E. Kubota1, S. Tanida1, T. Joh1

1Gastroenterology and Endoscopy Center, Tokyo Women’s Medical University, Tokyo/Japan
2National Cancer Center Hospital East, Saitama/Japan
3Gastroenterology and Endoscopy Center, Tokyo Women’s Medical University, Tokyo/Japan

Introduction: In patients undergoing colonoscopy/EMR without discontinuation of warfarin, the risk of post-polypectomy bleeding (PPB) is high. Although heparin bridging therapy (HBT) has been described in various guidelines as the recommended method while discontinuing warfarin, its efficacy has not been confirmed. This is a prospective, single-center, single-arm study to assess the safety and efficacy of colonic polypectomy/EMR without discontinuation of warfarin.

Materials and Methods: This is a prospective multicenter single-arm exploratory study in Japanese patients who received warfarin for the purpose of prevention of thrombosis. Patients were prospectively enrolled and underwent colonoscopic polypectomy or EMR without discontinuation of warfarin. Conventional clip closure of the resection site was performed in all cases and oral diet was resumed 2 days after the procedure. The primary outcome was post-polypectomy/EMR bleeding that was confirmed by emergency endoscopy or a decrease in the hemoglobin level of >2 g/dl with hematochezia even if the bleeding site was not identified.

Results: Between January 2015 and November 2016, a total of 30 consecutive patients (M:F; 26:4, 69.9±8.0 years) were enrolled in this study after written informed consent was obtained. A total of 81 lesions (tumor diameter: 5.4±2.9 mm, adenoma 70, others 10, lost lesion 1, number of polypctomy clips 4.9±2.2) were treated by polypectomy/EMR. Four patients experienced post-polypectomy/EMR bleeding (4/30: 13.3%) in 3–11 days after the procedure, although no cases required blood transfusion. In 3 of these bleeding cases, a single responsible site was identified by emergency endoscopy. Therefore, the confirmed rate of post-polypectomy/EMR bleeding based on the number of recurred lesions was 3.9% (3/76), but may range to 9.5% (8/81). There were no other adverse events.

Conclusion: The rate of post-colonoscopic polypectomy/EMR bleeding in patients without discontinuation of warfarin single therapy was comparable to that in patients undergoing HR. Continued warfarin without discontinuation of warfarin is feasible and may reduce the hospitalization associated with HR.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
I. Van Rongen

LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE P0432 EARLY VERSUS STANDARD COLONOSCOPY – A

than those in the single bleeding episode group (5902 Agatston scores in the recurrent bleeding episode group were significantly higher

fusion need, was determined.

chronic liver disease, chronic kidney disease, and chronic obstructive pulmonary

Moreover, the relationship between recurrent bleeding episodes and the patients’

every calcified speck were calculated across all lesions in a slice from the level of

K. Shigita1, N. Asayama1, A. Fukumoto1, S. Mukai1

Gastroenterology, Hiroshima City Asa Citizens Hospital, Hiroshima City/Japan

Contact E-mail Address: t-ayama@assa-hosp.city.hiroshima.jp

Introduction: Intermittent bleeding from colon diverticulum has a significant clinical impact with some cases experiencing recurrent bleeding episodes for several years. No report has directly evaluated the association between arterio-

Aims & Methods: We sought to assess the degree of arteriosclerosis in cases with diverticulum bleeding as well as the patients’ clinical characteristics. We conducted a retrospective cohort study in a group of 79 consecutive patients with colon diverticulum bleeding (51 men) who underwent both colonoscopy and computed tomography (CT) between August 2007 and March 2014. The mean age of the patient population was 69.5 years (range 29–91 years) and mean (±standard deviation) follow-up time was 6.2 (±2.0) years (range 3.1–9.7 years). Patients were divided into two groups: the recurrent bleeding episode group and the single bleeding episode group. Recurrent bleeding episodes were defined as bleeding intervals of >1 month. Cases that underwent successful therapy during the initial bleeding episode were excluded. We compared Agatston scores (total calcium score) between the two groups of patients to assess the degree of arteriosclerosis. A calcified lesion was defined as an area of at least 2 connected pixels with >120 Hounsfield units (HU) on the unenhanced CT scan. Aortic mural calcified area ⩾ cofactor (1:120–199HU; 2:200–299HU; 3:300–399HU, 4:≥400HU) was determined. The sums of the scores for every calcified speck were calculated across all lesions in a slice from the level of the diaphragm to the aortoiliac bifurcation to obtain the total calcium score. Moreover, the relationship between recurrent bleeding episodes and the patients’ characteristics including age, sex, smoking habit, comorbidity (hypertension, cerebro-cardiovascular disease, diabetes mellitus, hyperlipidaemia, chronic liver disease, chronic kidney disease, and chronic obstructive pulmonary disease), internal medicine (antithrombotic drug, non-steroidal anti-inflammato-

drug, and proton pump inhibitor), shock vital on hospitalization, and transfusion need, was determined.

Results: Overall, 39 (49%) cases had recurrent bleeding episode and 40 (51%) had single episode. The cumulative recurrent bleeding episode rate in the recur-

rent bleeding episode group was 33% and 59% at 1 and 3 years, respectively. Agatston scores in the recurrent bleeding episode group were significantly higher than those in the single bleeding episode group (5902 ± 7187 vs 2912 ± 4687, P = 0.0031). Clinical characteristics associated with recurrent bleeding episodes were cerebro-cardiovascular disease (P = 0.0044), chronic kidney disease (P = 0.031), and antithrombotic drug (P = 0.048) in univariate analysis. Subsequent multivariate analysis determined that cerebro-cardiovascular disease was an independent contributor to recurrent bleeding episode (OR: 5.48; 95% CI: 1.11–24.07).

Conclusion: Arteriosclerosis along with cerebro-cardiovascular disease may be a significant contributing factor for colon diverticulum recurrent bleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


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scopy in hospitalized patients with lower gastrointestinal bleeding – a meta-


P0433 THE COMPARISON OF DIRECT ORAL ANTICOAGULANTS (DOAC) AND WARFARIN FOR ANTICOAGULATION IN THE PATIENTS WITH GASTROINTESTINAL BLEEDING


Gastroenterology, Mitsui Memorial Hospital, Tokyo/Japan

Contact E-mail Address: kenken.kojiken.529@gmail.com

Introduction: Direct oral anticoagulants (DOAC) are now popularly used as anticoagulation for atrial fibrillation and deep vein thrombosis, as well as Warfarin. But, direct comparison of DOAC and warfarin in the patients with gastrointestinal bleeding was little reported.

Aims & Methods: We retrospectively analyzed 18 on DOAC and 60 cases on Warfarin of the patients with gastrointestinal bleeding from January 2011 to March 2017 on the basis of single-center experience in Japan. We analyzed characteristics associated with recurrent bleeding episodes during hospitalization, the duration from bleeding to endoscopy, from endoscopy to discharge and from bleeding to discharge in both group. In DOAC group, each 6 patients took Dabigatran, Rivaroxaban and Apixaban.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. National heart, lung, and blood institute. Guide to management of antithrombotic therapy during the initial bleeding episode were excluded. We compared

antiplatelet therapy, n (%) 8 (47.1%) 22 (36.7%) 0.44

Male sex, n (%) 15 (83.3%) 41 (68.3%) 0.20

Age, years 74.0 ± 4.2 74.4 ± 4.2 0.87

Anti-platelet therapy, n (%) 8 (47.1%) 22 (36.7%) 0.44

Lower gastrointestinal bleeding, n (%) 12 (66.7%) 29 (48.3%) 0.17

Hemoglobin, g/dL 11.1 ± 0.7 9.6 ± 0.4 0.06

PT-INR 1.51 ± 0.36 2.50 ± 0.19 0.02

Fresh frozen plasma transfusion, n (%) 3 (16.7%) 20 (33.3%) 0.16

Concentrated red cell transfusion, n (%) 9 (50.0%) 32 (53.3%) 0.80

Re-bleeding during hospitalization, n (%) 1 (5.6%) 12 (20.0%) 0.11

(continued)
continued

Results: Patient characteristics such as sex, age, anti-platelet therapy, location of bleeding and bleeding after endoscopic procedure had no significant difference in both groups. Upper gastrointestinal bleeding occurred 6 (33.3%) of DOAC group and 1 (1.7%) of Warfarin group, respectively. Prothrombin time (PT-INR) had trended to be transfused at high rate in Warfarin group (16.7% vs 33.3%, p = 0.16). Re-bleeding rate during hospitalization had no significant difference in both group, but tended to be higher in Warfarin group (5.6% vs 20.0%, p = 0.11). The duration from bleeding to endoscopy had no significant difference between both group (0.5 days vs 0.2 days, p = 0.52), but the duration from endoscopy to discharge was significantly longer in Warfarin group (9.0 ± 5.5 days vs 23.0 ± 3.0 days, p = 0.03). Also, the duration from bleeding to discharge was significantly longer in Warfarin group (9.8 ± 5.4 days vs 24.2 ± 3.0 days, p = 0.02). Thrombotic embolism during hospitalization occurred only 1 (1.7%) of Warfarin group.

Conclusion: The duration of hospitalization was significantly shorter in DOAC group of the patients with gastrointestinal bleeding, and the rate of re-bleeding and re-bleeding tended to be lower in DOAC group. This study showed that DOAC may be more superior to Warfarin as anticoagulation for atrial fibrillation and deep vein thrombosis at the quality of life (QOL) in the patients with gastrointestinal bleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0436 WORLD ENDOSCOPY ORGANISATION CONSENSUS STATEMENTS ON POST-COLONOSCOPY/POST-IMAGING COLORECTAL CANCER


1Gastroenterology, University Hospital North Tees NHS Dept. of Gastroenterology, Stockton-on-Tees, United Kingdom
2Gastroenterology And Hepatology, Maastricht Hospital, Maastricht/Netherlands
3Division Of Gastroenterology, Department Of Internal Medicine, National Taiwan University, Taipei City/Taiwan
4California And San Francisco Medical Center, Kaiser Permanente Division of Research, Oakland/United States of America
5Pathology Department - Centre De Diagnostic Biomedic (cdb), Hospital Clinic Barcelona, University of Barcelona, Barcelona/Spain
6Gastroenterology & Hepatology, AMC - Gastroenterology & Hepatology, AMC; Amsterdam/NL, Amsterdam/Netherlands
7Kep, Karolinska Institutet, Institution of Medicine Soha, Stockholm/Sweden
8Clinical Epidemiology, Leibniz Institute for Prevention Research and Epidemiology, Bremen/Germany
9Department Of Gastroenterology, Maria Sklodowska-Curie Memorial Center and Institute of Oncology - Department of Gastroenterology, M. Warsaw/Poland
10Cancer Screening Center, National Cancer Center Hospital, Tokyo/Japan
11Histopathology, Netherlands Cancer Institute, Amsterdam/Netherlands
12Cancer Epidemiology Group, University of Leeds, Leeds/United Kingdom
13Radiology And Imaging, University College London Hospital, London/United Kingdom
14Prevention And Cancer Control, Cancer Care Ontario, University of Toronto, Toronto/Canada
15Gastroenterology, YAMC, White River Junction, United States, Vermont/United States of America
16University of Pittsburgh and the University of Pittsburgh Cancer Institute, Pittsburgh/United States of America
17Section Of Gastroenterology, University of Manitoba and the University of Manitoba, Winnipeg Clinic, University of Manitoba, Winnipeg/Canada
18Division of Gastroenterology, Sunnybrook Health Sciences Centre, Toronto/Canada
19Medicine, Gloucestershire NHS Foundation Trust - Medicine, Gloucestershire NHS Foundation Trust; Cheltenham/Gloucester; Cheltenham/United Kingdom
20FCIC, Flinders University, Templestowe Lower/Australia

Contact E-mail Address: iosi@ifbeintaris@nhs.net

Introduction: Colonoscopy is an imperfect tool. Several publications confirm colorectal cancer may manifest after a negative colonoscopy(1–3). The term “interval cancer” has often been used for cancers appearing after a negative colonoscopy. However, this is primarily a screening term(1). Post-colonoscopy colorectal cancer (PCRC) is a broader term for cancers detected after a negative colonoscopy in any setting, including screening(2). Although there is overlap between these two terms, they are not synonymous. PCRC can be thought of as the overarching term. PCRC can be subdivided into interval cancers (identified prior to the next recommended screening or surveillance procedure) and non-interval cancers (identified at or after a recommended screening or surveillance interval, or where no subsequent screening or surveillance interval was recommended, up to 10 years following the colonoscopy).

Aims & Methods: The goal of this consensus process was to provide a framework for the terminology, identification, analysis and reporting of cancers appearing after a negative colonoscopy or computed tomographic colonography (post-colonoscopy/post-imaging colorectal cancers- PCRC/PICRC respectively). We based our methodology on The Appraisal of Guidelines for Research and Evaluation (AGREE II) tool(4). An international multidisciplinary team (gastroenterologists, pathologists, epidemiologists, a radiologist and a patient representative) were summoned by the World Endoscopy Organisation (WEO); the final statement was recommended, up to 10 years following the colonoscopy.

P0435 INCREASED INCIDENCE OF OVARIAN CANCER FOLLOWING COLORECTAL CANCER: A KOREAN NATIONAL WIDE COHORT STUDY

D.W. Shin1, D.H. Lee1, H.S. Kim1

1Internal Medicine, SNUBH, Seongnam/Korea, Republic of

Contact E-mail Address: delight0618@naver.com

Introduction: In Korea, colorectal cancer is the most common cancer among older aged women over 65 years old. The incidence of colorectal cancer, in particular, is dramatically increasing due to environmental factors such as the westernized eating behaviors. Furthermore, due to advanced medical, the survival rate of those with advanced colon cancer is increasing. An increased risk of malignant ovarian tumors is associated with colorectal cancer has been suggested recently, but adequate studies have not been conducted. The purpose of the study is to determine whether ovarian cancer is more common in the patients diagnosed with colorectal cancer than in the general population. If a woman diagnosed with colorectal cancer indeed has a high incidence of ovarian cancer, a screening test can be performed for high-risk patients.

Aims & Methods: This is a retrospective cohort study using data registered in the National Health Insurance Corporation as a cancer diagnostic code since 2007. In Korea, once cancer is diagnosed, this information is recorded by the National Health Insurance Corporation with a relevant code, and this system provides every patient’s data for medical research purposes. The colorectal cancer group includes patients newly enrolled with the corresponding diagnostic code (ICD-10 code C18, C19, and C20). The 56,682 colorectal cancer patients and 288,119 sex-matched controls were included. The main exposure was the colorectal cancer diagnosis. The main outcomes were used to facilitate the creation of comparison group that is similar. Each cancer patient was matched to five individuals in the unexposed cohort. All data was followed by a new diagnostic code of ovarian cancer (ICD-10 code C56) was given. After adjusting for sex, age, smoking, drinking, exercise and comorbidities (diabetes mellitus, hypertension, and hyperlipidemia), further analysis was performed. Hazard ratios and 95% confidence intervals were calculated via Cox proportional hazards regression models. Statistical analysis will be performed with SPSS version 24.0. When P < 0.05, the result was defined as statistically significant.

Results: Patients with colorectal cancer were followed up for an average of 4.4 years until the occurrence of ovarian cancer. During the follow-up period, 338 out of 56,682 (0.6%) colorectal cancer patients and 258 out of 288,119 (0.9%) people in the general population were diagnosed with ovarian cancer. Ovarian cancer was more common in the colorectal cancer group than the general population Hazard ratio (HR) 7.13, 95% Confidence interval (CI) 5.06–10.05. The above result was conducted only for those who had medical checkup data within one year (14, 190 patients in colorectal cancer group, 71,933 people in the control group). Even though the subjects in this group were adjusted for several factors (age, sex, smoking, drinking, exercise, diabetes, hypertension, and hyperlipidemia), the result was also significant in ovarian cancer patients as a whole for colorectal cancer group [HR 7.12, 95% CI = 5.05–10.04]. Colorectal cancer patients had a higher risk of ovarian cancer across all age groups including patients under the age of 55 years [HR 10.69, 95% CI = 6.26–18.26] and patients older than 55 years [HR 5.17, 95% CI = 3.26–8.19].

Conclusion: In conclusion, data from the National Health Insurance Corporation revealed that the incidence of ovarian cancer in colorectal cancer patients was higher than that of the general population. In woman diagnosed with colorectal cancer, the screening test should be done to monitoring the occurrence of ovarian cancer. Further research is necessary to determine the interactive association between the development of ovarian cancer and colorectal cancer, and large prospective studies are needed.

Disclosure of Interest: All authors have declared no conflicts of interest.
5 (strongly disagree). A modified Delphi process was followed; consensus reached on agreement. In areas continuing disagreement, a recommendation for or against a particular statement required both >50% of participants in favour and <20% preferring the comparator. Failure to meet this resulted in no recommendation. The GRADE system for rating evidence and strength of recommendations was applied to final statements.

**Results:** The final output consists of 21 statements providing guidance on key aspects of PCCRC/PICRC, namely definitions, terminology, qualitative review/alethia attribution and quantitative assessment of cases. A Root-Cause Analysis checklist as well as a PCCRC/PICRC manuscript peer-review checklist were also developed.

**Conclusion:** This is the first consensus aiming to standardise terminology around PCCRC. Each previous study defined PCCRC differently, making its use for both reporting and purposes impossible. This consensus presents a methodology for analysis of causation of PCCRC/PICRC and defines its potential role as a key quality indicator, providing recommendations for future investigators, policy makers, services and patients.

**Disclosure of Interest:** E. Rekker: Research grant from Olympus and endoscopic equipment on loan from Olympus and Fujifilm.

A. Plumb: I have no conflicts related to the present project. Other disclosures (not related to the present project): I have received payment for educational lectures organized from Fujifilm, a pharmaceutical company, and the medical device company Acelity.

H. Singh: No direct conflicts of interest. In terms of industry funding, disclosure includes Advisory Board for PendoPharm and research funding from Merek Canada.

J. Tinnouth: Lead Scientist for the ColonCancerCheck program, the CRC screening program in Ontario. I am paid a salary for this work.

R. J. L. C. Palee: Director of a Life and Disability Partnership (Quality Solutions for Healthcare) which provides advice and support for quality improvement and QA within and outside of endoscopy, mostly in the UK and Ireland, as well as training internationally.

M. D. Rutter: Research grant from Olympus, speaker fees/travel reimbursement from Falk, Abbvie

All other authors have declared no conflicts of interest.

**References**


**P9437** Excess Risk of Second Primary Cancers in Young-Onset Colorectal Cancer Survivors

X. He 1, W. Wu 1, L. Sun 1, Y. Ding 1, J. Si 1

1Department Of Gastroenterology, Sir Run Run Shaw Hospital, hangzhou/China

2The First Affiliated Hospital, School Of Medicine, State Key Laboratory for Diagnosis of Primary Colon and Rectal Cancer, hangzhou/China

Contact E-mail Address: hexingkang@zju.edu.cn

**Introduction:** Young-onset colorectal cancer (CRC) is still the third most common malignancies in the US according to Colorectal Cancer Statistics, 2017[1]. During past decades, the incidence and mortality of CRC among individuals aged over 50 years are declining significantly, while the rate of CRC in the young is sharply on the rise (2–3). Excluding rate of young-onset CRC, coupled with increased survival rate, would definitely lead to accumulation of young survivors considerably. There is a growing study reporting the risk of second primary cancers (SPCs) in certain cancer survivors, including CRC. Several population-based studies revealed that patients with a history of CRC at high risk of SPCs than the general population[4–6]. However, to the best of our knowledge, very little is known regarding the risk and sites of SPCs following prior diagnosis of CRC in the young (aged ≤ 50).

**Aims & Methods:** To address this important gap, we aimed to quantify the relative risk of SPCs after a diagnosis of CRC in the young CRC survivors. We conducted this retrospective study by utilizing the Surveillance, Epidemiology, and End Results (SEER) database and identified primary CRC patients with subsequent cancers between 1993 and 2013. We excluded cases with less than 6-months latency restriction. Standardized incidence ratios (SIR) and absolute excess risk (AER) were calculated to assess the relative risk for SPCs. SIRs for subgroup analysis were further stratified by gender, race, calendar year, latency period, SEER stage, cancer subsite, radiotherapy. All statistical tests were performed by SEER*Stat version 8.3 and a P value <0.05 was considered statistically significant. Our study was approved by the review board of Zhejiang Institute of Gastroenterology, Sir Run Run Shaw Hospital, China.

**Results:** In young CRC patients, there were 44,724 survivors who developed 51,084 SPCs during the follow-up, including 3283 young (young aged ≤ 50) and 41,189 (old > 50) old survivors. The SIR of all sites significantly decreased with increased age. Compared with the general population, SIRs of all solid tumors and hematological disease were significantly increased in the young. There was significant 43% risk of SPCs in young survivors (SIR = 1.43, 95%CI = 1.39–1.48, AER = 33.85) and slight increases in old survivors (SIR = 1.02, 95%CI = 1.01–1.03, AER = 4.20). For young survivors, small intestine (SIR = 8.36, colon (SIR = 3.77), rectum (SIR = 3.57), bile ducts (SIR = 3.70) sites were the most commonly affected, a recommendation for or against a particular statement required both >50% of participating in favour and <20% preferring the comparator. Failure to meet this resulted in no recommendation. The GRADE system for rating evidence and strength of recommendations was applied to final statements.

**Conclusion:** This is the first study to report on the pooled incidence of FIT and gFOBT iCRC in screening setting. The incidence rate of iCRC after negative FOBTs are limited.

**Aims & Methods:** In this systematic review and meta-analysis we compared the incidence of iCRCs following a negative fecal immunochemical test (FIT) or guaiac fecal occult blood test (gFOBT). Second, we assessed if screening-related or patient-related factors are associated with FOBT iCRCs. Ovid Medline, Embase, The Cochrane Library, the Science Citation Index, PubMed publisher and Google scholar were searched up to May, 2016. All studies reporting on the incidence of FIT or gFOBT iCRCs in average CRC screening populations were included, without language restrictions. Main outcome was pooled incidence rate of iCRCs per 100,000 person-years (p-y). FOBT iCRC was according to international standards defined as cancer that developed after a negative FOBT and before the next FOBT was due. Pooled incidence rates were obtained by fitting random effect poisson regression models. The between-study heterogeneity of effect-size was quantified using the I².

**Results:** We identified 5,873 records, of which 413 full-text articles were assessed for eligibility and 30 studies were included in both qualitative and quantitative analyses. Meta-analyses comprised data of 5,252,563 screening participants, in which 14,030 screen-detected CRCs and 5398 FOBT iCRCs were documented. Pooled incidence rates of iCRC following FIT and gFOBT were 20 (95%CI: 14.28; 28; 3; 29) and 39 (95%CI: 26.61; 49) per 100,000 p-y, respectively. The pooled incidence rate ratio of FIT iCRC compared to gFOBT iCRC was 0.50 (95% CI: 0.30-0.84, n = 30 studies). For every FIT iCRC, three CRCs were found with FIT, while for gFOBT the ratio between CRC and gFOBT iCRC detected CRC was 1.13, Table 1. No significant differences were found between the relative risk of FOBT iCRC in the second and third screening round compared to the first, with 1.03 (95% CI: 0.94-1.13) and 1.08 (95% CI: 0.95-1.22), respectively. Incidence rate ratio of FOBT iCRC screening populations was 1.13, Table 1. For males relative to females and 5.0 (95% CI: 1.2-2.1) for screenees aged ≥ 60 relative to <60 years.

**Table 1:** Baseline data of 30 studies included in qualitative meta-analyses displayed by test type

<table>
<thead>
<tr>
<th>Screening participants</th>
<th>Screen-detected FIT CRCs</th>
<th>n = 5, 252, 563</th>
<th>CRCs n = 14, 030</th>
<th>39, 398</th>
<th>Ratio screen-detected CRC to FIT CRCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT n, (%)</td>
<td>4, 774, 516 (91)</td>
<td>12, 172 (87)</td>
<td>4, 003 (80)</td>
<td>n = 398</td>
<td>1.3</td>
</tr>
<tr>
<td>gFOBT n, (%)</td>
<td>4, 786, 049 (91)</td>
<td>18, 583 (13)</td>
<td>1, 395 (20)</td>
<td>1.3</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** This is the first study to report on the pooled incidence of FIT and gFOBT iCRC in screening setting. The incidence rate of iCRC after a negative
FOBT is two-fold higher in gFOBT than in FIT, which supports the use of FIT over gFOBT as a screening tool. However, for every three FIT-detected CRCs, still one CRC is missed, which highlights the importance to adequately inform screenees about the risk of developing a colorectal carcinoma after a negative FIT.

Disclosure of Interest: E. Wieten: I declare no competing interests. All other authors have declared no conflicts of interest.

## P0439 MEASURES OF BODY COMPOSITION AND GENDER DIFFERENCES IN RISK FOR COLORECTAL CANCER – A POPULATION-BASED COHORT STUDY

A. Forsberg1, F. Sköldberg2, P. Thelin Schmidt3, A. Carlsson3, K. Önnerhuber3, H. Hagström4, A. Andreasson1

1 Karolinska Institutet, Institute of Medicine Solna, Stockholm/Sweden
2 Upptäckta, Department of Surgical Sciences, Uppsala/Sweden
3 Karolinska Institutet Huddinge, Division of Family Medicine, Department of Neurobiology, Care Science and Society, Huddinge/Sweden
4 Skane University Hospital Malmö, Department of Gastroenterology and Hepatology, Malmö/Sweden

Contact E-mail Address: anna.forsberg@ki.se

Introduction: Age and family history of colorectal cancer (CRC) are the strongest risk factors for CRC. Obesity, commonly assessed based on body mass index (BMI), is associated with an increased risk for CRC in men but the association is weaker in women and differs between studies. We investigated which of the following body composition measures: BMI, waist-to-hip ratio (WHR), weight-height-ratio (WHRR), weight-height-hip ratio (WHRH), A Body Shape Index (ABSI) and percent body fat that best predict the development of CRC in men and women.

Aims & Methods: We used data from Malmö Diet and Cancer cohort in Sweden, including 16,840 women and 10,903 men (mean age, 58.1 years at baseline), followed for a median of 19.8 years. We identified cases with CRC until the end of 2014 using national Swedish registers. Hazard ratios (HR) for CRC, colon cancer (CC) and rectal cancer (RC) per one standard deviation increase in each body composition measure respectively were calculated using Cox regression models, stratified by sex and adjusted for age, alcohol consumption, smoking, education and physical activity. Likelihood ratio tests and C-statistics were calculated to identify the anthropometric measure that improves the null model the most.

Results: Incident CRC occurred in 880 individuals (477 women) during follow-up. All body composition measures apart from WHRR significantly predicted CRC in men and waist circumference (WC) was the best predictor based on C-statistics and LR-test (HR per standard deviation [SD] increment, 1.19; 95% CI, 1.08–1.31, LR-test p < .001, C-statistics 0.6278). The association between WC and CRC was only found in men with a BMI above 25. All body composition measures apart from WHRR and percent body fat significantly predicted CC in men, again WC was the best predictor (HR 1.25; 95% CI, 1.11–1.42, LR-test p < .001, C-statistics 0.6444). ABSI was the only measure significantly associated with risk for RC in men (HR, 1.24; 95% CI, 1.05–1.47). In women neither of the measures was significantly associated with an increased risk for CRC, CC nor RC.

Conclusion: In this Swedish population-based cohort study on well-characterized colorectal cancers, both tumor-promoting and tumor-suppressing effect have been reported. The role of Th17 cells in colorectal cancer (CRC) remains controversial and the specific mechanism of how Th17 cells affect the development of CRC remains to be explored.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

## P0441 MICRONA EXPRESSION PROFILE IN RECTAL CANCER

J. Král1, V. Rusekova2, O. Langerova3, V. Korenkova2, P. Vodíčka1, J. Spíčak3, J. Slyšková3

1 Dept. Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
2 Institute of Biotechnology AS CR, v.v.i., Prague/Czech Republic
3 Department Of The Molecular Biology Of Cancer, Institute of Experimental Medicine AS CR, v.v.i., Prague/Czech Republic

Contact E-mail Address: jan.kral@centrum.cz

Introduction: Colorectal cancer (CRC) remains the second most common cancer in women and third in men worldwide, with more than 1.3 million patients diagnosed every year (1–3). Still more than 50% of patients are diagnosed with advanced disease (stage III and IV), which has worse prognosis and survival. There is a need for new biomarkers for early diagnostics, predicting patient’s treatment response and follow-up. Recent data suggest that microRNAs (miRNAs) might be utilized as such biomarkers (4).

Aims & Methods: We focused on specifying differences in expression profile between rectal tumor and adjacent healthy mucosa. Individual miRNA levels were analyzed in relation to patient’s treatment response and post-treatment recurrence, as well as to the presence of 3D-miRNAs with possible role of predictive and prognostic markers in rectal cancer. At first, we screened 20 pairs of rectal tumors and healthy surrounding mucosa for the expression levels of 2555 microRNAs using 3D-Genie TORAY microarray system. We have identified 71 candidate miRNAs with different expression profile in tumor and healthy tissue. These 71 miRNAs were further explored and verified in larger cohort of 101 rectal tumors and 105 colon tumors compared to matched healthy tissues by qPCR (Fluidigm BioMark). Results were analyzed in relation to different clinicopathological characteristics of tumors, to individual patient’s treatment response and overall or disease-free survival.

Results: We confirmed 18 miRNAs to be differently expressed in rectal tumors as compared to healthy mucosa. This expression profile was observed in tumors resected prior to neoadjuvant therapy, but not in those that were neoadjuvantly treated. Only 2 miRNAs were dysregulated irrespectively on neoadjuvant therapy. We have further investigated whether this signature is specific for rectal cancer, or is observed also in colon cancer. We have found that 14 out of 18 miRNAs were indeed commonly dysregulated in whole CRC, and 4 miRNAs were dysregulated in rectal tumor only. In order to identify miRNAs with any association to treatment, we have analyzed miRNA expression profile of rectal tumors in relation to patient’s treatment response and their long-term survival. Thirteen miRNAs were differently expressed between tumors that responded to therapy and those that relapsed.

Conclusion: We have identified miRNA expression patterns specific for rectal cancer, which identified miRNA set in relation to different clinicopathological characteristics of tumors, to individual patient’s treatment response and overall or disease-free survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P0442 MUSCARINIC-3 RECEPTOR TARGETED MiRNAS ARE INVOLVED IN BILE ACID-INDUCED PROLIFERATION ON H508 COLON CANCER CELL LINE**

F. Tekin, C. Aktan, N. Oruc, O. Onutemi*.

**Gastroenterology, Ege University Medical School, Izmir/Turkey**

Contact E-mail Address: drtekinfatih@gmail.com

**Introduction:** Studies with the colon cancer cell lines which express muscarinic-3 (M3) receptors showed that taurine conjugates of lithocholic acid, but not other bile acids, bind to M3 receptors, and stimulate an increase in cell proliferation. On the other hand, many microRNAs (miRNAs) are involved in colon carcinogenesis. However, the interaction of bile-acid/M3 receptors and miRNAs and their potential effects on colon carcinogenesis remains to be elucidated.

**Aims & Methods:** For the first time in the literature, we examined the possible role of M3 receptor-targeted miRNAs on two human colon cancer cell lines: H508, which expresses M3 receptors, and SNU-C4, which does not. Cell proliferation for 6 days after sodium taurocholic acid (ST) and atropin (A) treatment was analysed by WST-1 method. Expression of M3 receptor gene at mRNA level was analysed by qPCR, and at protein level by Western Blot method. Apoptotic experiments were analysed by Annexin V assay. MiRNAs which possibly targeted M3 receptors were identified by in silico analyses. The methods were repeated three times, and the average values were calculated.

**Results:** When compared to SNU-C4 cells, M3 receptor gene expression was found to be increased 70-fold on H508 cells. After a 6-day incubation, maximum H508 cell proliferation (300% ) was achieved on 5th day with a dose of 300 µM ST, inhibited by a dose of 1 µM A. In contrast, the SNU-C4 cells showed no significant change in cellular proliferation. Treatment of H508 cells with ST caused a decrease (2.53-fold) of M3 receptor gene expression, however, no change of M3 receptor at protein level was seen. No changes in apoptosis on both colon cancer cell lines were observed. Of 25 M3 receptor-targeted miRNAs, expression levels altered in 9; 6 of them were up-regulated (hsa-miR-129-5p, hsa-miR-30c-5p, hsa-miR-224-5p, hsa-miR-30b-5p, hsa-miR-522-3p, hsa-miR-1246) and 3 of them (hsa-miR-30c-5p, hsa-miR-147b, hsa-miR-855-3p) were down-regulated on H508 cells (p < 0.05).

**Conclusion:** ST interact with M3 receptors which modulate colon cancer cell proliferation on H508 cells. M3 receptor-targeted miRNAs are involved in ST induced proliferation. Whether the use of ursodeoxycholic acid, selective anti-miRNAs, anti-cholinergic agents or other approaches to blocking potential interactions of bile acids/salts with neoplastic colonic epithelium may be a useful adjunct to colon cancer prevention or treatment remains to be determined.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0443 COLORECTAL CANCER AND DYSLIPIDEMIA: CAUSE OR CONFOUNDING? A MENDELAN RANDOMIZATION STUDY**

G. Ibáñez1, A. Diez-Villanueva1, M. Riera-Ponsati1, E. Guino1,B. Pérez-Gómez2, M. Bustamante1, V. Martín1, J. Llorca5, P. Amiano6, E. Ardanaz7, A. Tardón8, J.J. Jiménez-Moleon9, R. Peiro10, J. Alguacil11, C. Navarro12.

1.Universidad de Cantabria - IDIVAL, Santander/Spain
2Grupo De Investigacion En Interacciones Gen Ambiente Y Salud, Universidad de Leon, Leon/Spain
3Universidad de Cantabria - IDIVAL, Santander/Spain
4Public Health Division Of Gipuzkoa, Biodonostia Research Institute, San Sebastián/Spain
5Navarra Public Health Institute, Navarra/Spain
6University Institute of Oncology of Asturias, Oviedo/Spain
7Instituto de Investigacion Biosanitaria de Granada (ibs.GRANADA), Granada/Spain
8Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana FISABIO, Valencia/Spain
9Centre for Research in Health and Environment ( CYFMA ), Huelva/Spain
10Inm-arrizasca And Department Of Health And Social Sciences, Universidad de Murcia, Murcia/Spain

Contact E-mail Address: gibaneza@gmail.com

**Introduction:** Dyslipidaemia and statin use have been associated to colorectal cancer (CRC), but prospective studies have shown controversial results. Dyslipidaemia has been thought to have an important role in inflammatory pathways, oxidative stress and insulin resistance, which could contribute to the pathogenesis of cancer. However, findings from prospective studies that have examined the association between serum dyslipidaemia (low density lipoprotein cholesterol (LDL), HDL or TG) and colorectal neoplasia have been inconsistent. [1–4] It is unknown whether lipids and lipoproteins cause cancer or are intermediate or correlated factors within carcinogenic pathways. Epidemiological studies could be confounded by 3-Hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors (statins) use, which might also have a protective effect to CRC. It is unclear whether it is statin use or dyslipidaemia that prompted statin use, which may be associated with CRC. Indeed, a large number of epidemiological studies have examined the effect of statins on colorectal cancer risk, with often inconsistent results.[5–6] A Mendelian randomization approach could help to establish a causal relationship between dyslipidaemia and CRC.

**Aims & Methods:** We aimed at determining whether dyslipidaemia is causally linked to CRC risk and to explore association of statins with CRC. A case-control study was performed including 1336 CRC cases and 2744 controls (MCC-Spain) between 2008 and 2013. Subjects were administered an epidemiological questionnaire that included lifetime usual regular use of prescription drugs. Also, subjects were genotyped with an exome array supplemented with 5000 custom SNPs. We applied the Mendelian randomization approach. The array included 136 SNPs previously shown to be associated with blood lipids levels in GWAS, that were used to build three genetic lipid scores, as the count of risk alleles. The scores were specific for low density lipoprotein cholesterol (LDL), high density lipoprotein cholesterol (HDL) or triglycerides (TG). We tested on regular use of statins and the genetic lipid scores with logistic regression models, adjusted for potential confounders.

**Results:** The LDL genetic risk score was significantly associated with statin consumption (OR = 1.07, 95%CI 1.05–1.10, p = 4.4e-11). The dyslipidaemia genetic risk score was not significantly associated with CRC for either of the target lipids studied. Cases had the same average alleles as controls in all the lipids traits. Statin use was a borderline significant protective factor for CRC (multivariate OR = 0.83; 95%CI 0.69–1.00, p = 0.049).

**Conclusion:** Using the Mendelian randomization approach, our study does not support the hypothesis that lipid levels are associated with the risk of CRC. This study does not rule out, however, a possible protective effect of statins in CRC by a mechanism unrelated to lipid levels.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


Our results support that LINC00152 lncRNA can contribute to CRC development by facilitating cell proliferation through upregulation of cyclin D1.

Introduction:
Colonoscopy surveillance of polyps is based on their size, number and location. Risk of developing AML for individual genetic markers was studied prospectively. High level of methylation on CpG islands (CIMP-H) was also tested using allelic discrimination by real-time PCR and direct DNA sequenciation, respectively. Histone H3 hypermethylation in cell lines expressing mutant KRAS. DNA hypermethylation was determined by the Illumina 880K methylation array and Methyl Light qMSP assays. Histone methylation was determined by H3 H3 Modification Multiplex Assay Kit and Western blot. U-13C5-Glutamine metabolic labelling and analysis of glutamine metabolism via the TCA cycle was determined by liquid chromatography-mass spectrometry analysis. In clinical samples, SLC25A22 mRNA expression was determined by real time-PCR. The correlation with CpG Island Methylator Phenotype (CIMP) status and histone methylation mark (H3K36me2) was evaluated.

Results:
Using three pairs of isogenic cell lines harbouring wild-type and mutant KRAS (DKS8(WT) vs DLD1(mutant); HKE3(WT) vs HCT116(mutant); ICT(WT) vs ICT-KRAS(mutant)), we demonstrated that significant DNA and histone (H3K36me2) hypermethylation and histone H3 acetylation occurred in mutant cell lines. In addition, succinate restored cell growth in SLC25A22 knockout cell lines, suggesting that epigenetic dysregulation was closely associated with tumorigenicity. In human CRC, SLC25A22 expression was positively associated with CIMP (P < 0.0001) and histone H3K36me2 methylation status (P < 0.0001).

Contact E-mail Address: chichun.wong@cuhk.edu.hk

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Conclusion: SLC25A22 promotes the tumorigenicity of KRAS mutant CRC by dubbing and reduced DNA and histone hypermethylation, an effect mediated by increased production of TCA cycle intermediates succinate and fumarate, which inhibits DNA and histone demethylases. SLC25A22 is correlated with CIMP and histone hypermethylation in CRC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0447 FOLLISTATIN-LIKE PROTEIN 1 SUSTAINS COLON CANCER CELL GROWTH AND SURVIVAL

G. Bevivino1, V. De Simone1, R. Iizzo2, M. Di Giovangiulio1, S. Sedda1, E. Franchini3, A. Rizzo1, P. Rossi2, C. Stolfi2, G. Monteleone1, G. Bevivino1

1Systems Medicine, University of Rome "Tor Vergata", Rome/Italy
2Surgery, University of Rome "Tor Vergata", Rome/Italy

Contact E-mail Address: bevivino@med.uniroma2.it

Introduction: Follistatin-like protein 1 (FSTL1) is a secreted glycoprotein, widely expressed in human tissues, which plays key functions in the regulation of cell survival, proliferation, differentiation and migration. Moreover, deregulated expression of FSTL1 has been described in malignancies but its contribution to carcinogenesis remains controversial.

Aims & Methods: We here investigated the expression and role of FSTL1 in sporadic colorectal cancer (CRC). FSTL1 was evaluated in human CRC samples and cell lines by immunohistochemistry, Western blotting and real-time PCR. Cell proliferation and survival and cell cycle were evaluated in human CRC cell lines (i.e., HCT-116, DLD-1) treated with a specific FSTL1 antisense (AS) or control. Western blotting, immunohistochemistry and expression of proteins involved in cell cycle progression, poly ADP-ribose polymerase (PARP), caspase-9 and active caspase-3. Moreover, the effect of FSTL1 knockdown on cancer cell death was evaluated in cancer cells cultured in the presence or absence of the pan-caspase inhibitor Q-VD-OPh by flow-cytometry.

Results: FSTL1 was significantly increased in both epithelial and lamina propria compartments of human CRC specimens as compared to controls. In CRC cell lines, FSTL1 knockdown caused accumulation of cells in G1 phase of the cell cycle and cell proliferation. FSTL1-deficient CRC cells had reduced levels of proteins involved in late G1 cell cycle phase, such as phosphorylated retinoblastoma protein (pRb), E2F-1, cyclin E and cyclin-dependent kinase-2 (CDK2), with no modification of early G1 phase proteins (i.e. cyclin D1). Treatment of CRC cells with FSTL1 AS increased the percentages of apoptotic cells and this effect was associated with activation of PARP, caspase-9 and caspase-3. Pre-incubation of HCT-116 and DLD-1 cells with Q-VD-OPh abolished the FSTL1 AS-induced cell death and reduced PARP and caspase activation, thus indicating that FSTL1 silencing induces CRC cell death through a caspase-dependent mechanism.

Conclusion: Our data indicate that FSTL1 is over-expressed in CRC cells and suggest a role for this protein in promoting intestinal tumorigenesis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0448 TP53 MUTATION ACQUIRES HIGHER MALIGNANT POTENTIAL IN HUMAN COLON CANCER CELLS

S. Watanabe1, K. Tsuchiya1, T. Shirasaki1, S. Hibiya1, S. Ooshima1, T. Nakamura2, M. Ishioka2, H. Kamoto1, K. Ozaki3

1Gastroenterology, Tokyo Medical And Dental University, Tokyo/Japan
2Tokyo Medical And Dental University, Tokyo/Japan
3Tokyo Medical And Dental University Gastroenterology and Hepatology, Tokyo/ Japan

Contact E-mail Address: swatanabe.gast@tmd.ac.jp

Introduction: TP53 is commonly mutated in colorectal cancer, TP53 mutation is well known to occur in the late phase of colon carcinogenesis as adenoma-carcinoma sequence. Although numerous reports about clinical information of the patients with colon cancer have suggested that TP53 mutation might be related to various malignant potentials, the effect of TP53 mutation on malignant potential of colon cancer is still unknown. Notably, there is no report about a relationship between TP53 mutation and cancer stemness. We therefore aimed to assess the function of TP53 mutation in colon cancer cells, by using recently established lentiviral CRISPR Cas9 system.

Aims & Methods: Two types of TP53 mutation were generated in LS174T cells, which are derived from human colon adenocarcinoma with wild-type TP53 (WT-TP53), by using lentiviral CRISPR Cas9 system. The guide RNAs were designed to bind exon3 or exon 10 of TP53, respectively. TP53 mutation in LS174T was confirmed by direct sequencing. The expression of TP53 protein was assessed by immunohistochemistry. Loss of function of TP53 was assessed by Nutlin-resistance and the expression of TP53 target genes. Malignant potentials of TP53-mutated cells were assessed by MTS Assay and cell migration assay for cell proliferation, cancer stemness and cell migration, respectively. Chemo-resistance was also assessed by the treatment with 5-FU and L-OPH.

Results: We first selected LS174T cells with WT-TP53 because TP53 gene has already been mutated in almost colon cancer cell lines. We then successfully established 2 types of TP53 mutation in LS174T cells due to high effectiveness of gene-mutating by lentiviral system. Mutation in exon3 (TP53Ex3) and exon10 (TP53Ex10) of TP53 created the shorter form of TP53 (TP53Ex3: 55a.a., TP53Ex10: 377a.a., respectively) compared to WT-TP53 (393a.a.). Mutant TP53 (TP53Ex10) is strongly expressed in nuclei as often shown in colon cancer region, whereas both WT-TP53 and mutant TP53 (TP53Ex3) are not expressed in LS174T cells. In contrast, both TP53 mutants (TP53Ex3 and TP53Ex10) showed TP53-resistant and the down-regulation of TP53 target genes, suggesting that both mutants induced loss of function of TP53. We then assessed the effect of both TP53 mutants on various malignant potentials, resulting in accelerated cell growth, enhanced invasiveness and the resistance against 5-FU treatment compared to WT-TP53. Moreover, both mutants showed more frequent formation of 3D sphere and more expression of Lgr5 than WT-TP53, suggesting the promotion of cancer stemness by TP53 mutation even after being adenocarcinoma.

Conclusion: For the first time showed the direct effect of TP53 mutation on malignant potential in colon cancer cells. Loss of function of TP53 induced by not only TP53Ex3 but also TP53Ex10, might promote malignant potentials including cancer stemness at the late phase of carcinogenesis. In general, expression of TP53 in cancer regions is represented as TP53 mutation. However, negative staining of TP53 might also be careful for TP53 mutation to estimate malignant potential in colon cancer, since N-terminal mutation of TP53 in colon cancer has already been reported.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0449 PROTECTIVE EFFECT OF OPIOID RECEPTOR ACTIVATION IN THE DEVELOPMENT OF COLITIS-ASSOCIATED COLORECTAL CANCER IN MICE

A. Jarmuz1, D. Jaenick2, H. Zatorski1, R. Kordek3, W. M. Krajewski3, J. Fichna1, M. Zielinska1

1Department Of Biochemistry, Medical University of Lodz; Lodz; Poland
2Department Of Cytophysiology, Faculty Of Biology And Environmental Protection, University of Lodz; Lodz; Poland
3Department Of Pathology, Medical University of Lodz; Lodz; Poland

Contact E-mail Address: agat.jarmuz@gmail.com

Introduction: Endogenous opioid system is involved in the maintenance of the intestinal homeostasis. Recently, we proved that stimulation of opioid receptors using P-317 – a novel cyclic morphcine analog with mu- and kappa-opioid receptor affinity – results in down-regulation of acute phase factors (induced by dextran sodium sulfate [DSS]) in mice. Chronic inflammation is associated with increased risk of colitis-associated colorectal cancer. Stimulation of opioid receptors produces different effects on cancer progression depending on the cancer type and stage of disease.

Aims & Methods: The aim of our studies was to characterize the role of the endogenous opioid system in pathogenesis and treatment of colitis-associated colorectal cancer using P-317. Colitis-associated colorectal cancer was induced by a single intra-peritoneal injection of azoxymethane [AOM] (10 mg/kg) and subsequent addition of DSS (1.5% w/v) into drinking water (week 2, 6, 9). From week 3, P-317 was injected intraperitoneally at the dose of 0.1 mg/kg twice per week and the body weight and clinical score (rectal bleeding, stool consistency) were assessed. After 14 weeks, the necropsy and clinical score was assessed and the samples were collected and used for biochemical, molecular and histological studies.

Results: A significant difference in colorectal tumor development was observed between vehicle- and P-317-treated mice. P-317 significantly increased total number of colon tumors as well as colon thickness and width after 14 weeks of disease induction. Myeloperoxidase activity, a marker of neutrophil infiltration, was inhibited by P-317 injections. Hematoxylin and eosin staining confirmed anti-tumor activity of P-317 as indicated by histological score connecting the following features: muscle thickness, damage of the intestinal wall, immune cell infiltration, invasion depth, crypt hyperplasia and disruption. The expression of IL-1β and TNF-α at mRNA level was decreased in P-317-treated mice as compared to vehicle-treated group.

Conclusion: P-317 may become an important pharmacological tool to study the factors that determine the development of inflammatory bowel disease and to define the role of the endogenous opioid system in chronic colitis and colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0450 INCREASED HMBGI EXPRESSION CORRELATES WITH HIGHER EXPRESSION OF C-IAP2 AND PERK IN COLORECTAL CANCER

W. Zhang1, M. Xia1, F. An1, Q. Zhan1, W. Tian1

1Gastroenterology, Wuxi People’s Hospital Affiliated to Nanjing Medical University, Wuxi/China

Contact E-mail Address: wenjiazhang1221@163.com

Introduction: Colorectal cancer (CRC) is the third most common type of cancer in the world, and its incidence continues to rise. The probability of recurrence and subsequent death due to colorectal cancer is associated with its stage 1, 2. Because of its insidious onset, the diagnosis of CRC is usually delayed. However, serological markers can be a relatively easier and cheaper alternative to传统的 biomarker of colorectal cancer, HMBGI is one of the most recent ones. Several recent studies have shown that HMBGI expression in colorectal cancer is an independent predictor for overall survival of patients undergoing surgery 1, 2. 3. 4. Studies have shown that HMBGI is over-expressed in various types of cancers, including CRC, and those cases with higher expression of HMBGI are associated with lymphatic metastasis, distant metastasis and poor prognosis 1, 5. Several reports have demonstrated that HMBGI is
secreted by cancer cells may be involved in occurrence of tumor metastasis [6, 7]. In a study by Lo et al. 2010, the authors found that HMGB1 secreted by the primary tumors had an apoptotic effect on the Kupffer cells which promoted development of liver [6, 7]. Furthermore, some researchers found that increased levels of c-IAP2 and pERK, the downstream effector molecules of HMGB1 are found in tumor tissues [8, 9]. These adipokines may be useful for diagnosis and treatment of CRC. However, whether HMGB1 has any role in the development of CRC metastasis is not clear. In this study, we investigated the effects of HMGB1 on CRC, and the possible underlying mechanisms were examined. 

Aims & Methods: We investigated the relationship between high-mobility group B1 (HMGB1) and colorectal cancer (CRC) and the probable underlying pathogenic mechanism. In this prospective study, patients with CRC undergoing primary surgery and healthy subjects (control group) were included from July 2013 to December 2015. HMGB1 concentrations were determined using ELISA and HMGB1 mRNA expression was detected by RT-PCR method. Immunohistochemical analysis was performed to determine HMGB1, pERK and c-IAP2 protein expressions in the cancer tissues.

Results: 144 patients with CRC and 50 healthy subjects underwent HMGB1 testing. Resected specimens of 50 patients were used for HMGB1 mRNA and protein expression analysis. Serum HMGB1 levels in CRC patients were higher than that of the control group (8.42 vs. 1.79 μg/L, p < 0.05). Preoperative serum HMGB1 concentrations were significantly higher than the postoperative values (8.42 ± 5.67 vs 1.64 ± 1.89 μg/L, p < 0.05). Serum HMGB1 levels in CRC patients with distant metastasis were significantly higher (13.32 ± 6.12 vs 7.37 ± 5.17 μg/L, p < 0.05). HMGB1 mRNA and protein expression in CRC tissues was significantly higher than in the adjacent normal mucosa. HMGB1 protein expression positively correlated with the lymph node metastasis. There was positive correlation between HMGB1 and c-IAP2 (r = 0.457, P = 0.001), HMGB1 and pERK (r = 0.461, P < 0.05) as well as pERK and c-IAP2 (r = 0.399, P < 0.05).

Conclusion: HMGB1 expression in CRC correlates with distant and lymph nodal metastasis. It may inhibit apoptosis by inducing activation of pERK and cIAP2.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Results: MPV, PCT, NLR and PLR were significantly higher in Group III compared to Group I. However, only MPV was significantly higher in Group II compared to group I (8.6±1.1 vs 8.2±1, p < 0.001). The cut-off value of MPV in predicting CRC from patients with normal colonoscopic findings was 9.15 fL with a sensitivity and specificity of 80% and 91% respectively (r = 0.892).

Conclusion: Those features may be used for selecting patients with CRC who may benefit from radiomics analysis. The results suggest that radiomics features may have the potential to improve the accuracy of CRC prediction. However, further studies are needed to confirm these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0455 RADIOMICS AS A NOVEL TOOL FOR PRE-TREATMENT RESPONSE PREDICTION IN RECTAL CANCER


1Radiology, The Netherlands Cancer Institute, Amsterdam/Netherlands
2The Netherlands Cancer Institute, Amsterdam/Netherlands
3Radiology, Maastricht University Medical Centre, Maastricht/Netherlands
4Zuyderland Medical Centre, Heeren/Netherlands
5GROW School for Oncology and Medical Biology - Radimics, Maastricht University, Maastricht/Netherlands
6Dana Farber Institute, Boston/Netherlands

Contact E-mail Address: doena.lambregts@gmail.com

Introduction: In patients with localized rectal cancer who are candidates for advanced neoadjuvant chemoradiation therapy (nCRT), accurate estimation of the response of the tumour to nCRT is crucial for the clinical decision-making process. Radiomics, a relatively new field, has been gaining interest in recent years for its potential to provide additional clinical information from imaging data. This study aimed to evaluate the utility of radiomics features derived from pre-treatment MRI in predicting clinical response to nCRT in patients with rectal cancer.

Aims & Methods: A total of 32 patients with rectal cancer were included in the study. Pre-treatment MRI scans were obtained for all patients and were analyzed using a radiomics software platform. Radiomics features were extracted from the T2-weighted and diffusion-weighted MRI (DWI) images. These features were then used to train a machine learning model to predict the clinical response to nCRT.

Results: The radiomics model achieved an accuracy of 85% in predicting clinical response to nCRT. The most important features identified by the model included signal intensity, texture, and shape features. The model was able to differentiate patients with clinical complete response (cCR) from those with pathological complete response (pCR).

Conclusion: Radiomics features extracted from pre-treatment MRI may have the potential to improve the accuracy of clinical response prediction to nCRT. However, further validation studies are needed to confirm these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified in colorectal neoplasms according to their morphology and histology: flat type (LST-GH), granular nodular mixed type (LST-GM), non-granular flat-elevated type (LST-NGF), and non-granular pseudo-depressed type (LST-NGPD). Clinical features of each subtype of LSTs have not been fully evaluated.

Aims & Methods: The aim of this study was to clarify the clinical features of colorectal LSTs focusing on their subtypes. We reviewed clinical charts and surgical pathology files of 5352 endoscopically resected specimens during January 2007 and December 2016 at our institution. A total of 422 LSTs were detected. We analyzed the clinical features (mean age, female ratio, size, location, Incidence of concomitant carcinoma) according to their subtypes.

Results: Of these 422 lesions, a total of 151 (35.8%) were LST-GH, 34 (8.1%) LST-GM, 203 (47.9%) LST-NGF and 24 (5.7%) LST-NGPD. Metastasis in each type was detected in 45.4% (27 out of 59), 11.8% (4 out of 34), 66.7% (75 out of 112), and 4.2% (1 out of 24), respectively. Incidences of concomitant submucosal carcinomas in LST-GH, LST-GM, LST-NGF, and LST-NGPD were 0% (0 out of 151), 14.7% (5 out of 34), 1.9% (2 out of 209), and 25.0% (7 out of 28), respectively.

Conclusion: Each subtype of LSTs has distinct clinical features. LST-GM and LST-NGPD have higher malignant potentials than other subtypes. Especially LST-NGPD has the highest risk of invasive carcinoma regardless of its size. This study indicates we should carefully detect these lesions and choose appropriate treatment according to the subtypes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0459 RISK OF DETECTION OF GASTROINTESTINAL NEOPLASMS AND DEATH IN SYMPTOMATIC PATIENTS WITH A POSITIVE FECAL IMMUNOCHEMICAL TEST WITHOUT COLORECTAL CANCER
N. Pin, M.J. Iglesias, D. Remedios, P. Vega, J. Cubiella
Servicio De Aparato Digestivo, Complejo Hospitalario de Ourense, Ourense, Ourense/Spain
Contact E-mail Address: noel.pin.vieiro@sergas.es
Introduction: The fecal immunochromical test (FIT) has a high diagnostic accuracy for the detection of colorectal cancer (CRC) in symptomatic patients. However, we do not know the risk of other gastrointestinal neoplasms associated with a false positive test.
Aims & Methods: To calculate the risk of detection of gastrointestinal tract tumors (GITT) and death in symptomatic patients with a positive FIT determination and without a CRC in a complete colonoscopy with an adequate bowel preparation. We designed a prospective cohort study with follow-up. Patients from the COLONPREDICT study with complete colonoscopy without CRC were included. Two cohorts were defined: FIT positive and negative according to the ≥20ug hemoglobin/g feces threshold. We performed a descriptive analysis of the outcomes detected during follow-up and mortality. We estimated the differences in the risk of GITT detection and mortality between the two cohorts by logistic regression and proportional hazards after adjusting for age, sex, and significant colonic lesions (CSL) detection at baseline colonoscopy.
Results: We included 1061 patients without CRC and a complete baseline colonoscopy; 320 (30.2%) with a positive FIT and 741 with a negative FIT. The median follow-up was of 36.0±8.9 months with no difference between both groups (p=0.2). There were significant differences regarding age (67.7±12.7 years vs. 64.8±13.5 years, p=0.04) and sex (45.9% vs 52.0% females, p=0.04) between both cohorts. We detected a GITT in 14 (4.4%) patients with a positive FIT: 5 CRC, 6 gastric, 1 small intestinal lymphoma and one patient with a CRC and a small intestine adenocarcinoma; and in 12 (1.6%) with a negative FIT: 4 CRC, 6 gastric, 2 small intestine adenocarcinoma, one esophageal, and one patient with a gastric and a CRC. Patients with a positive FIT had a non-significant increase in the risk of GITT detection (OR 2.1, 95% CI 0.9-4.8) after adjusting for age, sex and SCL. The overall risk of death in both groups was 8.8% and 6.7%, respectively, with no significant differences between both groups in the survival analysis (HR 1.3, 95% CI 0.8-2.1). However, the risk of death due to a GITT was 3.1% (10 deaths) in the positive FIT group and 0.8% (6 deaths) in the negative FIT group, with a significant difference after adjusting for age, sex and SCL (HR 3.2, 95% CI 1.2-8.9).
Conclusion: Symptomatic patients with a positive FIT and complete colonoscopy without CRC are at increased risk of death due to GITT regardless of age, sex or the presence of SCL.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0460 LONG-TERM OUTCOMES OF TRANSLATIONAL COLORECTAL TUBE PLACEMENT FOR DISTAL STAGE II/III COLORECTAL CANCER WITH ACUTE COLORECTAL OBSTRUCTION
T. Yamada1, Y. Okuda, R. Yamaguchi2, E. Sukamoto1, Y. Hiraiz, T. Shimura1
1Gastroenterology, Japanese Red Cross Nagoya Daini Hospital, Nagoya, Japan
2Kasugai Municipal Hospital, Kasugai, Japan
3Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan
Contact E-mail Address: yamadatomomori@mac.com
Introduction: A stent is a surgically placed intervention for colorectal cancer (CRC) with acute colorectal obstruction (ACO). Transanal colorectal tube (TCT) placement is an alternative endoscopic treatment for ACO; however, the oncological outcomes of TCT placement for the curative treatment of CRC remain unknown.
Aims & Methods: Data were retrospectively reviewed from patients with distal stage II/III CRC who underwent surgery between January 2007 and December 2011 at two Japanese affiliate hospitals with an interchange of endoscopists and surgeons. We conducted endoscopic TCT placement. This study demonstrated the high technical and clinical success rate of double-wire woven uncovered self-expandable metallic stent placement for malignant colorectal obstruction. Clinicians should perform this procedure carefully in patients with acute obstruction. We established the Colonic Stent Procedure Research Group to provide instructions on how to safely perform stent placement, and then, we conducted this prospective, single-arm, observational, multicenter clinical trial between October 2013 and May 2014 in Japan. Thirty-two facilities participated in this study. A double-wire woven uncovered stent was placed by using a standard through-the-scope colonoscopic technique in each patient. Stent deployment time was defined as the time from reaching a lesion with a colonoscope to finishing stenting. Technically difficult cases of stenting were defined as independent factors affecting the technical difficulty of stenting remain unclear.
Results: A total of 205 consecutive patients were enrolled in this study. Nine patients including 3 patients with technical failure of stenting, 5 patients with non-stenting and 1 patient with stenting for benign lesion were excluded. The remaining all 196 patients were succeeded in stenting. Of these, 100 men (51%), the median age was 72 years old (interquartile range (IQR), 62-82 years old). One hundred eleven patients (57%) underwent stentting as a bridge to surgery, and 85 (43%) underwent stentting for palliation. The technical and clinical success rates were 98.5% and 97.0%, respectively. None of the patients experienced colorectal perforation. The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18-42 minutes). The median deployment time was 21 minutes (IQR, 11-31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p=0.02), placement of >1 stent (odds ratio, 4.80; 95% CI, 1.10–21.1; p=0.04).
Disclosure of Interest: All authors have declared no conflicts of interest.

All other authors have declared no conflicts of interest.

Reference

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: To calculate the risk of detection of gastrointestinal tract tumors (GITT) and death in symptomatic patients with a positive FIT determination and without a CRC in a complete colonoscopy with an adequate bowel preparation. We designed a prospective cohort study with follow-up. Patients from the COLONPREDICT study with complete colonoscopy without CRC were included. Two cohorts were defined: FIT positive and negative according to the ≥20ug hemoglobin/g feces threshold. We performed a descriptive analysis of the outcomes detected during follow-up and mortality. We estimated the differences in the risk of GITT detection and mortality between the two cohorts by logistic regression and proportional hazards after adjusting for age, sex, and significant colonic lesions (CSL) detection at baseline colonoscopy.
Results: We included 1061 patients without CRC and a complete baseline colonoscopy; 320 (30.2%) with a positive FIT and 741 with a negative FIT. The median follow-up was of 36.0±8.9 months with no difference between both groups (p=0.2). There were significant differences regarding age (67.7±12.7 years vs. 64.8±13.5 years, p=0.04) and sex (45.9% vs 52.0% females, p=0.04) between both cohorts. We detected a GITT in 14 (4.4%) patients with a positive FIT: 5 CRC, 6 gastric, 1 small intestinal lymphoma and one patient with a CRC and a small intestine adenocarcinoma; and in 12 (1.6%) with a negative FIT: 4 CRC, 6 gastric, 2 small intestine adenocarcinoma, one esophageal, and one patient with a gastric and a CRC. Patients with a positive FIT had a non-significant increase in the risk of GITT detection (OR 2.1, 95% CI 0.9-4.8) after adjusting for age, sex and SCL. The overall risk of death in both groups was 8.8% and 6.7%, respectively, with no significant differences between both groups in the survival analysis (HR 1.3, 95% CI 0.8-2.1). However, the risk of death due to a GITT was 3.1% (10 deaths) in the positive FIT group and 0.8% (6 deaths) in the negative FIT group, with a significant difference after adjusting for age, sex and SCL (HR 3.2, 95% CI 1.2-8.9).
Conclusion: Symptomatic patients with a positive FIT and complete colonoscopy without CRC are at increased risk of death due to GITT regardless of age, sex or the presence of SCL.
Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: The aim of this study was to clarify the factors associated with the technical difficulty of stenting for malignant colorectal obstruction. We established the Colonic Stent Procedure Research Group to provide instructions on how to safely perform stent placement, and then, we conducted this prospective, single-arm, observational, multicenter clinical trial between October 2013 and May 2014 in Japan. Thirty-two facilities participated in this study. A double-wire woven uncovered stent was placed by using a standard through-the-scope colonoscopic technique in each patient. Stent deployment time was defined as the time from reaching a lesion with a colonoscope to finishing stenting. Technically difficult cases of stenting were defined as independent factors affecting the technical difficulty of stenting remain unclear.
Results: A total of 205 consecutive patients were enrolled in this study. Nine patients including 3 patients with technical failure of stenting, 5 patients with non-stenting and 1 patient with stenting for benign lesion were excluded. The remaining all 196 patients were succeeded in stenting. Of these, 100 men (51%), the median age was 72 years old (interquartile range (IQR), 62-82 years old). One hundred eleven patients (57%) underwent stentting as a bridge to surgery, and 85 (43%) underwent stentting for palliation. The technical and clinical success rates were 98.5% and 97.0%, respectively. None of the patients experienced colorectal perforation. The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18-42 minutes). The median deployment time was 21 minutes (IQR, 11-31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p=0.02), placement of >1 stent (odds ratio, 4.80; 95% CI, 1.10–21.1; p=0.04).
Disclosure of Interest: All authors have declared no conflicts of interest.
PROGNOSIS AND CLINICOPATHOLOGICAL FACTORS OF PATIENTS WHO SELECTED THE FOLLOW-UP OPTION AMONG HIGH-RISK T1 COLORECTAL CANCER PATIENTS AFTER ENDOSCOPIC RESECTION BASED ON JAPANESE CLINICAL PRACTICE GUIDELINE: A RETROSPECTIVE OBSERVATIONAL STUDY

Y. Nishikawa1, T. Horimatsu2, S. Minamiguchi3, H. Seno4, Y. Sakai5, T. Nakayama1

1. Health Informatics, School of Public Health, Kyoto University, Kyoto, Japan
2. Therapeutic Oncology, Kyoto University, Kyoto, Japan
3. Diagnostic Pathology, Kyoto University, Kyoto, Japan
4. Gastroenterology and Hepatology, Kyoto University, Kyoto, Japan
5. Surgery, Kyoto University, Kyoto, Japan

Contact E-mail Address: yoshitakanishikawa@gmail.com

Introduction: Colorectal cancer is the third most common cancer in the world and the fourth leading cause of cancer death1. Treatment strategy for colorectal cancer is selected considering clinical stages. T1 colorectal cancer (T1CRC) can be treated with endoscopic resection. If patients have pathological risk factors such as deep submucosal invasion, budding, por/muc pathological features and lymphovascular invasion, they are considered to be at high risk of lymph node metastasis based on the indication of Japanese Society for Cancer of the Colon and Rectum guideline2. In such cases, the selection of subsequent option is important and has been frequently decided by clinicians’ customs and preferences. However, it is not clear whether these risk factors adequately predict patients’ long-term clinical practice.

Aims & Methods: This research aims at revealing the prognosis and clinicopathological features of pathologically high-risk T1CRC patients (the high-risk group) with and without additional surgery; followed up by computed tomography, ultrasound, endoscopy, and tumor marker (CEA: carcinoembryonic antigen). To evaluate the difference of overall survival (OS), cancer specific survival (CSS) and recurrent-free survival (RFS) between the patient performed additional colectomy with lymph node dissection (AS) and the patient followed up without additional surgery (FU). To reveal what clinicopathological factors are considered in the selection of subsequent option, whether AS or FU, in the high-risk group. We retrieved the clinical data of 162 patients who had diagnosed and treated as T1 colorectal cancer at Kyoto University Hospital (Kyoto, Japan) between February 2005 and February 2015. Treatment strategy after diagnosis is divided as “high-risk” and clinicopathological features, presence or absence of recurrence and the final stage as of February 2017. We used the Kaplan-Meier product limit method and the Log-rank test to compare OS, CSS, and RFS between AS and FU groups. In clinical setting, based on the guideline indication, the clinician offered subsequent options and described their risks and benefits, and the patient expresses his or her preferences and values. Factors considered through selecting treatment strategy were extracted from informed consent and provider’s note of electronic medical record.

Results: Among 162 T1CRC patients, 78 cases were treated with endoscopic resection for the first time. Of them, 46 patients had at least one pathological risk factor (high-risk patients). Among 46 high-risk patients, 22 patients were carefully followed up (FU), 20 patients were performed additional surgery with lymph node dissection (AS). Four patients treated with additional radiation therapy were excluded. Median survival time was 39 (FU) and 62 (AS), respectively. The rates of LN metastasis in Groups A, B, and C were 10% (5/49), 20% (9/45), and 4% (1/21), respectively. There were no recurrences among the 62 e-curable patients. On the other hand, five recurrences (5%) were found in non-e-curable patients, and they were all in Group A. They consisted of local recurrence (one patient who also had lung metastasis), LN metastasis (two patients), lung metastasis (three patients), and liver metastasis (one patient who also had LN metastasis). There were no significant differences in DSS between Group A and Group B + C (LST-NG). However, OS was 93% in Group A, which was significantly lower than that (96%) in Group B + C (p < 0.05). DFS in Group A was 90%, which was significantly lower than that (100%) in Group B + C (p < 0.05). The prognosis of patients with non-e-curable disease after ER alone showed no significant differences in OS, DFS, and DSS between Group A and Group B + C. The prognosis of patients with non-e-curable disease after surgical resection showed no significant differences in DFS or DSS. However, OS in Group A was 94%, which was significantly lower than that (97%) in Group B + C (p < 0.05).

Conclusion: Long-term outcomes supported the JSCCR criteria for e-curable patients after ER for T1 LSTs. All recurrences occurred in patients with T1 LST-G-H carcinoma. OS and DFS in the LST-G-M group were significantly shorter than in the LST-NG group.

Disclosure of Interest: All authors have declared no conflicts of interest.

REFERENCES
Results: In this study we evaluated and tested a controlled-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. Animal models were developed, laser-cut nitinol stents were coated with a polymer matrix allowing slow release of paclitaxel. Native Yucatan swine were assigned to one of three stent groups: bare control (n = 3, no polymer), standard dose paclitaxel (n = 6, 149.4 µg paclitaxel) and challenge dose (n = 3, 538.0 µg paclitaxel). Two stents were endoscopically implanted in each swine from its assigned group. One in the intrahepatic/hilar region and a second in the common bile duct placed proximal to the papilla. Stents were assessed for migration via digital radiographs for the first 2 weeks and then monthly via endoscopy using SpyGlass®. DS cholangiography and cholangiography with a targeted 6 month study endpoint. At this mid-study follow-up, paclitaxel-eluting stents appear to be safe for use in naïve tissue and do not negatively impact function of the biliary system, even at challenge condition doses. Although the cause of bile duct dilation observed in all stent groups has not been conclusively identified, we hypothesize that the bile duct may be distal stent impaction and intermittent (clinically insignificant) obstruction of the papilla and/or stent, resulting in retained mucus and bile. Bile duct dilation, in turn, has reduced the opportunity for bile duct tissue overgrowth in all stent groups, which was expected to occur in the bare metal stent group by day 60 post-implantation. Although some animals displayed minimal tissue hyperplasia at the proximal end of the bile duct, no clinically significant obstruction of the papilla and/or stent was noted. In all animals, the bile duct diameter measured via digital radiographic analysis for the first 2 weeks and then monthly post-implantation showed no significant change.

Conclusion: At this mid-study follow-up, paclitaxel-eluting stents appear to be safe for use in naïve tissue and do not negatively impact function of the biliary system, even at challenge condition doses. Although the cause of bile duct dilation observed in all stent groups has not been conclusively identified, we hypothesize that the bile duct may be distal stent impaction and intermittent (clinically insignificant) obstruction of the papilla and/or stent, resulting in retained mucus and bile. Bile duct dilation, in turn, has reduced the opportunity for bile duct tissue overgrowth in all stent groups, which was expected to occur in the bare metal stent group by day 60 post-implantation. Although some animals displayed minimal tissue hyperplasia at the proximal end of the bile duct, no clinically significant obstruction of the papilla and/or stent was noted. In all animals, the bile duct diameter measured via digital radiographic analysis for the first 2 weeks and then monthly post-implantation showed no significant change.

Disclosure of Interest: J.T. Favreau: John Favreau is an employee of Boston Scientific.
G. Haber: Gregory Haber is a consultant of Boston Scientific
S. Alkaade: Samer Alkaade is a consultant for Boston Scientific
M. Arain: Mustafa Arain is a consultant for Boston Scientific
T.H. Baron: Todd Baron is a consultant for Boston Scientific
S. Branch: Stan Branch is a consultant for Boston Scientific
P.V. Dragovan: Peter Dragovan is a consultant for Boston Scientific
J.H. Lee: Jung-Hoon Lee is a consultant for Boston Scientific
D.K. Mullally: Daniel Mullally is a consultant for Boston Scientific
R.T. Petersen: Bret Petersen is a consultant for Boston Scientific
R.J. Shah: Raj Shah is a consultant of Boston Scientific
S. Sherman: Stuart Sherman is an employee of Boston Scientific
D. Amos: Devon Amos is an employee of Boston Scientific
R. Bennett: Ryan Bennett is an employee of Boston Scientific
J. Hemerick: Jim Hemerick is an employee of Boston Scientific
S. Dassner: Sarah Dassner is an employee of Boston Scientific
A. Foss: Aaron Foss is an employee of Boston Scientific
D. Ross: Dan Ross is an employee of Boston Scientific
A. Pearlman: Allison Pearlman is an employee of Boston Scientific
J. Saunders: Jennifer Saunders is an employee of Boston Scientific
M. Rivera-Bermudez: Moises Rivera-Bermudez is an employee of Boston Scientific
C.O. Clerc: Claude Clerc is an employee and consultant for Boston Scientific
L. Swanson: James Swanson is an employee of Boston Scientific
J. Scatt: James Scatt is an employee of Boston Scientific.

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Disclosure of Interest: Contact E-mail Address: gnpaspat@gmail.com
Introduction: Meta-analyses and guidelines recommend that deep submucosal invasion (>1 mm) in malignant colonic polyps is an important risk factor for residual malignant disease. However, the existing data are based on small retrospective studies with marked heterogeneity.

Aims & Methods: The aim of this study was to test the correlation between the submucosal invasion depth and the rate of residual malignant disease in complete endoscopic mucosal resection (EMR) of malignant colonic sessile polyps. The secondary outcomes include risk factors such as: lymphovascular invasion, tumor differentiation, resection margin status and the presence of tumor budding. A retrospective review of the endoscopy charts for the period 2000-2016 was conducted. All patients enrolled exhibited a malignant colonic sessile polyp which was endoscopically completely resected. Histological findings of the polyps were also recorded. Thorough computed or magnetic scanning was performed in all patients before deciding on further management. All patients were advised for the option of surgical treatment or endoscopic follow-up.

Results: 51 patients with confirmed adenocarcinoma in sessile colonic polyps undergoing endoscopic mucosal resection (EMR) were retrospectively included in this study. A total of 33 (64.7%) patients underwent subsequent surgery after EMR, and 18 (35.3%) chose endoscopic follow up. The histological characteristics, site of the polyp, IQR (range), number of dilated ducts between days 30 and 60, we expect increased rate of stent occlusion.

Table 1: Histological characteristics of the patients

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total (N=51)</th>
<th>EMR only, (n=18), n (%)</th>
<th>EMR + Surgery, (n=33), n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submucosal invasion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤1 mm</td>
<td>44 (86.3)</td>
<td>42 (100)</td>
<td>2 (11.1)</td>
</tr>
<tr>
<td>&gt;1 mm</td>
<td>7 (13.7)</td>
<td>6 (27.3)</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td>Resection margin status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(mm) IQR (range)</td>
<td>1 (0–7)</td>
<td>1 (0–4)</td>
<td>0 (1.5–5.7)</td>
</tr>
<tr>
<td>Lymphovascular invasion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 (13.7)</td>
<td>6 (33.3)</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td>Tumor differentiation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>well-differentiated</td>
<td>28 (54.9)</td>
<td>18 (66.7)</td>
<td>10 (30.3)</td>
</tr>
<tr>
<td>moderate-differentiated</td>
<td>9 (17.6)</td>
<td>6 (21.4)</td>
<td>3 (9.1)</td>
</tr>
<tr>
<td>poor-differentiated</td>
<td>16 (31.7)</td>
<td>4 (44.4)</td>
<td>12 (36.4)</td>
</tr>
<tr>
<td>Tumor budding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 (17.6)</td>
<td>8 (88.9)</td>
<td>1 (11.1)</td>
</tr>
</tbody>
</table>

Conclusion: Our data suggest that even in cases with submucosal invasion >1 mm and the presence of other high-risk features (lymphovascular invasion, tumour budding), complete EMR in malignant colonic sessile polyps supported by the histological findings predicts for a good clinical outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this prospective study, we evaluated the overall survival (OS) of colorectal adenocarcinoma (CRC) in patients associated with an overall survival in colorectal cancer group based on CD-DST. Moreover, we evaluated additional effects of EGFR (Cetuximab; Cmab, Panitumumab; Pmab) to FOLFOX/FOLFIRI using CD-DST. Between Mar. 2008 and Aug. 2016, we obtained tumor specimen from 131 CRC patients without preoperative chemotherapy. Informed consent for measurement of individual chemosensitivity was obtained from all patients in writing. Approval for the present study was obtained from the Tobu Chiki Hospital Institutional Review Board (No: 02.0329). The growth inhibition was determined by CD-DST. The regimens were followed FOLFOX, FOLFIRI, Cmab, Pmab, and FOLFOX/FOLFIRI + Cmab. The incubation conditions were as follow: FOLFOX; 5-FU and l-OHP (6.0 and 3.0 μg/ml, respectively) for 24 h. FOLFIRI; 5-FU and SN-38 (6.0 and 0.2 μg/ml, respectively) for 24 h. Cmab; Cmab 250 μg/ml for 144 h. Pmab; Pmab 200 μg/ml for 144 h. FOLFOX+Cmab; Cmab 250 μg/ml for 120 h after FOLFOX/FOLFIRI incubation process. The cumulative distribution of IR values under each condition was evaluated on the basis that the clinical response to chemotherapy is classified into four grades (approximately 50%). The IR between the group treated with appropriate first-line chemotherapy and the group treated with inappropriate first-line chemotherapy were evaluated Kaplan-Meier method. Additional effects of Cmab to FOLFOX/FOLFIRI were also evaluated.

Results: There was strongly relationship between the IR% of the FOLFOX and FOLFIRI regimen (R ² = 0.7415). The median of the IR% with the FOLFOX and FOLFIRI regimen were 58.6 and 69.1, respectively, FOLFOX responder, FOLFOX responder, dual responder, and poor responder were 8, 10, 53, and 60, respectively. There were 42 unreactable CRC patients with chemotherapy. The median survival time of appropriate first-line chemotherapy group (n: 28) and inappropriate first-line chemotherapy group (n: 14) were 1126 and 306 days, respectively. There was positive correlation between Cmab and that of Pmab (R ² = 0.468). Additional rates (%) of Cmab to FOLFOX between poor responder and other responder were 19.8 and 5.4, respectively (P = 0.020). Additional rates of Cmab to FOLFIRI between poor responder and other responder were 16.5 and 1.29, respectively (P = 0.005). There was significantly more additional effect of Cmab to FOLFOX/FOLFIRI in poor responder than in other responders.

Conclusion: Administration of the recommended first-line regimen using CD-DST in patient is important for improvement in the further prognosis. Moreover, especially in poor responder, Cmab should be administrated to FOLFOX/FOLFIRI regimen.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0467 WAIT-AND-SEE STRATEGY IN LOW RECTAL CANCER


Introduction: The standard treatment for locally advanced rectal adenocarcinoma (ADC) is to conduct surgical resection after neoadjuvant chemoradiotherapy (CRT). In the wait-and-see (W&S) strategy, those who achieve a clinical complete response (cCR) after CRT undergo regular clinical, radiologic and endoscopic surveillance, with surgery being reserved for tumor "regrowth".

Aims & Methods: To evaluate the impact of a W&S strategy for low rectal ADC, regarding overall and disease-free survival. Single-center prospective observational study. All patients with low rectal (up to 6 cm from the anal verge) colorectal invasive cancer were observed during a long-term period in our hospital. They were divided into group A, B, and C as follows; 445 in group A (mean age 64.7 yr, M:F = 2.37:1) with low-grade adenoma colonoscopically resected at baseline, 245 in group B (66.1 yr, 2.31:1) with high-grade adenoma or intramucosal cancer colonoscopically resected at baseline, 358 in group C (65.1 yr, 1.54:1) with invasive cancer resected at baseline during follow-up colonoscopies detected metachronous neoplasms were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer). The cumulative incidences of metachronous colorectal neoplasms were compared with each other using Logrank test.

Results: Median follow-up periods and frequencies of colonoscopy were 64.3 months and 3.7 times in group A, 52.0 months and 3.5 times in group B, and 74.6 months and 3.9 times in group C, respectively. The cumulative incidences of metachronous non-index lesion were 24.5% (109 patients with 299 low-grade adenomas) in group A, 26.1% (64 with 184) in group B, and 19.3% (75 with 229) in group C, respectively. The prevalence of metachronous non-index lesion was lower in group C compared to that in group A (P = 0.07), and group B compared to that in group A (P = 0.02). The cumulative incidence of metachronous invasive cancer were 0.9% (4 patients with 4 invasive cancers) in group A, 1.2% (3 with 3) in group B, and 3.6% (14 with 14) in group C, disclosing highest prevalence in group C (P < 0.05). Logrank test revealed that the cumulative incidence of non-index lesion was significantly higher in group C, and statistical significance were observed between group A and C (P < 0.01), and between group B and C (P < 0.001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group C, but no significant differences were observed compared to those in group A and B.

Conclusion: Significant higher prevalence of metachronous index lesion including invasive cancer and, in contrast, significantly lower prevalence of metachronous non-index lesion were observed in patients after resection of colorectal invasive cancer compared to those after endoscopic resections of colorectal adenoma and intramucosal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: joao.epinto@hotmail.com

P0469 LONG-TERM COLONOSCOPIC SURVEILLANCE BETWEEN PATIENTS WITH UNRESECTED DIMINUTIVE POLYPS AND THOSE WITH COLORECTAL ADENOMAS > 5MM IN SIZE RESECTED AT INITIAL COLONOSCOPY

S. Kimura1, M. Tanaka2

Introduction: A long-term risk of colorectal advanced neoplasia among patients having diminutive polyps at initial colonoscopy has been unknown. The present study aimed to compare the risk of metachronous advanced neoplasia during follow-up between patients with untreated diminutive colorectal polyps and those with small or large adenoma resected at initial colonoscopy.

Aims & Methods: A total of 1078 patients were colonoscopically followed-up during a long-term period in our hospital. They were divided into group A, B, and C as follows; 519 in group A (mean age 64.7 yr, M:F = 411:170) with colorectal adenoma more than 5 mm in size resected at baseline, 495 in group B (65.2 ± 9.6 yr, 328:167) with diminutive polyps left untreated at baseline, and 519 in group C (62.5 ± 10.7 yr, 255:264) with no polyps at baseline. During follow-up colonoscopies detected metachronous neoplasms more than 5 mm in diameter were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer). The cumulative incidences of metachronous colorectal neoplasms were compared with each other using Logrank test.

Results: Median follow-up periods and frequencies of colonoscopy were 64.3 months and 3.7 times in group A, 52.0 months and 3.5 times in group B, and 74.6 months and 3.9 times in group C, respectively. The cumulative incidences of metachronous non-index lesion were 24.5% (109 patients with 299 low-grade adenomas) in group A, 26.1% (64 with 184) in group B, and 19.3% (75 with 229) in group C, respectively. The prevalence of metachronous non-index lesion was lower in group C compared to that in group A (P = 0.07), and group B compared to that in group A (P = 0.02). The cumulative incidence of metachronous invasive cancer were 0.9% (4 patients with 4 invasive cancers) in group A, 1.2% (3 with 3) in group B, and 3.6% (14 with 14) in group C, disclosing highest prevalence in group C (P < 0.05). Logrank test revealed that the cumulative incidence of non-index lesion was significantly higher in group C, and statistical significance were observed between group A and C (P < 0.01), and between group B and C (P < 0.001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group C, but no significant differences were observed compared to those in group A and B.

Conclusion: Significant higher prevalence of metachronous index lesion including invasive cancer and, in contrast, significantly lower prevalence of metachronous non-index lesion were observed in patients after resection of colorectal invasive cancer compared to those after endoscopic resections of colorectal adenoma and intramucosal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: saint4@od4mail.com

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.
incidences of metachronous colorectal neoplasms were compared with each other using Log rank test.

Results: Median follow-up periods and frequencies of colonoscopy were 61.9 months and 3.6 times in group A, 61.6 months and 3.4 times in group B, and 72.3 months and 2.7 times in group C, respectively. The cumulative incidences of metachronous adenomas were 24.1% (132/550 patients with 375 low-grade adenomas) in group A, 14.7% (73 with 168) in group B, and 6.6% (34 with 56) in group C, respectively. The prevalence of metachronous non-index lesion was highest in group A followed by those in group B and C, with significant difference observed between group A and B (p < 0.0005), and B and C (p < 0.05). The cumulative incidences of metachronous invasive cancer were 1.0% (6 patients with 6 invasive cancers) in group A, 1.4% (7 with 7) in group B, and 0.2% (1 with 1) in group C with no significant difference. Logrank test revealed that the cumulative incidence of non-index lesion was highest in group A, and statistical significances were observed between group A and B (p < 0.0001), and between group B and C (p < 0.0001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group A, and statistical significances were observed between group A and B (p < 0.05), and between group B and C (p < 0.005).

Conclusion: The results of a longer colonoscopic follow-up disclosed a significantly higher prevalence of metachronous advanced neoplasms in patients with adenoma >5mm in size resected at baseline compared to those with diminutive polyps left untreated at baseline. Persons with no polyps at baseline and family history (presence of more than 2 FDRs with CRC: 2, others: 0), BMI (23–30 kg/m2: 2, >30: 1), smoking status (never: 0, <10: 0.26) and in 1,000 bootstrapped replicates

Aim & Methods: The aim of this study was primarily to develop and validate a new scoring model for predicting ACN in asymptomatic screening populations that is more useful than the APCS score. We externally validated the APCS score in a Japanese screening population and compared its discriminatory capability with that of our new scoring model. Data were reviewed from 5218 consecutive asymptomatic screened individuals who underwent colonoscopy for their first time at the Cancer Screening Center, National Cancer Center Hospital, Tokyo between February 2004 and March 2013. Multivariate logistic regression was used to investigate the associations between clinical variables and the presence of ACN in the subjects, and then a new scoring model was developed based on these associations. Scores were weighted according to the beta coefficient obtained from the logistic regression model. Thereafter, the discriminatory capability of the new model was assessed using the c-statistics in the development set. Performance of the new model was internally validated using 1000 replicates. The discriminatory capability of the modified APCS score in the 5218 subjects was also assessed using the c-statistics. The value obtained was compared to the new scoring model using the DeLong test. A 3-point scoring model to predict ACN was developed by using five identified independent risk factors for ACN as scoring items. These included sex (male: 1 point, female: 0), age (40–49 years: 0, 50–59: 2, 60–69: 3, >70: 3.5), CRC family history (presence of ≥2 FDRs with CRC: 2; others: 0), BMI (<22.5: 0, ≥22.5: 1), smoking status (never: 0, <10: 0.5; >10: 1). Presence of ACN with CRC was not detected as an independent risk factor for ACN and was not assigned any score. Using the scoring model, the proportion of subjects with ACN increased with the order of scores. The proportions were 1.6% (54/3272), 5.3% (127/2419) and 10.2% (64/627) in the groups with scores of 1, 2 and 3, respectively. The c-statistic of the score in the development set was 0.70 (95% CI, 0.67–0.73) and this was the same in the internal validation set. The value of the modified APCS score was 0.68 (95% CI, 0.65–0.71). The c-statistics of the new score were significantly higher than those of the modified APCS score, both in the 5, 218 subjects (P = 0.03) and in 1,000 bootstrapped replicates (P = 0.03).

Conclusion: An 8-point scoring model to predict ACN in asymptomatic screening population that might have a higher discriminatory capability than the modified APCS score was developed and internally validated in this study. Our simple scoring model could stratify the screened population into low-, moderate-, and high-risk groups. Of the detected ACN, a substantial number were proximal or flat; therefore, primary screening with total colonoscopy may be advisable for high-risk individuals.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
predict that somatisation has deleterious consequences for GI conditions - possibly because it encourages the use of psychotherapeutic (7).  

**Aims & Methods:** In Study 1, 147 undergraduate students completed measures of neuroticism, 14 coping styles (including avoidant styles such as denial and disengagement), somatisation and GI symptom burden. In Study 2, where participants were undergraduates and hospital outpatients (pooled N = 250), the variables investigated in Study 1 were measured alongside hypochondriasis, which was included to measure the aspect of somatisation that involves worry independently of any actual physical symptoms. Statistical analysis was based on path modeling. It involved fitting a model to test a priori hypothesised indirect relationships between neuroticism and GI symptom severity via the selected coping styles and somatisation. Direct effects were also estimated, meaning that the path analysis provided information regarding the significance of any indirect effects once a range of direct effects were accounted for. Only six coping styles found to correlate with both neuroticism and GI symptom severity were included (see Results table). Coping styles were assumed to covary, and the model in Study 2 assumed a covariance relationship between somatisation and hypochondriasis.

<table>
<thead>
<tr>
<th>Study 1 direct effects on row variables</th>
<th>Study 1 indirect effects on symptom burden via row variables</th>
<th>Study 2 direct effects on row variables</th>
<th>Study 2 indirect effects on symptom burden via row variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-distraction</td>
<td>.33(0.07)**</td>
<td>.22(0.07)**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Denial</td>
<td>.24(0.07)**</td>
<td>.28(0.05)**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Venting</td>
<td>.36(0.07)**</td>
<td>.32(0.06)**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Substance-use</td>
<td>.40(0.07)**</td>
<td>.19(0.06)**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Disengagement</td>
<td>.52(0.06)**</td>
<td>.55(0.06)**</td>
<td>.66(0.02)**</td>
</tr>
<tr>
<td>Self-blame</td>
<td>.33(0.06)**</td>
<td>.62(0.04)**</td>
<td><strong>.17(0.04)</strong></td>
</tr>
<tr>
<td>Somatisation</td>
<td>.42(0.09)**</td>
<td>.16(0.05)**</td>
<td>n.s.</td>
</tr>
<tr>
<td>Hypochondriasis</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td><strong>.03(0.03)</strong></td>
</tr>
<tr>
<td>Symptom burden</td>
<td>n.s.</td>
<td>Not applicable</td>
<td>n.s.</td>
</tr>
<tr>
<td>Substance-use and somatisation</td>
<td>Not applicable</td>
<td><strong>.03(0.02)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Disengagement and somatisation</td>
<td>Not applicable</td>
<td><strong>.04(0.02)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Self-blame and somatisation</td>
<td>Not applicable</td>
<td><strong>.05(0.02)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Denial and somatisation</td>
<td>Not applicable</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Denial and hypochondriasis</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Results:** Significant standardised path model coefficients involving neuroticism across the two studies. In Study 1, neuroticism exerted indirect effects on symptom burden through substance-use-based coping and somatisation, as well as through disengagement-based coping and somatisation. In Study 2, neuroticism affected GI symptom burden through denial-based coping and somatisation, as well as through denial-based coping and hypochondriasis. An indirect effect of neuroticism through self-blame and somatisation, with the two intermediary variables relating negatively to each other, was observed in Study 1. (Note: *p < .001, **p < .01, *p < .05. n.s. denotes non-significant coefficients).  

**Conclusion:** Somatisation and hypochondriasis were found to be intermediaries in GI symptoms and their association with neuroticism and GI symptom severity. The expression of CRF and CRFR2 on HT29 cell surfaces was significantly increased by immunofluorescence microscopy (7).  

**Aims & Methods:** The expression of CRF1 and CRFR2 on HT29 cell surfaces was determined by immunofluorescence microscopy (7).  

**Results:** CRF treatment increased FITC-labeled Dextran permeability, caused opening of tight junctions, induced increased fluorescence intensity of CK8 and decreased intensity of ZO-1, Claudin-1, and occludin, and blocked with a power lab system (AD Instruments International). The diagnosis of D-IBS is based on symptom assessment and the Rome III Diagnostic Criteria. According to an epidemiological study, D-IBS mainly affects young adults of 20–40 years old, and the quality of life in IBS patients is seriously affected. The pathogenesis of D-IBS has not been completely elucidated. Consequently, the usual treatment of the disease in Western medicine involves symptomatic treatment, which is unsatisfactory for patients while simultaneously increasing the use of health-care resources. Because traditional Chinese medicine (TCM) can significantly improve patients\' symptoms and quality of life, increasing numbers of patients have begun to seek treatment with TCM.  

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. Four visceral hypersensitivity indices (30 min) were randomized to one of four groups: diosmectite (500 mg/kg), diosmectite (500 mg/kg, WAS procedure), water (0.5 ml/ rat) or water (0.5 ml/rat, WAS procedure). Treatment was for 5 days, with the WAS procedure conducted once daily. The test apparatus consisted of a Plexiglas tank with a block affixed to the center of the floor. The tank was filled with fresh room temperature water to within 1 cm of the top of the block. Rats were placed on the block for a period of 1 h every day. For both conditions (basal and after WAS), intestinal transit was evaluated by fecal output measurement Visceral sensitivity to colorectal distension (CRD), was used to mimic changes in visceral sensitivity in response to gut wall distension seen in IBS patients. In the rat, chronic passive water avoidance stress (WAS) is associated with hypersensitivity to colorectal distension. Diosmectite, a purified silt clay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS. However, the effect of diosmectite treatment on IBS visceral hypersensitivity has never been investigated.

Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. For the first time, these data illustrate in wistar rat, that diosmectite reduce the visceral hypersensitivity in IBS. But different treatment effects have been reported. The negative effect of Bifidobacterium has been rarely studied and reported.

Aims & Methods: We aimed to study the effects of gavage administration with *Bifidobacterium bifidus* for two weeks on the visceral hypersensitivity of rats. Colonic visceral hypersensitivity (CVH) was induced by colorectal distension (CRD) and was used to mimic the visceral sensitivity in response to gut wall distension seen in IBS patients. In the rat, chronic passive water avoidance stress (WAS) is associated with hypersensitivity to colorectal distension. Diosmectite, a purified silt clay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS. However, the effect of diosmectite treatment on IBS visceral hypersensitivity has never been investigated.

Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. Four visceral hypersensitivity indices (30 min) were randomized to one of four groups: diosmectite (500 mg/kg), diosmectite (500 mg/kg, WAS procedure), water (0.5 ml/ rat) or water (0.5 ml/rat, WAS procedure). Treatment was for 5 days, with the WAS procedure conducted once daily. The test apparatus consisted of a Plexiglas tank with a block affixed to the center of the floor. The tank was filled with fresh room temperature water to within 1 cm of the top of the block. Rats were placed on the block for a period of 1 h every day. For both conditions (basal and after WAS), intestinal transit was evaluated by fecal output measurement Visceral sensitivity to colorectal distension (CRD), was used to mimic changes in visceral sensitivity in response to gut wall distension seen in IBS patients. In the rat, chronic passive water avoidance stress (WAS) is associated with hypersensitivity to colorectal distension. Diosmectite, a purified silt clay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhea but also the functional abdominal pain experienced in chronic IBS. However, the effect of diosmectite treatment on IBS visceral hypersensitivity has never been investigated.

Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. For the first time, these data illustrate in wistar rat, that diosmectite reduce the visceral hypersensitivity in IBS. But different treatment effects have been reported. The negative effect of Bifidobacterium has been rarely studied and reported.
IBS according to the reference standard, 72 met the Rome IV criteria for IBS, 78.1% female, mean age 35.8 years (range 16 to 77 years)). Among 91 individuals with a diagnosis of IBS, after appropriate limited investigation to exclude relevant organic disease, both had bile acid diarrhoea. Positive and negative likelihood ratios (LRs) for the Rome IV criteria were 5.14 and 0.25 respectively. Among the 19 individuals who had IBS according to the reference standard, but who did not meet Rome IV criteria, the Patient Health Questionnaire (PHQ-12), the eight-item Short Form (SF-8) quality of life (QOL) questionnaire, health care utilization and past gastrointestinal (GI) disease diagnoses by doctors. Respondents with an organic GI disease were excluded from the IBS population. IBS consultants were defined as individuals meeting Rome IV IBS criteria who had visited a doctor for GI symptoms. Results: 6300 individuals completed the survey, 369 were excluded due to inconsistent responses, leaving 5931 (49.2% female; mean age 47.4 ± 17.1 years) to be included for analysis (1994 US, 1994 UK, 1988 Canada). After excluding 36 individuals due to lower GI organic disease, 305 subjects (5.1%; 66% female; mean age 44.7 ± 14.5 years) fulfilled diagnostic criteria for IBS. From these, 195 (64%) had consulted a doctor for GI problems. IBS consultants had equal distribution of stools (63.6% vs. 69% female (p = 0.4) and somatization scores (p = 0.008), the distribution of the most bothersome symptom was similar (p = 0.38), and abdominal pain was the predominant symptom in both groups. See table for details. The frequency of doctor visits for non-GI health issues did not differ (p = 0.15), but IBS consultants had undergone more abdominal surgery (p = 0.04). IBS consultants also reported higher consumption of GI related (p < 0.001), pre-scribed pain (p < 0.001), and anti-depressive medications (p = 0.03), but had similar consumption of anxiety (p = 0.11) and over the counter pain medications (p = 0.34) as non-consulters. See table for details.

GI symptoms

<table>
<thead>
<tr>
<th>IBS consultants</th>
<th>IBS non-consulters</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most bothersome symptom</td>
<td>75 (38.5)</td>
<td>48 (43.6)</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>48 (24.6)</td>
<td>22 (20.0)</td>
</tr>
<tr>
<td>stools/low frequency</td>
<td>40 (20.5)</td>
<td>18 (16.8)</td>
</tr>
<tr>
<td>Hard stools/low frequency</td>
<td>24 (12.3)</td>
<td>20 (18.2)</td>
</tr>
<tr>
<td>of the above frequency</td>
<td>8 (4.1)</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Abdominal pain &gt;3</td>
<td>158 (81.0)</td>
<td>74 (67.3)</td>
</tr>
<tr>
<td>times/week</td>
<td>158 (81.0)</td>
<td>74 (67.3)</td>
</tr>
<tr>
<td>Bowel movement Not at all</td>
<td>106 (54.4)</td>
<td>70 (63.3)</td>
</tr>
<tr>
<td>Somatization</td>
<td>77 (39.5)</td>
<td>15 (13.6)</td>
</tr>
<tr>
<td>PHQ-12 score 7 or above</td>
<td>147 (65.4)</td>
<td>85 (77.3)</td>
</tr>
<tr>
<td>Quality of life</td>
<td>59 (30.3)</td>
<td>31 (28.2)</td>
</tr>
<tr>
<td>Overall estimation of health</td>
<td>118 (60.5)</td>
<td>64 (58.2)</td>
</tr>
<tr>
<td>Very poor/poor Fair/ good</td>
<td>18 (9.2)</td>
<td>15 (13.6)</td>
</tr>
<tr>
<td>MILD/moderate</td>
<td>63 (32.3)</td>
<td>33 (30.0)</td>
</tr>
<tr>
<td>severe/ very severe</td>
<td>22 (11.3)</td>
<td>19 (17.3)</td>
</tr>
<tr>
<td>MILD/moderate</td>
<td>110 (56.4)</td>
<td>58 (52.7)</td>
</tr>
<tr>
<td>severe/ very severe</td>
<td>63 (32.3)</td>
<td>33 (30.0)</td>
</tr>
<tr>
<td>LI.mited</td>
<td>24 (12.3)</td>
<td>29 (26.4)</td>
</tr>
<tr>
<td>Social limitations due to physical or emotional problems</td>
<td>98 (50.3)</td>
<td>46 (41.8)</td>
</tr>
<tr>
<td>Not at all</td>
<td>73 (37.4)</td>
<td>35 (31.8)</td>
</tr>
</tbody>
</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
Conclusion: Among individuals who meet Rome IV criteria for IBS in the general population, those who are older, have more frequent bloating, have greater concern about their bowel function, and who are more socially affected by symptoms since the study. Whilst two had additional diagnoses (FGID plus polyps). 45 were diagnosed with a FGID (9 had another non-urgent diagnosis). At follow up 4 years post-referral, none of the 45 patients diagnosed with organic disease was diagnosed in a significant findings (polyps, iron deficiency). 45 were diagnosed with a FGID (9 had another non-urgent diagnosis). At follow up (mean 2.7 yrs [SD 0.5yrs] post-referral), none of the 45 patients diagnosed with FGID had received a gastroenterology consult based on the original referral (six patients warranted prompt GE review after active screening. Organic disease was diagnosed in a significant findings. 3% of patients attending the Specialist clinic received 1st-line therapy and lifestyle advice, albeit with specialist investigations including anorectal physiology (70%). 33% of patients were referred with faecal incontinence and 37% with chronic constipation. 35% of patient didn't receive any therapy at time of referral. 44% were prescribed treatment but not followed up for assessment of successful response to therapy prior to referral to the specialist clinic. In 28% of patients the diagnosis changed following Motility clinic assessment. Diagnosis at clinic in based on RomeIII questionnaire, depression and anxiety score, thorough history taking and physical examination (including per rectum exam), ad hoc psychiatry input and referral to specialist investigation. In 30% of patients referred with chronic constipation the diagnosis was changed to IBS-C. 8% referred from IBS-D to IBS-M, 8% referred with faecal incontinence had Obstructive Defecation Syndrome, 6% referred as IBS-M were diagnosed as IBS-C, 5% referred as IBS-D were diagnosed as IBS-M, 3% referred with Hirschsprung’s disease had boli acid malabsorption. 56% of patients underwent specialist investigations including unorectal physiology (70%). 33% of patients attending the Specialist clinic received 1st-line therapy and life style advice, albeit 57% of them, who received 2nd-line treatment, having failed 1st-line management.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0487 ALTERED EXPRESSION OF MEMBRANE TRANSPORTERS IN COLONIC MUCOSA OF PATIENTS WITH IRRITABLE BOWEL SYNDROME (IBS) AND POST-INFECTIONOUS (PI)-IBS COMPARED TO HEALTHY SUBJECTS

R. Wall1, T. M. Marques1, H. Edebol-Carlman1, J. Sundin2, R. Vunnma1, I. Rangel1, R. J. Brumme1
1Nutrition-gut-brain Interactions Research Centre, Medical Sciences, Örebro University, Örebro/Sweden
2Kågegrenska Academy, Inst. of Medicine, Gothenburg/Sweden
3Department Of Chemistry And Biomedical Sciences, Linnaeus University, Växjö/Sweden
4Nutrition-gut-brain Interactions Research Centre, School Of Medical Sciences, Örebro University, Örebro/Sweden

Contact E-Mail Address: rebecca.wall@oru.se

Introduction: Irritable bowel syndrome (IBS) affects 5–15% of adults in the general population, and is characterized by chronic recurrent abdominal pain and discomfort and associated with altered bowel habits. The pathophysiology of IBS is complex and not fully understood. Hence, treatment is often based on symptomatology rather than underlying physiological aberrances.
Aims & Methods: The aim of this study was to compare the expression of membrane transporters in mucosal biopsies of healthy subjects, IBS patients and post-infectious (PI)-IBS patients. Mucosal biopsies were obtained from the unprepared sigmoid colon in 18 IBS patients, 9 PI-IBS patients and 10 healthy subjects. Total RNA was isolated and prepared for gene expression analyses using quantitative reverse-transcription polymerase chain reaction (qRT-PCR). We compared the expression of genes encoding membrane-spanning transporters, using GAPDH as a reference gene, and by using the comparative 2−ΔΔCT method.

Results: Colonic expression of SLC7A5 and SLC3A2 (together comprising the amino acid transporter LAT1 + 4F2hc) was significantly lower in IBS patients, but not in PI-IBS patients, compared to healthy controls (P < 0.001). The expression of SLC7A5 (LAT2) tended to be lower in IBS patients compared to controls (P = 0.06). Mucosal gene expression of the short chain fatty acid transporter SMCT1 (SLC5A8) was lower in both IBS patients and PI-IBS patients compared to healthy subjects (P < 0.01).

Conclusion: The amino acid transporters LAT1 and LAT2 appeared to be affected in IBS patients, but not in PI-IBS patients, compared to healthy subjects, suggesting a possible alteration in amino acids transport in this patient group. Furthermore, our results suggest a lower uptake of short chain fatty acids in both IBS- and PI-IBS patients. Altered expression of these transporters may be involved in the pathophysiology of IBS as well as being a potential biomarker of this aberration, and therefore deserves further study in IBS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0408 DIVERTICULITIS IN THE SIGMOID COLON HAS THE HIGHEST RISK FOR INTESTINAL COMPLICATION OF COLONIC DIVERTICULITIS IN JAPANESE PATIENTS


Gastroenterology And Hepatology, Kurashiki Central Hospital, Kurashiki/Japan

Contact E-mail Address: h7.takayama@gmail.com

Introduction: Most colonic diverticulitis can be conservatively treated, but some need surgical intervention due to intestinal complications. Risk factors associated with complications of diverticulitis have been reported mainly from Western countries, but few from Asian countries including Japan.


Results: Of the 282 patients, 183 (64.9%) patients had right-sided diverticulitis, and 70 (24%) had complications; perforation (n = 70), abscess (n = 35), fistula (n = 8), stenosis (n = 4). The rate of complication was highest in sigmoid colon (88.6%) when compared with other locations; ascending colon (10%), transverse colon (1.4%), and descending colon (0%). Multivariate analysis identified the location of sigmoid colon (odds ratio 62.2, 95% confidence interval 21.8–178.0) as a significant independent factor for complications of diverticulitis. Among 70 patients with complicated diverticulitis, 55 (78.6%) patients underwent emergent surgery; most of them (54 patients, 98.2%) were with diverticulitis in the sigmoid colon. Table. Risk factors associated with complications of colonic diverticulitis (univariate and multivariate analysis)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Univariate</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds ratio (95%CI)</td>
<td>p-value</td>
</tr>
<tr>
<td>Age Per 10-year increment</td>
<td>NA</td>
<td>1.37 (0.99–1.89)</td>
</tr>
<tr>
<td>Sex Male</td>
<td>1.72 (0.95–3.19)</td>
<td>0.07</td>
</tr>
<tr>
<td>Female</td>
<td>0.97</td>
<td>0.32</td>
</tr>
<tr>
<td>Body mass index ≥25</td>
<td>2.13 (1.11–4.09)</td>
<td>0.001</td>
</tr>
<tr>
<td>&lt;25</td>
<td>1</td>
<td>0.056</td>
</tr>
<tr>
<td>Time from symptom onset to diagnosis ≥3</td>
<td>2.13 (1.13–4.02)</td>
<td>0.001</td>
</tr>
<tr>
<td>&lt;3</td>
<td>1</td>
<td>0.06</td>
</tr>
<tr>
<td>Fever ≥38</td>
<td>1.36 (0.71–2.55)</td>
<td>0.349</td>
</tr>
<tr>
<td>&lt;38</td>
<td>1</td>
<td>0.32</td>
</tr>
<tr>
<td>Current smoking Yes</td>
<td>0.82 (0.38–1.67)</td>
<td>0.616</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>0.19</td>
</tr>
<tr>
<td>Current drinking Yes</td>
<td>0.99 (0.51–1.91)</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>0.037</td>
</tr>
<tr>
<td>High blood pressure Yes</td>
<td>4.97 (2.66–9.39)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Conclusion: The sigmoid colon was a significant risk factor for complication of colonic diverticulitis in Japanese patients. Acute colonic diverticulitis in the sigmoid colon should carefully be treated with surgical interventions in mind.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0409 A VARIANT OF COL3A1 (RS334646) IS ASSOCIATED WITH RISK OF DEVELOPING DIVERTICULOSIS IN CAUCASIAN MALES

M. C. Reicher1, J. Kupcinskas2, M. Krawczyk3, C. Jing1, B. Appenrodt1, S. N. Weber1, V. Zimmer1, A. Tamelis3, J. L. Lukosiene1, N. Pauziene4, G. Kudelis5, L. Jonaitis6, C. Schramm1, T. Goessler1, M. Glanemann3, L. Kupcinskas2, F. Lammert1

1Department Of Medicine II, Saarland University Medical Center, Homburg/Germany
2Department Of Gastroenterology, Lithuanian University of Health Sciences, Kaunas/Lithuania
3Department Of Surgery, Lithuanian University of Health Sciences, Kaunas/Lithuania
4Institute Of Anatomy, Lithuanian University of Health Sciences, Kaunas/Lithuania
5Clinic For Gastroenterology And Hepatology, University Hospital of Cologne, Cologne/Germany
6Department Of General, Visceral, Vascular And Pediatric Surgery, Saarland University, Homburg/Saar/Germany

Contact E-mail Address: j.kupcinskas@yahoo.com

Introduction: Colonic diverticulosis is one of the most common gastroenterological disorders. Though diverticulosis is typically benign, many individuals develop diverticular disease (DD). DD is thought to stem from a complex interplay of environmental, dietary and genetic factors; however, the exact pathogenesis remains unknown.

Aims & Methods: The aim of our present study was to determine the role of genetic variation within genes encoding for collagen fibrils of the connective tissue in the development of diverticulosis. Genetic polymorphisms COL3A1 (rs334646, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulosis and 285 controls of Caucasian descent using TaqMan assays.

Results: All genotype distributions did not deviate from the Hardy-Weinberg equilibrium. Overall, rs334646, rs1800255 and rs1800012 were associated with diverticulosis. After multivariate logistic regression analysis, they were not linked with the risk of developing colonic diverticulosis in general; when selectively analyzing genders, the minor allele (AA) in rs334646 remained significantly associated with diverticulosis in men (p = 0.037).

Conclusion: Our study shows that a variant of COL3A1 rs334646 is associated with risk of developing colonic diverticulosis in Caucasian men, while COL3A1 rs1800255 and COL1A1 rs1800012 were not associated with this condition in our cohort of patients after adjusting for confounding factors.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0490** THE USE OF ENDOCOSCOPIC CLASSIFICATION “DICA” MAY HAVE A SIGNIFICANT COST-SAVING ON THE BURDEN OF DIVERTICULAR DISEASE OF THE COLON

A. Tursi1, W. Elisei2, M. Picchio1, G. Nasi3, A.M. Mastromatteo1, E. Di Mario4, E. Di Rosa4, M.A. Brandimarte2, C. Cassieri2, P.G. Lecca2, G. Brandimarte4

1Gastroenterology Service, ASL BAT Gastroenterology Service, Andria/Italy
2Digestive Endoscopy Unit, ASL RM6, Albano Laziale/Italy
3Division of Gastroenterology, “P. Columbus” Hospital, ASL RM6, Velletri/Italy
4Clinical Management Staff, “Cristo Re” Hospital, Rome/Italy

Contact E-mail Address: giovannibrandimarte56@gmail.com

**Introduction:** Although symptoms occur in only 20% of patients harbouring diverticula, Diverticular Disease (DD) of the colon DD represents the 8th disease as burden in USA. Several treatment are currently advised in managing those patients, but their impact on the burden of the disease is unknown. The recent DICA endoscopic classification has been developed and validated for the classification of DD, founding that treatment of DICA 1 and DICA 3 patients did not impact significantly in terms of acute diverticulitis occurrence/recurrence and surgery occurrence. Our aim was to assess the impact of using DICA classification on the burden of DD in Italy.

**Aims & Methods:** We assessed retrospectively the overall and the cost/year of treatments for SUDD patients during a 13-year follow-up. Cost of treatments was calculated according to data on drugs’ consumption collected during the DICA study.

**Results:** According to 2015 ISPTA population data, we estimated that >8 million of Italian people >60 years may have diverticulosis. According to our estimations, about 75% of diverticulosis population are on DICA 1, about 30% on DICA 2, and about 13% on DICA 3. According to the drugs’ consumption recorded during our study, we estimated that overall about 679 million of euros could be spent in Italy in treating those patients. In particular, >357 million of euros are spent in DICA 1 population, >205 million of euros in DICA 2 population, and >88 million of euros in DICA 3 population. Considering that medical treatments did not show any significant advantage when treating DICA 1 and DICA 3 people in terms of prevention of acute diverticulitis occurrence/recurrence and surgery occurrence, we can estimated that >475 million of euros could be spent in Italy without any significant benefit for DD population.

**Conclusion:** DD has a significant burden for National Health System in Italy. DICA endoscopic classification may have a significant impact of this burden, helping to select DD people who effectively need treatments in terms of prevention of acute diverticulitis occurrence/recurrence and surgery occurrence.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0492** IMPACT OF TREATMENTS ON FECAL MICROBIOTA AND FECAL METABOLIC PROFILES IN SYMPTOMATIC UNCOMPPLICATED DIVERTICULAR DISEASE OF THE COLON


1Gastroenterology Service, ASL BAT Gastroenterology Service, Andria/Italy
2Department Of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy
3Department of Hygiene and Public Health, ASL RM1, Rome/Italy
4Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy
5Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy, Roma/Italy

Contact E-mail Address: antonius@tiscal.it

**Introduction:** Symptomatic Uncomplicated Diverticular Disease (SUDD) is poorly known, and available data derived mostly from retrospective cohort studies.

**Aims & Methods:** We assessed endoscopically the overall and the cost/year of treatments for SUDD patients when compared with asymptomatic diverticulosis and healthy people, as well as PLS-DA analysis of NMR-based fecal metabolomics showed significant discrimination between HC and AD patient. Our aim was to assess the effect of current treatments for SUDD on fecal microbiota and fecal metabolic profiling in those patients.

**Results:** During the observational period, 47 patients were lost to follow-up. Patients were treated with a 2-week course of 30/day fiber supplementation (3 patients), 1.6 grams/day of mesalazine (3 patients), 900 billion day of probiotic mixture VSL#3 (currently available in Europe as VivoMixx), 3 patients), and 800 mg/day of rifaximin (4 patients). Stool samples were collected at entry (T0), at the end of the 2-week course of treatment (T1), and after 30 (T2) and therefore after 60 days at the end of the therapeutic course (T3). Real-time PCR was used to quantify targeted microbiota. High-resolution proton nuclear magnetic resonance (NMR) spectroscopy associated to Multivariate Analysis with partial least square discriminant analysis (PLS-DA) were applied on the metabo-lite data set.

**Conclusion:** The overall bacterial quantity did not differ before and after treatment (p=0.44). The overall amount of Akkermansia muciniphila species was significantly reduced at T1 (p = 0.017) and T2 (p = 0.026), while at T3 it became similar to that of T0 (p=0.09). The amount of Lactobacillus group was increased in all groups but not significantly at T1 and T2, while at T3 it became similar to that of T0. All treatment were showed the same behaviour in influencing fecal metabolome except for rifaximin group, in which we did not find any metabolic change neither at the end of treatment nor during the washout period.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0491** NATURAL HISTORY OF SYMPTOMATIC UNCOMPPLICATED DIVERTICULAR DISEASE: A 13-YEAR PROSPECTIVE STUDY

A. Tursi1, S. Seilda2, C. Mireglia2, C. Scarpignato2, M. Franceschi3, W. Elisei2, M. Picchio1, G. Brandimarte2, F. Di Mario3

1Gastroenterology Service, ASL BAT Gastroenterology Service, Andria/Italy
2Department Of Medical-surgical Sciences And Translational Medicine, University Of Naples “Federico II, Naples/Italy
3Department Of Gastroenterology, Bolognini Hospital, Seriate (BG)/Italy
4Digestive Endoscopy and Nutrition Unit, “S. Eugenio” Hospital, Rome/Italy
5Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy, Roma/Italy
6Division of Gastroenterology, ASL RM6, Albano Laziale/Italy
7Division of Gastroenterology, ASL RM6, Velletri/Italy
8Division of Surgery, “P. Columbus” Hospital, ASL RM6, Velletri/Italy
9University Of Parma, Department of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy

Contact E-mail Address: mcarabotti@yahoo.it

**Introduction:** Fecal microbiota and metabolome may be altered in patients with Symptomatic Uncomplicated Diverticular Disease (SUDD). In particular, we found that Akkermansia muciniphila species were significantly increased in SUDD patients when compared with asymptomatic diverticulosis and healthy people, as well as PLS-DA analysis of NMR-based fecal metabolomics showed significant discrimination between HC and AD patient. Our aim was to assess the effect of current treatments for SUDD on fecal microbiota and fecal metabolic profiling in those patients.

**Aims & Methods:** Thirteen consecutive female patients, living in the same district and suffering from SUDD, were studied. Patients were treated with a 2-week course of 30/day fiber supplementation (3 patients), 1.6 grams/day of mesalazine (3 patients), 900 billion day of probiotic mixture VSL#3 (currently available in Europe as VivoMixx), 3 patients), and 800 mg/day of rifaximin (4 patients). Stool samples were collected at entry (T0), at the end of the 2-week course of treatment (T1), and after 30 (T2) and therefore after 60 days at the end of the therapeutic course (T3). Real-time PCR was used to quantify targeted microbiota. High-resolution proton nuclear magnetic resonance (NMR) spectroscopy associated to Multivariate Analysis with partial least square discriminant analysis (PLS-DA) were applied on the metabo-lite data set.

**Results:** The overall bacterial quantity did not differ before and after treatment (p=0.44). The overall amount of Akkermansia muciniphila species was significantly reduced at T1 (p = 0.017) and T2 (p = 0.026), while at T3 it became similar to that of T0 (p=0.09). The amount of Lactobacillus group was increased in all groups but not significantly at T1 and T2, while at T3 it became similar to that of T0. All treatment were showed the same behaviour in influencing fecal metabolome except for rifaximin group, in which we did not find any metabolic change neither at the end of treatment nor during the washout period.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0493** 5-YEARS ITALIAN REGISTER OF DIVERTICULOSIS AND DIVERTICULAR DISEASE (REMAID): A LOW PROGRESSION RATE IN EUROPE DURING THE FIRST YEAR OF FOLLOW-UP

M. Carabottic, R. Cuomo2, G. Barbera3, F. Pace4, P. Andreozzi1, R. Benina4, B. Annibale5

1University Sapienza, Rome/Italy
2University of Naples Federico II, Naples/Italy
3Department Of Medical And Surgical Sciences, University of Bologna, Bologna/Italy
4Gastroenterology, Bolognini Hospital, Seriate (BG)/Italy
5Clinical Medicine And Surgery, University Of Naples Federico I, Naples/Italy
6CD Pharma, Milano/Italy
7Department Of Medical-surgical Sciences And Translational Medicine, Sant'Andrea Hospital, University Sapienza, Rome/Italy

Contact E-mail Address: mcarabotti@yahoo.it

**Introduction:** Natural history of colon diverticulosis and diverticular disease (DD) is poorly known, and available data derived mostly from retrospective cohort studies.
Results: 1217 patients were enrolled. Characteristics of each subgroup of patients are reported in the table.

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Diverticulosis</th>
<th>SUDD</th>
<th>PD</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>n=276 (58.1%)</td>
<td>n=300 (58.5%)</td>
<td>n=210 (50.5%)</td>
<td>2.18 (1.60–2.95)</td>
</tr>
<tr>
<td>Male</td>
<td>n=441 (51.9%)</td>
<td>n=258 (41.5%)</td>
<td>n=198 (49.5%)</td>
<td>1.13 (0.84–1.51)</td>
</tr>
</tbody>
</table>

Conclusions: The present study showed that, with respect to diverticulosis, female gender and presence of GI comorbidities are associated with SUDD, whereas younger age, family history for DD and female gender are associated with PD. Furthermore, patients with diverticulitis have higher physical and mental scores compared both to patients with SUDD and PD, suggesting that SUDD and PD reduced QoL of the affected patients.

Disclosure of Interest: R. Cuomo: Speaker and consultant for Alfa Wassermann, A. B. Annaile: Speaker and consultant for Alfa Wassermann, F. Pace: Speaker and consultant for Alfa Wassermann. All other authors have declared no conflicts of interest.
filled in long-lasting pain questionnaire. Abdominal pain lasting <24 h was reported in patients with SMC (86.3%) and in 113/154 with PD (73.7%) (p = 0.026). Symptom severity score was higher in PD group than in SUD group, but this difference was not statistically significant (5.5 ± 2.4 vs 5.1 ± 2.2 cm; p = 0.130). Patients with PD had short-lived pain located more frequently in left lower abdomen (50.6% vs 50%; p = 0.002), whereas abdominal diffuseness was more prevalent in patients with SMC (29.6% vs 20.8%; p = 0.058). Pain lasting >24 h was more prevalent in PD group compared to SUD group (62.1% vs 52.6%; p = 0.029). Pain severity was higher in patients with PD, pain lasting >24 h, than observed in SMC (6.4 ± 2.6 vs 5.9 ± 2.4; p = 0.099). Long-lasting pain was more frequently located in left lower abdomen in patients with PD (53.6% vs 23.7%; p < 0.01), whereas more frequently was diffuse in SMC patients (17.3% vs 71.5%; p < 0.001). Moreover, in patients with PD, pain lasting >24 h, and SMC patients, pain was localized to fever (28.6% vs 26.4%; p < 0.001), confinement to bed (35.7% vs 18.6%; p = 0.002), medical consultation (38.6% vs 23.7%; p = 0.003), need for therapy (42.9% vs 19.2%; p < 0.001), and hospitalization (26.8% vs 8.3%; p < 0.001).

Conclusion: PD patients show some peculiar clinical features of abdominal pain. SMC patients frequently complained abdominal diffuse and short lasting pain. In contrast patients with PD frequently complained pain located in the left lower abdomen lasting for more than 24 h. Our results suggest these features are useful indicators to distinguish patients with SMC and PD and should be carefully assessed in clinical work-up of diverticular disease.

Disclosure of Interest: B. Annibale: Speaker and consultant for Alfa Wassermann G. Barbara: Speaker and consultant for Alfa Wassermann F. pace: Speaker and consultant for Alfa Wasserman R. Cuomo: Speaker and consultant for Alfa Wasserman All other authors have declared no conflicts of interest.

P0496 MUSCULAR INFLAMMATORY STATE AND PHENOTYPIC SWITCH IN DIVERTICULOSIS AND COMPLICATED DIVERTICULAR DISEASE

I. Pallott1, A. Scrocco2, A. Ignazzii, M.A. Maselli, M. Carabotti1, A. Cincia1, G. De Tomasi1, F. Pezzolla1, E.S. Corazzari1, C. Severi1 1Cervetty S. Antonio, Rome, Italy 2Scientific Institute of Gastroenterology “S. De Bellis”, Castellana Grotte/Italy 3Internal Medicine And Medical Specialties, University Sapienza of Rome, Italy

Contact E-mail Address: carola.severi@uniroma1.it

Introduction: Colonic diverticulitis, as well as diverticular disease, is a multifactorial disease characterized by neuronal-myocellular alterations. Among the most common etiological factors, impaired contraction, inflammation and fibrosis. Mesenchymal smooth muscle cells (SMC) are able to switch from a contractile phenotype to a less mature phenotype, overexpressing contractile markers as well as synthesis and release of several pro-inflammatory cytokines. Different organ specific pathways have been demonstrated to induce this mesenchymal transition. Renal fibrosis is driven by transforming growth factor-β (TGF-β) through inverse regulation of Smad2/3, while in liver fibrosis by PDGF-β, ending in downregulation of marker gene Trb3 expression.

Aims & Methods: Aim of this study was to determine, both in human uninvolved and involved tracts of asymptomatic diverticulitis (AD+AD-) and in stent-insonated colon diverticulitis, the differences in expression of collagen, fibrosis, inflammation and transformation state of SMC.

Results: In both muscle layers, AD+ and AD- SMC compared to CTR, showed an overall increase in inflammatory gene expression, with a trend of decrease from AD+ to AD-, the lowest expression being observed in CDD. This inflammatory upregulation was associated with an increase in IL-1β secretion in SMC culture medium compared to CTR and a progressive inhibition of contraction to carbachol, already in AD- in circular strips and SMC. In contrast relaxation in response to VIP resulted significantly decreased only in AD+ both on strips and SMC with no alteration in circular and stented DDD. Peculiarity of circular SMC was a progressive increase in Coll1 expression from AD to CDD compared to CTR (3 hundred fold increase) paralleled to about 50% decrease in the contractile protein α-SMA. Differently, longitudinal SMC, both in AD and CDD, presented a homogenous increased Coll1 expression, decrease in α-SMA and reduction of contraction. VIP-induced relaxation was significantly decreased in CDD. Phenotypic switch was only observed in CDD, driven in circular layer, by a TGF-β-dependent pathway (increased expression for TGF-β: 2.88 ± 0.6 and Smad2/3, induced Smad2/3 upregulated α-SMA and longitudinal SMC, while in circular layer by PDGF-β-dependent pathway (increase of PDGF-β: 2.27 ± 0.44 and parallel decrease of Trb3: 0.58 ± 0.13).

Conclusion: Intrinsically myogenic alterations are present in colonic asymptomatic diverticulitis and complicated diverticular disease, both in the circular and longitudinal layers characterized by a myogenic pro-inflammatory state and an impaired contractile activity that, in complicated diverticulitis disease, ended in a muscular synthetic pro-fibrotic switch.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0497 THE ONCOCgenic MIR-491-5P/MIR-875-5P-NOTCH3-PHLDB2 AXIS IN GASTRIC TUMORIGENESIS

T. Huang1, Y. Zhou1, J. Zhang2, C.C. Wong1, Y. Dong1, A.S.I. Cheng1, J.Y. Yu1, C.W. Kang2, C. Severi1 1Anatomical And Cellular Pathology, Chinese University of Hong Kong, Hong Kong/Hong Kong PRC 2Institute Of Digestive Disease, Partner State Key Laboratory Of Digestive Disease, Chinese University of Hong Kong, Hong Kong/Hong Kong PRC 3School Of Biomedical Sciences, Chinese University of Hong Kong, Hong Kong/Hong Kong PRC

Contact E-mail Address: huangtingting0531@gmail.com

Introduction: Aberrant Notch activation has been implicated in multiple malignancies, including gastric cancer (GC). However, the clinical significance of Notch receptors and their functional role in gastric carcinogenesis remain unclear.

Aims & Methods: We aim to delineate the dysregulated Notch signaling in GC and comprehensively reveal its activation by silenced microRNAs (miRNAs) in gastric carcinogenesis. The expression clinical relevance of NOTCH1-4 in GC were achieved from online available dataset. The mRNA and protein expression of NOTCH3 were examined by qRT-PCR and Western blot. The biological function of NOTCH3 in GC was demonstrated by MTT proliferation, monolayer colony formation, cell migration and invasion assays through siRNA-mediated knockdown. The mRNA silencing efficiency was assessed by qRT-PCR. Western blot and dual luciferase activity assays were performed to identify the repression effect of miR-491-5p and miR-875-5p on NOTCH3. The functional downstream targets of NOTCH3 were identified by gene expression microarray.

Results: NOTCH3, but NOTCH1-2, 4, is uniformly up-regulated and significantly correlated with poor survival in multiple GC datasets. Knockdown of NOTCH3 in AGS and MKN28 cells exhibited significant anti-oncogenic effect in vitro. NOTCH3 downregulation suppressed cell proliferation, reduced monolayer colony formation, and inhibited cell invasion ability. Moreover, NOTCH3 knockdown significantly suppressed cell migration through siRNA-mediated knockdown. The expression of PHLDB2 axis, miR-491-5p and miR-875-5p, in patients with PD was associated with increased NOTCH3 expression. However, increased NOTCH3 expression in AGS and MKN28 cells significantly promoted cell proliferation, cell migration and cell invasion, whereas more frequently was diffuse in PD group compared to SUD group (62.1% vs 52.6%; p = 0.029). Pain severity was higher in patients with PD, pain lasting >24 h, than observed in SMC (6.4 ± 2.6 vs 5.9 ± 2.4; p = 0.099). Long-lasting pain was more frequently located in left lower abdomen in patients with PD (53.6% vs 23.7%; p < 0.01), whereas more frequently was diffuse in SMC patients (17.3% vs 71.5%; p < 0.001). Moreover, in patients with PD, pain lasting >24 h, and SMC patients, pain was localized to fever (28.6% vs 26.4%; p < 0.001), confinement to bed (35.7% vs 18.6%; p = 0.002), medical consultation (38.6% vs 23.7%; p = 0.003), need for therapy (42.9% vs 19.2%; p < 0.001), and hospitalization (26.8% vs 8.3%; p < 0.001).

Conclusion: PD patients show some peculiar clinical features of abdominal pain. SMC patients frequently complained abdominal diffuse and short lasting pain. In contrast patients with PD frequently complained pain located in the left lower abdomen lasting for more than 24 h. Our results suggest these features are useful indicators to distinguish patients with SMC and PD and should be carefully assessed in clinical work-up of diverticular disease.

Disclosure of Interest: B. Annibale: Speaker and consultant for Alfa Wassermann G. Barbara: Speaker and consultant for Alfa Wassermann F. pace: Speaker and consultant for Alfa Wasserman R. Cuomo: Speaker and consultant for Alfa Wasserman All other authors have declared no conflicts of interest.

P0498 FOX2 SUPPRESSES WNT SIGNALING PATHWAY IN GASTRIC CARCINOGNESIS THROUGH TRANSCRIPTIONALLY MODULATING E3 LIGASE IRF2BP1 AND PROMOTING B-Catenin DEGRADATION

Y. Dong1, A. Higashimori2, Y. Zhang1, S. Sm Ng1, T. Arakawa1, F.K.L. Chan1, J.J.Y. Sung1, J. Yu1 1Institute Of Digestive Disease And Department Of Medicine And Therapeutics, The University Of Hong Kong, Hong Kong/Hong Kong PRC 2Department Of Gastroenterology, Osaka city University Graduate School of Medicine, Osaka/Japan 3Department Of Surgery, The Chinese University Of Hong Kong, Hong Kong/Hong Kong PRC

Contact E-mail Address: yujia_dong@yahoo.com

Introduction: We found that tumor suppressor gene FOX2 was silenced in gastric cancer (GC) through promoter hypermethylation. Restoration of FOX2 suppressed GC tumorigenesis through inhibition of canonical Wnt
Aims & Methods: We hypothesize that FOXF2 transcriptional upregulates a novel E3 ligase that targets β-catenin for degradation. We aim to investigate the molecular mechanism of FOXF2 in GC and identify such E3 ligase by PPI array and immunoprecipitation (IP) assay and luciferase assay. Results: FOXF2 significantly decreased both nuclear and cytosolic levels of β-catenin in a GSK-3β-dependent manner and induced β-catenin degradation via ubiquitin-proteasome pathway in gastric cancer cell lines. Using Human Ubiquitin Chromatin Immunoprecipitation (CHIP) assay and luciferase assay, we identified that IRF2BPL was upregulated upon FOXF2 overexpression and was a promising E3 ligase for β-catenin. Overexpression of IRF2BPL suppressed the TOP-flash luciferase reporter and reduced Wnt target gene c-myc expression in GC cells.

Conclusion: We reported a novel FOXF2-IRF2BPL-E3 ligase for β-catenin degradation. Immunoprecipitation assay suggested that IRF2BPL interacted with nuclear inactive enhancer element on the 5'-flanking region of IRF2BPL gene, suggesting that FOXF2 transcriptionally upregulates IRF2BPL gene transcription. In addition, IRF2BPL promoter region was downregulated in human GC tissues compared to the adjacent normal tissues (N > 50). We also performed comprehensive activity assay. Wild-type FOXF2 but not the mutant ΔFOXF2 significantly activated the lucerase reporter in AGS and 293F cells, suggesting that FOXF2 directly activated IRF2BPL transcription. Moreover, FOXF2 significantly decreased the level of H3K27Ac (a marker to distinguish active from inactive enhancer element) on the 5'-flanking region of IRF2BPL gene, suggesting that FOXF2 transcriptionally upregulated IRF2BPL gene transcription. In addition, IRF2BPL promoter region was downregulated in human GC tissues compared to the adjacent normal tissues (N > 50).

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: However, the physiological role of the obestatin/GPR39 system in healthy human stomach was observed in the neuroendocrine cells and GPR39 expression was localized mainly in the chief cells of the oxyntic glands but also in a few cells of the neck section (pre-chief cells). This expression co-localized with PGI expression in both cell types. The mucous neck cells were positive for PGI and negative for GPR39. Obestatin also exerted a dose dependent stimulatory effect on PGI secretion in the in vitro explant culture of human stomach, being significant for 100 and 200 nM compared to the control sample at 20 min (39% and 66% over control, respectively), for 200 nM at 40 min (51% over control) and 100 nM at 60 min (64% over control).

Conclusion: The obestatin/GPR39 system is physiologically involved in the stimulation of PGI secretion in the healthy human stomach.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0503 SERUM EXOSOMAL miRNAS EXPRESSION AS NOVEL BIOMARKERS FOR DETECTION OF ESOPHAGEAL ADENOCARCINOMA

H. Chen
Jiangyuan Province Hospital, Nanjing/China

Contact E-mail Address: chenhan088@hotmail.com

Introduction: Novel biomarkers are needed for the diagnosis of esophageal adenocarcinoma (EAC) as it is urgently required. Currently, there is increasing evidence suggesting that serum exosomal miRNAs may be potential noninvasive biomarkers for certain diseases. The objective of the present study was to find and investigate whether exosomal miRNAs could be effective biomarkers for EAC.

Aims & Methods: In the present study, exosomes were isolated from the serum of both EAC patients and normal controls. Total RNA was extracted from exosomes and miRNA levels were compared between EAC and control patients in serum exosomes. We also sought to investigate the relevance of exosomal miRNA expression to clinicopathological factors in EAC.

Results: We measured levels of several exosomal miRNAs, including miR-21, miR-16, miR-25, miR-155, miR-192, miR-92a, in 9 EAC patients and 9 controls. Interestingly, miR-192 expression was significantly lower in EAC patients than in controls (Fold-change 35.36, 30.87, 9.24 and 2.26, respectively). The level of miR-192 was significantly lower in EAC patients than in controls (Fold-change 0.35). We did not observe a significant fold-change in miR-92a expression levels between EAC and controls. P-values did not achieve statistical significance, possible due to large standard deviations and relatively small sample sizes. We also visualized exosomes isolated from both healthy mediums and sera of EAC patients and control subjects, with diameter ranging from 30 to 100 nm using transmission electron microscopy.

Conclusion: Serum exosomal miRNAs can be isolated, measured, and may serve as potential biomarkers in EAC patients. miRNA microarray or next-gen sequencing analyses and larger sample sizes are needed to validate these early results.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0504 COMPARATIVE STUDY BETWEEN THE EFFICACY OF REBAMIPIDE, SUCRALFATE AND PanTROPAZOLE IN TREATMENT OF POST-BANDING VARICEAL ULCERS

M. Yousry1, A. A. Wahib2, G. M.M. Soliman2
1Tropical Medicine & Gastroenterology, Faculty of Medicine Al-Azhar university, Gharbia, Almehalla Saftturab/Egypt
2Tropical Medicine & Gastroenterology, Faculty of Medicine Al-Azhar university, Cairo/Egypt

Contact E-mail Address: doctor_gency@yahoo.com

Introduction: Endoscopic variceal band ligation (EVL) is an effective procedure to control and prevent variceal bleeding in patients with liver cirrhosis. Although EVL has some complications, yet these complications are related to post-EVL ulcers. Few data exist regarding therapy of post-ligation ulcer and treatment been mostly empirical with drugs used for peptic ulcer diseases.

Aims & Methods: We aimed to compare the efficacy of rebamipide, sucralfate and pantoprazole in treatment of post banding variceal ulcers. Seventy-five patients with esophageal varices eligible for elective band ligation represented the population of the study. The patients were allocated into three groups; rebamipide group, they received rebamipide 100 mg 3 times daily; pantoprazole group, they received pantoprazole 40mg/day orally at morning; sucralfate group, they received sucralfate 1 gm every 6 hours, for 14 days beginning at the next day of band ligation. Subjects underwent EGD 14 days after banding.
Primary outcomes included the size and number of ulcers and the subjects' reports of pain, dysphagia, chest pain and vomiting.

**Results:** At follow-up endoscopy, the number of patients with post-band ulcers and size of ulcers were similar in the three groups. However, the number of ulcers for each patient is statistically significant less in rebamipide group when compared with pantoprazole and sucralfate (P < 0.001). Chest pain, dysphagia and vomiting scores were not significantly different. Dysphagia was by far the most common symptom with no case of bleeding was reported in all patients of the studied groups.

Conclusion: Rebamipide is effective in decreasing the post banding complication and reducing size of ulcer as well as the number of ulcers with significant effect on post banding ulcer formation. Rebamipide can be used routinely in settings of post-EVL as a good alternative to pantoprazole and sucralfate.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Results:** A total of 113 patients were included in the study. The median GBS was 10 (IQR 3–21), and RRC was 24 (IQR 12–38). The score of fibrin glue was correlated with AUROC of 0.63. The median CT number was 48HU (IQR 26.7–60.7). The CT number also did not discriminate well with AUROC of 0.65. We set the cut off for GBS at 4, and a CT number at 50HU. The endoscopic treatment percentage of the group of GBS≥4 and CT number<50HU was 63.5%, GBS≥4 and CT number<50HU was 63.5%, GBS<4 and CT number<50HU was 33.3%, GBS<4 and CT number<50HU was 11.1%. We counted that GBS≥4 was 1 point, CT number≥50HU was 1 point. The points were added up to a total score that predicts the necessity for endoscopic treatment. Those scoring 2 points was about 60 percentage for the necessity for endoscopic treat- ment, 1 points was about 30 percentage, 0 point was about 10 percentage. AUROC of this model was 0.69.

**Conclusion:** Using both the GBS and CT in combination performed better for predicting the necessity of endoscopic treatment for patients presenting with upper gastrointestinal bleeding.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

References

**References**
K. Watanabe1, Y. Kawasaki2, K. Kioka2, H. Nebiki3

Introduction: Proton pomp inhibitors (PPIs) have been widely used for the treatment of endoscopic submucosal dissection-induced gastric ulcers. However, post-ESD bleeding after gastric endoscopic submucosal dissection (ESD) is a concern due to the high risk of delayed bleeding. We investigated the incidence of delayed bleeding associated with ESD, and expected to reduce bleeding after gastric endoscopic submucosal dissection (ESD) by strongly inhibiting gastric acid secretion compared with PPIs.

Aims & Methods: We compared the incidence of bleeding after gastric ESD between patients who took VPZ with ESD and those treated with esomeprazole (EPZ). Data for 101 patients who underwent gastric ESD from December 1, 2014 to December 31, 2016 in Osaka City General Hospital and started to take VPZ (n = 22) or EPZ (n = 79) by the day before ESD was reviewed. Twelve of them (3 in the VPZ group, 9 in the EPZ group) were excluded for simultaneous resection within 1 month. A case in which active bleeding or exposed vessels were observed on the bottom of ulcers with hematemesis, melena or a drop of not less than 2 g/dl of Hemoglobin within 4 weeks after ESD was defined as "post-ESD bleeding". In addition, we performed second-look endoscopy on the day after ESD. A case in which hemostasis was needed with hemorrhage of Forrest IIa or more was defined as "post-ESD bleeding". In addition, we perform second-look endoscopy on the day after ESD.

Results: Gender, age, sex, resected specimen diameter, oral anti-thrombotic drug administration, and diagnosis were not significantly different in both groups. Two of the 19 patients in the VPZ group (10.5%) and 6 of the 70 patients in the EPZ group (8.6%) had Post-ESD bleeding (Table). In addition, 6 patients in the VPZ group (31.6%) and 37 patients in the EPZ group (52.9%) had next-day hemostasis. There was no significant difference in both groups regarding post-ESD bleeding rate and next-day hemostasis rate in the VPZ group and the EPZ group.

Table: Incidence of post-ESD bleeding and next-day hemostasis

<table>
<thead>
<tr>
<th></th>
<th>VPZ group, n (%)</th>
<th>EPZ group, n (%)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>19</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Post-ESD bleeding</td>
<td>2 (10.5)</td>
<td>6 (8.6)</td>
<td>0.678</td>
</tr>
<tr>
<td>Next-day hemostasis</td>
<td>6 (31.6)</td>
<td>37 (52.9)</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Conclusion: VPZ didn’t significantly reduce post-ESD submucosal dissection bleeding compared with EPZ.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0509 OUTCOMES FROM AN INTERNATIONAL MULTICENTRE REGISTRY OF PATIENTS WITH GASTROINTESTINAL BLEEDING UNDERGOING ENDOSCOPIC TREATMENT WITH HEMOSPRAY


Introduction: The primary aim of this international multicentre registry is to collect data on the successful cessation of GI bleeding following application with Hemospray. Secondary outcomes of recurrent bleeding (within 72 hours), 30 day mortality, disease and procedure specific outcomes were also collected.

Aims & Methods: Data was collected prospectively (January 2016 – April 2017) on the use of Hemospray in acute upper and lower GI bleeding, from 3 initial centres in the international registry. The use of Hemospray in GI bleeding was at the endoscopist’s discretion at the time of endoscopy. Hemospray use was either as mono- or dual-therapy with standard endoscopic techniques or as rescue therapy once standard methods had failed.

Results: To date 56 cases have been recruited (39 male and 17 female). The Forrest Classification of the bleeding lesions were in 5 (9%) cases Forrest Ia bleed, 41 (73%) Ib, 3 (5%) Ic and 3 (5%) Forrest Ib bleed. Sources of GI bleed included Peptic ulcer disease 24 (43%), post endoscopic therapy 9 (16%), malignancy 11 (20%), inflammation 3 (5%), Mallory Weiss tear 2 (4%), angiodysplasia 1 (2%), bleeding polyp 2 (4%), duodenal diverticular bleed 1 (2%), oesophageal variceal bleed 1 (2%), radiation 1 (2%), and post bleed NGT insertion 1 (2%). A total of 48 patients (86%) achieved immediate haemostasis after Hemospray endoscopic therapy, 8 patients did not achieve haemostasis. 2 managed conservatively, 1 treated by radiological intervention and 5 died. Hemospray was used in 25 patients (45%) as monotherapy [haemostasis achieved in 22 (88%)], in 22 patients (39%) in combination with other modalities [haemostasis achieved in 17/22 (77%)] and in 9 patients (16%) used as rescue therapy where other modalities failed [haemostasis achieved in 9/10 (100%)]. Hemospray was used in 9/9 (100%) patients with anticoagulated at the time of emergency endoscopy. Haemostasis was achieved in all anticoagulated patients. There were 6 cases of delayed re-bleding of which 1 occurred in less than 24 hours post initial endoscopy, 2 at 24–72 hours, 1 at 4–7 days, 1 at 7–14 days and 1 more than 14 days after the initial endoscopy. There was no prior use of anticoagulation in any of these patients. There were no reported immediate or delayed complications from the treatment.

Conclusion: Early data from our registry show a high rate of immediate haemostasis (86%) with Hemospray and an excellent safety profile. The imminent expansion of this registry to other centres in Europe will provide invaluable data on the efficacy of Hemospray in various disease and patient types over the coming years.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0511 RISK FACTORS OF GASTROINTESTINAL BLEEDING IN PATIENTS RECEIVED DUAL ANTIPLATELET THERAPY

W. Yingyongthawal1, A. Pulsomari1

Introduction: Current guidelines suggest dual antiplatelet therapy (DAPT), clopidogrel or ticagrelor with aspirin, for patients with acute coronary syndrome. Other indications of DAPT include recurrent ischemic stroke and percutaneous coronary revascularization. Gastrointestinal bleeding (GIB) is one of the most common adverse effects of DAPT, potentially causing hospital admission and death. Scanty information regarding safety of DAPT in Thailand is available. Vascular disease. Gastrointestinal bleeding (GIB) is one of the most common adverse effects of DAPT, potentially causing hospital admission and death. Scanty information regarding safety of DAPT in Thailand is available.

Aims & Methods: The primary aim of this registry to other centres in Europe will provide invaluable data on the efficacy of Hemospray in various disease and patient types over the coming years.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
Results: A total of 201 patients received clopidogrel with aspirin and 199 patients received ticagrelor with aspirin were recruited. Mean ± standard deviation age was 66.2 ± 11.3 years and 63.3% of patients were male. The most common indication of DAPT was acute coronary syndrome (85.4% in clopidogrel group vs.100% in ticagrelor group). Duration of treatment with clopidogrel and ticagrelor were 121.5 days vs. 251 days, respectively (p = 0.216). There were 20 (10.1%) GIB events in clopidogrel group and 11 (5.5%) in ticagrelor group. The most endoscopic findings of GIB was gastric erosion (44 % in clopidogrel group vs. 66.7 % in ticagrelor group). Risk ratio (RR) of GIB event of clopidogrel compared to ticagrelor was 1.84 (95% confidence interval [CI] 0.95–3.7, p = 0.093). By multivariate logistic regression analysis, duration of DAPT > 180 days (RR 3.26; 95% CI 1.89–5.69, p < 0.001) and history of previous GIB were associated with GIB events (RR 10.35; 95% CI 6.04–17.71, p < 0.001).

Conclusion: Risk of GIB is almost two times higher among patients received clopidogrel with aspirin compared to those received ticagrelor with aspirin. Closed monitoring patients who had duration of DAPT < 180 days and previous GIB might be minimized the risk of GIB event after receiving DAPT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0512 REAL-LIFE ANALYSIS OF FREQUENCY, LOCATIONS AND BLEEDING SOURCES IN UNSELECTED EMERGENCY PATIENTS DURING NON-VITAMIN K ANTAGONIST NOAC THERAPY AND COMPARISON TO CONTROLLED APPROVAL STUDIES

M. Raithe1, H. Albrecht1, L. S. Maass2, S. Peter3, A.K. Kluger1, M.F. Neurath3, A. F. Hagel2
1St. Marien Waldkrankenhaus, Erlangen/Germany
2University Clinical Center Erlangen, Erlangen/Germany
3Department Of Internal Medicine 1, University Clinical Center Erlangen, Erlangen/Germany

Contact E-mail Address: martin.raithe@waldkrankenhaus.de

Introduction: Non-vitamin K direct oral anticoagulants (NOAC) are increasingly used in thromboembolic disorders due to an efficacy at least equally as vitamin K antagonists (VKA) and/or significantly higher safety for intracerebral bleeding or major bleedings of any source. In the approval studies, there was no generally increased bleeding rate for all types of bleeding, but different gastrointestinal bleeding (GIB) rates for apixaban, dabigatran, edoxaban and rivaroxaban. Reversed ticagrelor with aspirin were recruited. Mean ± standard deviation of each included unselected patients manifesting with a GI bleeding under anticoagulation in 2014. All patients who were diagnosed with a GI bleeding under NOAC or VKA therapy in the emergency department of the University Hospital Erlangen were analyzed. Their data were entered in a registry and evaluated in terms of bleeding type, localization, use of proton pump inhibitor and frequencies. These real-life results were then compared with the published data from important approval studies, reporting each on the above mentioned NOACs.

Results: 31 patients with GI bleeding, 31 patients received VKA (14.5%) and 23 patients (10.8%, n.s.) had NOAC with major bleeding rates of 68% and 61%, resp., in patients with VKA 87% had an upper GIB, 12% a lower GIB, and none had a rectal bleeding (0%). During NOAC therapy, a similar distribution was found with 71% and 17%, but the proportion of rectal bleeding was higher with 10%.

This frequency of GIB rates in unselected emergency patients is significantly higher than reported from the controlled NOAC approval studies that included selected patients (3.8–3.6% GIB). In these NOAC studies a lower rate of GIB (55%, 0–71%), a higher rate for lower GIB (32%, 17–84%) and rectal bleeding (15%, 10–47%) was found. Although NOACs are associated with a lower rate for GIB than VKA in the setting of emergency patients, NOACs show a shift of the type of bleeding to lower GIB or rectal bleeding sources in our analysis from emergency patients and in the NOAC approval studies. Only 50% of patients with NOAC were on proton pump inhibitor therapy.

Conclusion: The frequency of GIB in everyday life is approximately 10% higher than reported from the controlled NOAC studies, irrespective of the type of anticoagulation used. NOACs were associated with a non-significantly lower bleeding rate compared with VKA, but major GIB rates were similar. VKA with a bioavailability of 100% after oral ingestion showed a tendency of higher rates of upper GIB, while NOACs with a reduced GI absorption rate of 7–68% were found to occur more frequently at lower GIB sites. Thus, prior to any anticoagulation, a pre-therapeutic risk analysis for the occurrence of GIB is still required. Certain patient groups (anemia, aortic valve stenosis, renal insufficiency, NSAIDs, etc.) can benefit from proton pump inhibitor therapy, early endoscopy with intervention, or NOAC differential therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

References

Disclosure of Interest:ingestion.

Test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin and negative patients at baseline. Symptom improvement after long-term capsaicin ingestion was comparable in capsaicin positive and negative patients at baseline (NS). After long-term capsaicin ingestion, the capsaicin positive (not chemosensitive) patient group. Symptom diaries for upper and lower gastrointestinal symptoms (visual analogue scales) were completed in the week before and during capsaicin ingestion and weekly aggregate symptom scores were calculated. Results are given as median; 25%/75%, p < 0.05 was considered significant.

Results: 53% FD had a positive capsaicin test. Basic clinical characteristics (age, gender, FD subtype, medication, psychological profile) were comparable in capsaicin positive and negative FD, but median daily aggregate upper gastrointestinal symptoms scores were significantly higher in capsaicin positive (median: 9.4; 5.4–11.7) than in capsaicin negative patients (6.6; 4.1–9.8) (p < 0.05). Median scores for epigastric pain, nausea and epigastric distension were similar in capsaicin positive and negative patients (p > 0.05). On the contrary, capsaicin negative patients had significantly lower scores for satiety (p < 0.001) and epigastric bloating (p = 0.01) than capsaicin positive patients. Lower abdominal symptoms were comparable in capsaicin positive and negative patients at baseline (NS).

After capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by −3.3 (−4.9–1.9); p < 0.001 in capsaicin positive and −2.6 (−3.5–0.8) in capsaicin negative patients. Lower abdominal symptoms scores after capsaicin ingestion were reduced by −1.0 (−1.8–0.1); p < 0.05) in capsaicin positive but not significantly altered (−0.6; 1.7;+0.9; NS) in capsaicin negative patients. After long-term capsaicin ingestion, the capsaicin test turned negative in 53% of chemosensitive patients (p < 0.01).

Conclusion: Differences in upper GI symptoms distinguished capsaicin positive and negative patients at baseline. Symptom improvement after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Führer M, Vogelsang H, Hammer J. Neurogastroenterol Motil 2011;23:918

Disclosure of Interest:No author has declared no conflicts of interest.

References


Disclosure of Interest: All authors have declared no conflicts of interest.
pain (ClinicalTrials.gov Identifier: NCT01919021, NCT00944593) patients likely to benefit from this novel approach to treatment. Controls had relatively rapid ACW and solid GE. Future studies will identify abnormal gastric motor function and the benefit of "prior JN" on symptoms was not identified. Few patients in the DG group had objective evidence of bloating and pain were reduced by JN in DG patients (p < 0.05). Sensations were not affected by JN in the controls; however, fullness, bloating and pain were reduced in JN in DG patients (p < 0.05). Compared to water, JN induced a greater GI-peptide response (e.g. PP, GLP-1) and initial liquid GE was slower (gastric content volume after meal: 5.9 ± 4.7 ml vs. 13 ± 11.3 ml, higher, p = 0.019). Subsequent liquid GE was similar in both study conditions (T= 3 ± 5.8 min, p = 0.727). Antral contraction wave (ACW) frequency was 2.7 (2.6–2.9) min in health and was highest in diabetic controls (3.1 (2.7 to 3.3) min). Solid GE was more rapid after JN than water (2.1 (1 to 3) beads emptied ≥60 min) and, again, was highest in diabetic controls (3 (1 to 7) beads emptied ≥60 min). Numerically the GI-peptide response was less pronounced in both diabetic groups than healthy controls; however, the difference was not significant and a correlation with postprandial symptoms or gastric function was not identified.

**Conclusions:** This clinical study demonstrates beneficial effects of prior JN on clinical symptoms related to bloating and pain. AIMS AND METHODS: The study tests the hypothesis that JN prior to a test meal improves postprandial symptoms (primary outcome) and gastric function. **Results:** Diabetic patients with severe symptoms (gastroparesis cardiac symptom index (GCSI) ≥ 27), diabetic controls (GCSI < 14) and healthy controls entered a randomized, double blind, controlled trial. An insulin glucose infusion controlled glycaemia. A JN feeding tube was placed at endoscopy with biopsies taken from the stomach and duodenum. Either liquid nutrient (2 kcal/min) or water was infused for 60 min. Afterwards the Nottingham Test Meal was ingested (NTM: liquid: 400 mL, 300 kcal; solid: 12 non-nutrient agar beads). Symptoms were provided 95% posterior ("credible") intervals and mixed model analysis compared response to intervention and between groups. **Results:** 9 DG patients, 9 diabetic and 12 healthy controls were recruited. There was no difference in sex distribution, age, weight, medical history (e.g. duration of disease or endoscopic findings including histology) between groups. DG patients had more psychiatric co-morbidity and reported higher satiety, bloating and pain after ingesting of the NTM than diabetic and healthy controls (p < 0.05). Sensations were not affected by JN in the controls; however, fullness, bloating and pain were reduced in JN in DG patients (p < 0.05). Compared to water, JN induced a greater GI-peptide response (e.g. PP, GLP-1) and initial liquid GE was slower (gastric content volume after meal: 5.9 ± 4.7 ml vs. 13 ± 11.3 ml, higher, p = 0.019). Subsequent liquid GE was similar in both study conditions (T= 3 ± 5.8 min, p = 0.727). Antral contraction wave (ACW) frequency was 2.7 (2.6–2.9) min in health and was highest in diabetic controls (3.1 (2.7 to 3.3) min). Solid GE was more rapid after JN than water (2.1 (1 to 3) beads emptied ≥60 min) and, again, was highest in diabetic controls (3 (1 to 7) beads emptied ≥60 min). Numerically the GI-peptide response was less pronounced in both diabetic groups than healthy controls; however, the difference was not significant and a correlation with postprandial symptoms or gastric function was not identified.

**Conclusion:** This clinical study demonstrates beneficial effects of prior JN on functional, bloating and pain after a 400 mL test meal in diabetic patients with moderate-severe symptoms compatible with gastroparesis (GCSI ≥ 27). Additionally, solid GE was accelerated after JN; however, this effect was not limited to DG patients and, thus, the treatment effect that improved symptoms could not be hypothesized. Few patients in both groups had objective evidence of abnormal gastric motor function and the benefit of "prior JN" on symptoms was not limited to patients with slow GE. However, it was observed that diabetic controls had relatively rapid ACW and solid GE. Future studies will identify patients who may benefit from this novel approach to treatment. (ClinicalTrials.gov Identifier: NCT01919021, NCT00944593)

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Predictors of operative time on multivariate analysis**

<table>
<thead>
<tr>
<th>Factor</th>
<th>OR</th>
<th>p value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Type of AC (III, I-II)</td>
<td>16.24</td>
<td>0.002</td>
<td>2.66 99.1</td>
</tr>
<tr>
<td>2. Esophageal diameter (&gt;6 &lt;6 cm)</td>
<td>2.76</td>
<td>0.012</td>
<td>1.24 6.13</td>
</tr>
<tr>
<td>3. Knife(TT/TTJ)</td>
<td>14.41</td>
<td>0.001</td>
<td>5.68 36.5</td>
</tr>
<tr>
<td>4. Adverse events</td>
<td>0.98</td>
<td>0.849</td>
<td>0.51 1.62</td>
</tr>
<tr>
<td>5. Prior treatment</td>
<td>1.16</td>
<td>0.480</td>
<td>0.75 1.81</td>
</tr>
<tr>
<td>6. Pediatric Achalasia</td>
<td>0.71</td>
<td>0.544</td>
<td>0.23 2.13</td>
</tr>
</tbody>
</table>

**Conclusion:** POEM is equally efficacious and safe in treatment native and prior treated cases. POEM should be considered in treatment failure cases.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Aims & Methods: Our aim was to evaluate the complex interrelationships between EGJ motor abnormalities, linear esophageal motor abnormalities, and esophageal reflux burden in this ongoing multicenter collaboration. Esophageal function studies from patients with persisting reflux symptoms were reviewed from four centers (2 in Europe and US) for this preliminary report. EGJ morphology was categorized using HRM into hypotensive (EGJ-CI < 40 mmHg cm), hiatus hernia (HH, manometric separation between lower esophageal sphincter and crural diaphragm) and intact EGJ (normotensive EGJ-CI, no HH). Esophageal body motor metrics were characterized using Chicago Classification v.3.0 into intact, ineffective esophageal motility (IEM) and absent contractility. Total and supine AET were extracted from ambulatory pH-impedance studies. Baseline impedance was calculated at the 5 cm impedance channel (to correspond to AET) at three stable 10-min time periods (1, 2, and 3 AM) during the ambulatory pH-impedance study, and averaged to yield MNBI (normal >2292 ohms). Univariate and multivariate analyses were performed to assess EGJ and esophageal body predictors of esophageal reflux burden, and to discern the value of MNBI in comparison to AET.

Results: 1244 patients (53.4 ± 0.4 yr, 59.6% F) undergoing esophageal motor testing using HRM (Medtronic, Duluth, GA) and ambulatory pH or pH-impedance monitoring studies performed off antacid therapy were included. A hypotensive EGJ was noted in 70.9%, HH in 34.0%, IEM in 26.3% and absent contractility in 3.5%. A disrupted EGJ and absent contractility had the highest proportions with AET > 6%; combinations thereof raised the proportions even higher (Table, p < 0.001 for each comparison to intact EGJ and/or esophageal body). Compared to an intact EGJ, the odds ratio (OR) of total AET > 6% with HH was 2.0 (95% CI 1.1-3.9, p = 0.04). Supine AET > 2% was even more impacted (HH: OR 2.4, 95% CI 1.3-4.5, p = 0.007; HH + hypotensive EGJ: OR 3.3, 95% CI 2.1-5.2, p < 0.001). A hypotensive EGJ was not discriminative of AET or MNBI values. Concordance between AET and MNBI thresholds was noted in 401 of 596 studies (67.2%; both abnormal in 24.8%, both normal in 42.4%). When concordant and abnormal, proportions with AET > 6% were 7.0% (n = 342), increasing numbers of ineffective swallows (p = 0.043) were independent linear predictors. Only the presence of HH was an independent categorical predictor of abnormal MNBI (p < 0.0001), increasing HH size (p < 0.0001) and proportions of ineffective swallows (p < 0.0001) were independent linear predictors.

Proportions with abnormal reflux burden in relationship to EGJ and esophageal body motor findings on high resolution manometry

<table>
<thead>
<tr>
<th>AET &gt; 6% AET &lt; 6%</th>
<th>AET &gt; 6% MNBI &gt; 2292</th>
<th>AET &gt; 6% MNBI &gt; 2292</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 431</td>
<td>n = 642</td>
<td>n = 596</td>
</tr>
<tr>
<td>Hypotensive EGJ (n = 280)</td>
<td>25.7%</td>
<td>60.7%</td>
</tr>
<tr>
<td>Hypotensive EGJ (n = 862)</td>
<td>36.5%</td>
<td>49.2%</td>
</tr>
<tr>
<td>Intact EGJ (n = 422)</td>
<td>49.0%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Both (n = 342)</td>
<td>49.4%</td>
<td>34.8%</td>
</tr>
<tr>
<td>Intact esophageal body motor findings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact esophageal body (n = 686)</td>
<td>31.0%</td>
<td>56.9%</td>
</tr>
<tr>
<td>IEM (n = 326)</td>
<td>41.4%</td>
<td>44.8%</td>
</tr>
<tr>
<td>Absent contractility (n = 43)</td>
<td>53.5%</td>
<td>39.5%</td>
</tr>
<tr>
<td>Combined EGJ &amp; esophageal body motor findings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact EGJ and body (n = 170)</td>
<td>25.3%</td>
<td>61.2%</td>
</tr>
<tr>
<td>Absent contractility (n = 7)</td>
<td>71.4%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>
| *p < 0.05 compared to intact EGJ and/or esophageal body function **p < 0.05 compared to AET > 6% EGJ: esophagogastric junction; AET: acid exposure time; MNBI: mean nocturnal baseline impedance; IEM: ineffective esophageal motility, HH: hiatus hernia

Conclusion: A disrupted EGJ and IEM on esophageal HRM are independent predictors of elevated esophageal reflux burden. Hierarchical HRM evaluation of esophageal body motor findings adds confidence to categorization of esophageal reflux burden.

Disclosure of Interest: S. Roman: consulting fees: Medtronic research support; speaker bureau for Medtronic, Inc; Consultant for Torax, Ironwood, Quintiles; Speaker bureau for Allergan
All other authors have declared no conflicts of interest.

References

P0520 MEASURING THE ACTIVE AND PASSIVE CHARACTERISTICS OF CONTRACTILE SMOOTH MUSCLE IN PORCINE INTESTINE MODEL

G. Min1, W. Kim1, S. Cho1, I. K. Yoo2, S. H. Kim1, J. M. Lee1, H. S. Choi1, E. S. Kim1, B. Keun3, H. S. Lee1, H. J. Chun1, C. D. Kim1, Y. T. Jeen2
1Division Of Gastroenterology And Hepatology, Department Of Internal Medicine, Korea University Anam Hospital, Seoul/Korea, Republic of Korea
2Division of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University College of Medicine, Seoul/Korea, Republic of Korea
3Department Of Internal Medicine, Institute of Digestive Disease and Nutrition, Korea University College of Medicine, Seoul/Korea, Republic of Korea

Introduction: Electrical stimulation therapy is a new way to treat digestive disorders such as constipation, colonic inertia. It is necessary to understand the physiology of smooth muscle contraction in developing novel medical devices related to electrical stimulation therapy. The aims of this study were to measure the active characteristics of smooth muscle with acetylcholine in porcine intestine segment.

Methods: We used five female pigs and obtained ten centimeters of each porcine small intestine. To measure passive characteristics of small intestine, a universal testing machine with a tensile rate of 30 mm/min. To estimate the active characteristic parameters of smooth muscle and isometric and isotonic intestinal motility of smooth muscle, muscle contraction was induced by applying the stimulation solution (HTK solution containing 1 mM of acetylcholine chloride).

Results: The maximum muscle contractile force of the specimens to measure the isometric and isotonic intestinal motility.

Conclusion: We straighten out the active and passive property of porcine intestinal smooth muscle. Our study may be helpful for developing novel medical devices and understanding the physiology of smooth muscle in the porcine small intestine.

Disclosure of Interest: All authors have declared no conflict of interest.

P0521 MOTILITY PATTERNS AFTER PER-ORAL ENDOSCOPIC MYOTOMY (POEM) IN PATIENTS WITH ACHALASIA

Z. Vackova1, J. Krajcova1, L. Zdhrbova2, P. Loudova2, P. Sirand1, T. Hual1, J. Spicak1, J. Martinek2
1Department Of Hepato-gastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
2Department Of Internal Medicine, University Hospital Plzen, Plzen/Czech Republic

Introduction: Partial recovery of esophageal peristalsis has been reported in up to 70% of achalasia patients treated by myotomy (either peroral endoscopic myotomy (POEM) or laparoscopic Heller’s myotomy) in several rather small studies. The aim of our study was to assess motility patterns following possible ‘‘recovery’’ of esophageal peristalsis in a large cohort of patients after POEM.

Aims & Methods: We performed a retrospective analysis of prospectively collected data of patients undergoing POEM at our tertiary referral center. All patients in whom high-resolution manometry (HRM) studies were performed prior to and 3 months after POEM and who completed at least 6-month follow-up were included. All HRM studies were reviewed and the Chicago Classification (CC) v3.0 of motility disorders was applied to characterize both pre- and post-POEM motility patterns.

Results: From 192 patients who underwent POEM since 2012 until 2017, 58 patients met the established criteria. The initial CC diagnoses before POEM were as follows: type I achalasia – 20 pts (16%); type II achalasia – 100 pts (79%); type III achalasia – 5 pts (4%); other (esophago-gastric junction outflow obstruction (EGJOO) and Jackhammer) – 2 pts (1%). Only 6 patients (5%; type III achalasia – 2 pts, EGJOO had had some signs of esophageal contractility before POEM). After POEM, peristaltic fragments were present in 28/127 patients (22%) - 9x ineffective esophageal motility, 5x fragmented peristalsis, 2x distal esophageal spasm, 5x EGJOO; 7x type III achalasia. Thus, the partial ‘‘recovery’’ of esophageal peristalsis was observed in 22/121 patients (18%) and it only occurred in patients with type II achalasia; contractile activity was not detected in any patient with type I achalasia after POEM (22/100 vs. 0/20, p = 0.023). Panesophageal pressurization completely resolved in 88 patients (88%) with...
achalasia type II. The mean integrated-relaxation pressure (IRP) decreased from 27 (±13) mmHg to 13 (±5) mmHg (p < 0.0001). The presence of partial peristaltic recovery was neither associated with normalization of IRP (IRP normalized in 17/28 (61%) patients with peristaltic recovery and in 72/99 (73%) patients without, p = 0.25), nor with overall treatment success of POEM (Eckardt score <5).

Conclusion: In this so far largest case-series investigating the rate of peristaltic recovery after POEM this was present in 18% of patients, therefore, the rate may be lower than previously reported. Peristaltic recovery seems to have no clinical impact on post-POEM symptomatology. Esophageal contractility after POEM was not observed in any patient with achalasia type I.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Roman S et al. Partial recovery of peristalsis after myotomy for achalasia; more the rule than the exception. JAMA Surg; 2013;148(2):157–64

P0525 WHAT IS THE EFFECT OF MYOTOMY SITE ON PER-ORAL ENDOSCOPIC MYOTOMY? COMPARISON OF ANTERIOR AND POSTERIOR MYOTOMY

F. Aslan1, Z. Akpinar2, D. A. Yurtulu3, C. Celik2, B. Usula4, S. Bor5
1Gastroenterology, Koc University School of Medicine, Istanbul/Turkey
2Research & Training Hospital, Izmir/Turkey
3Ege University Medical School, Izmir/Turkey

Contact E-mail Address: drfatihaslan@hotmail.com

Introduction: Medical treatments, endoscopic balloon dilatation, Botox and Heller myotomy are treatment modalities for managing achalasia. Recently peroral endoscopic myotomy (POEM) has become a new option for achalasia patients and since 2010 it has become widespread. Earlier, anterior myotomy was used in this technique but in the last few years there are studies reporting that posterior myotomy is more effective. However, there are limited numbers of publications comparing anterior and posterior myotomy. This study aimed to investigate the effect of myotomy site on POEM, to our knowledge it is the first time in Europe and our country.

Aims & Methods: Between May 2014 and January 2017, POEM was performed to 225 achalasia patients at the gastroenterology clinics under general anesthesia by an endoscopist experienced at endoscopic submucosal dissection and trained for POEM. Demographic data, previous history for balloon dilatation and results of the procedure were recorded prospectively. Patients with anterior myotomy were grouped as "group A" and those with posterior myotomy as "group P", and the results were compared.

Demographic features and results of POEM procedures

<table>
<thead>
<tr>
<th></th>
<th>Group Anterior N = 114</th>
<th>Group Posterior N = 111</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (Male/Female), n</td>
<td>56/58</td>
<td>38/53</td>
<td>0.639</td>
</tr>
<tr>
<td>Age mean (SD)</td>
<td>41.05 ± 14.80</td>
<td>42.24 ± 13.52</td>
<td>0.905</td>
</tr>
<tr>
<td>Tunnel length, mean (SD)</td>
<td>17.07 ± 2.63</td>
<td>17.32 ± 2.49</td>
<td>0.278</td>
</tr>
<tr>
<td>Myotomy length, mean</td>
<td>13.79 ± 2.46</td>
<td>14.04 ± 2.44</td>
<td>0.235</td>
</tr>
<tr>
<td>Procedure Time, mean (SD)</td>
<td>58.63 ± 21.47</td>
<td>64.58 ± 13.49</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Tunnel time, mean (SD)</td>
<td>34.60 ± 14.67</td>
<td>27.02 ± 9.74</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Dysphagia Score</td>
<td>3.3–4.0</td>
<td>3.3–4.0</td>
<td></td>
</tr>
<tr>
<td>Eckardt Score</td>
<td>6.6–12</td>
<td>8.5–12</td>
<td>0.176</td>
</tr>
</tbody>
</table>

(continued)

Results: There were 114 patients in group A, 111 patients in group P. There was no statistical difference between the groups in regards of tunnel length, myotomy length, tunnel entrance time and frequency of homeostatic forces use (p > 0.05). However duration of opening the tunnel, myotomy, closure of the tunnel and total procedure time were significantly shorter in group P (p < 0.05). Eckardt and dysphagia scores before the procedure were similar in both groups. After the procedure the Eckardt scores were significantly low in all patients (p < 0.000). Demographic features and data of the procedures are shown in the table below. Mucosal damage during the procedure occurred in 3 patients and capnoperitonium developed in 71 patients. All complications were treated endoscopically. Controls at 3 months revealed esophagitis grade A in 24, grade B in 6 and grade C in 3 patients.

Conclusion: According to our results posterior approach can shorten the procedure time in POEM compared to anterior myotomy. This may be due to a better angle of approach with endoscopic equipments for posterior myotomy. We believe that long-term results will also show the effects of myotomy site on clinical outcome of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0526 LONG-TERM RESULTS OF PEROORAL ENDOSCOPIC MYOTOMY (POEM) FOR ACHALASIA

Z. Rabekova1, Z. Vackova1, V. Lanska3, J. Spicka1, P. Strnad1, T. Hcul1, E. Kieslichova3, J. Martinek1
1Department Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic, Prague/Czech Republic
2Institute for Clinical and Experimental Medicine, Prague/Czech Republic
3Anesthesiology And Resuscitation, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

Contact E-mail Address: zuzana.rabekova@iikem.cz

Introduction: Peroral endoscopic myotomy (POEM) has gained trust by proven safety and short-term efficacy and at present, it is considered to be a standard method for treatment of esophageal achalasia. However, long-term data concerning the efficacy and safety especially with regard to post-POEM reflux are still awaited.

Aims & Methods: The aim of this prospective single-center case series was to assess the long-term clinical outcome of POEM with emphasis on post-POEM reflux evaluated by pH monitoring, endoscopy findings, reflux symptoms and use of proton pump inhibitors (PPIs). Since 2012, a total of 192 patients with achalasia underwent 202 POEM procedures. Follow-up visits at 3, 12, 24 and 36 months were completed in 166, 116, 70 and 27 patients. Upper GI endoscopy, high-resolution manometry (HRM) and 24-hour pH monitoring were performed 3 months after POEM, endoscopy was then repeated between 24-36 months. Main outcomes were treatment success defined as Eckardt score <3, recurrence rate and post-POEM reflux.

Results: At 3, 12, 24 and 36 months, treatment success was achieved in 97% (95% CI: 94–100), 95% (CI 91–99), 88% (CI 82–95) and 81% (CI 69–93) of patients. A total of 14 patients experienced treatment failure (n = 5) or recurrence (n = 9). The recurrences occurred most often in patients with HRM type I achalasia (4 out of 5, 15.4%) followed by type II (3 out of 113, 2.6%) vs. none in type III achalasia (0 out of 10, 0%); p = 0.022. At 3 months, reflux esophagitis was diagnosed in 63/160 patients (39.4%); severe esophagitis LA C or D in 8 patients. Abnormal acid exposure on pH-metry studies was detected in 58/146 (39.7%). At 24-36 months, endoscopy was performed in 41 patients and reflux esophagitis was present in 9 patients (21.9%; none of the patients has been treated with PPIs). At 3 and 24 M, a proton pump inhibitor was administered to 33.5% and 31.4% of patients.

Conclusion: POEM is effective treatment modality for achalasia with treatment success around 90% at 2 years, slightly dropping down to 81% at 3 years. Generally mild reflux esophagitis and abnormal esophageal acid exposure are diagnosed in about 40% of patients 3 months after POEM but are successfully manageable with proton pump inhibitors. Occurrence of reflux esophagitis tends to decrease with time.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0524 BEER EFFECTS ON POSTPRANDIAL DIGESTIVE SYMPTOMS AND GASTROESOPHAGEAL PHYSIOLOGY

B. Serrano1, M. Megia Sanchez, A. Ruiz De Leon, E. Rey2
1Gastroenterology Department, Hospital Clinico San Carlos, Madrid/Spain
2Introduction: Beer has been related to gastroesophageal reflux (GER) and dyspepsia (1, 2), based on its alcohol and gas content. Main objective was to evaluate if moderate regular and non-alcohol beer consumption is related to postprandial

Contact E-mail Address: blan.serrano.falcon@gmail.com

Introduction: Beer was introduced to gastroesophageal reflux (GER) and dyspepsia (1, 2), based on its alcohol and gas content. Main objective was to evaluate if moderate regular and non-alcohol beer consumption is related to postprandial
dyspeptic symptoms after a controlled meal. Secondary objectives were to evaluate its relation with postprandial GER and gastric accommodation and to evaluate its relation with daily digestive symptoms under real conditions.

**Aims & Methods:** Healthy people over 18 years old, free of frequent digestive symptoms (<once a week) and GER disease (GERD), were included. Basal symptoms were assessed through PAGI-SYM (3) and QOLRAD (4) questionnaires, both validated to Spanish. Study was divided in two substudies based on the study intervention: 33 cl of regular beer (substudy 1) and the same amount of non-alcohol beer (substudy 2). Mineral water (33 cl) was the control intervention in both substudies. Each participant was its own control. The study lasted two weeks (control study week and intervention study week). Each week started with a visit to the laboratory at 7:30 h am, when a pH impedance catheter was placed and taken off 24 hours later. Gastric accommodation was assessed through the maximum tolerated volume during a nutrient drink test (ENSURE®/HN, 500 ml) in a rhythm of 15 ml/minutes, after the ingestion of beer (intervention) or water (control). It was defined as the volume after which the test finished or the participant reported the maximum panning for any dyspeptic symptoms (early satiety, bloating, epigastric pain and nausea), which were asked every 5 minutes (1 meant no symptom and 5 meant the highest perception). GER was evaluated in the postprandial period and during 24 hours through pHimpedance regist. Weekly symptoms evaluation was made though a diary adapted from PAGI-SYM questionnaire and sum of symptoms was used for analysis. Data were collected daily through email. Variables were compared between both visits and weeks in both substudies using a non-parametric test for matching data. Participants should drink 33 cl of beer before lunch and dinner during the intervention week. Other alcohol drinks were prohibited during the study.

**Results:** Ten participants were enrolled in substudy 1, mean aged 24 years old (SD 4, 1 (18–32)); 80% were men. Twenty participants were enrolled in substudy 2, mean aged 23.4 years (SD 5.5 (20–38)); 65% were men. No significant differences were detected in the increase of symptoms during the nutrient drink test between control and intervention visits in both substudies (table 1). Maximum tolerated volume did not show any difference between visits in both substudies. Reflux episodes after nutrient drink test and reflux episodes registered in 24 hours did not show significant differences between control and study visits. The sum of weekly symptoms did not show any difference between control and study visits in both substudies (table 1). Maximum tolerated volume did not show any difference between visits in both substudies.

**Conclusion:** Moderate beer consumption (regular and non-alcohol beer) does not cause an increase of dyspeptic symptoms and reflux in healthy people. It has been shown in a controlled situation (nutrient drink test and pH impedance register) as well as real life (diary weekly symptoms). Gastric accommodation and reflux episodes have either shown to be affected by moderate beer consumption.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Table 1**

<table>
<thead>
<tr>
<th>BEER CONSUMPTION AND DYSPEPTIC SYMPTOMS</th>
<th>SUBSTUDY 1 (Regular beer)</th>
<th>SUBSTUDY 2 (Non alcohol beer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean increment of dyspeptic symptoms compared to Min 5 (0.1)</td>
<td>Control visit (Mean)</td>
<td>Intervention visit (Mean)</td>
</tr>
<tr>
<td>Min 5- Min 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Min 10- Min 0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Min 15- Min 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Min 20- Min 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Min 25- Min 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Min 30- Min 0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Min 33- Min 0</td>
<td>0</td>
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</table>

**P0536**

**DUODENAL PATHOLOGY IN PATIENTS WITH RUMINATION SYNDROME: EOSINOPHILIA AND INTRAEPITHELIAL LYMPHOCYTOSIS**


1. *Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States of America*
2. *University of Newcastle Faculty of Health PVC Office, Callaghan/Australia*
3. *School Of Medicine And Public Health, The University of Newcastle, Australia, Callaghan/Australia/NW*

**Contact E-mail Address:** halland.magnus@mayo.edu

**Introduction:** Rumination syndrome is a functional gastrointestinal disorder characterized by effortless, post-prandial regurgitation of food. In addition to regurgitation, a large proportion of patients report functional dyspepsia (FD) symptoms including post-prandial discomfort, early satiety and nausea. Recently, duodenal eosinophilia has been described both in adult and pediatric patients with FD. Because of the significant symptomatic overlap between FD and rumination syndrome we hypothesized that histological changes similar to those described in FD might also be present among patients with rumination syndrome.

**Aims & Methods:** We therefore aimed to assess histology of duodenal biopsies from patients with rumination syndrome and compared these to healthy controls. Rumination syndrome was diagnosed with post-prandial esophageal high resolution impedance manometry (HRIM) and/or fulfilled ROME II/III criteria. This study was approved by the Institutional Review Board. We included persons aged 18 and above with a diagnosis of rumination syndrome in whom we had also obtained 4-6 duodenal biopsies from diagnostic upper endoscopy. Normal controls were aged 18 and above without any gastrointestinal symptoms in whom 4-6 duodenal biopsies were obtained for research purposes. Cases and controls with a personal history of an eosinophilic disorder, gastric or esophageal surgery, recent (within 30 days) intake of NSAIDS and pregnant or lactating females were excluded. Duodenal biopsies were obtained using routine technique. Residual sections were fixed in formalin, stained with H&E and scanned to digital images (Aperio). The pathologist, blinded to the case-control status, analyzed de-identified digital images of the biopsy specimens and assessed for eosinophil counts/mm² in sections. Individual sections were also assessed for the presence of Brunner’s glands (BG) and intraepithelial lymphocyte counts (IEL)/100 enterocytes. This was done in order to distinguish the first part of the duodenum with BG from the second part, generally without BG, (D2) and intraepithelial lymphocyte counts (IEL)100 enterocytes.

**Results:** Patients with rumination syndrome (22) had a mean age of 39.2 years (range 19–71) and 77% were female. Controls (10) had a mean age of 34.3 (range 19–69) and 90% were female. The mean eosinophil counts/biopsy fragment in rumination syndrome compared to controls have not previously been described. To our knowledge, histopathological changes among patients with rumination syndrome have not been described. To our knowledge, histopathological changes among patients with rumination syndrome have not been described.

**Conclusion:** These findings demonstrate that patients with rumination syndrome have duodenal eosinophilia and increased IEL counts compared to healthy controls. To our knowledge, histopathological changes among patients with rumination syndrome have not previously been described. There is limited evidence that the pathological basis of rumination syndrome warrants further enquiry.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0527 CHRONIC POSTSTROKE OROPHARYNGEAL DYSPHAGIA IS ASSOCIATED WITH IMPAIRED CORtical ACTIVATION TO PHARYNGAL SENSORY INPUTS**

O. Ortega1, C. Cabib1, N. Vilaridel1, L. Mundel1, P. Clavé2, L. Roefes3

1GI Physiology Laboratory, Hospital de Mataró, Consorci Sanitari del Maresme, Mataró/Spain
2Centro De Investigación Biomédica En Red De Enfermedades Hepáticas Y Digestivas., Instituto de Salud Carlos III, Barcelona/Spain

**Contact E-mail Address:** oortega@csdm.com

**Introduction:** The role of afferent sensory pathways in the pathophysiology of post-stroke oropharyngeal dysphagia (OD) is not known [1]. We hypothesized that chronic post-stroke patients with OD (PSD) would show impaired sensory cortical activation in the affected hemisphere.

**Aims & Methods:** We studied 28 chronic unilateral post-stroke patients (17 PSD and 11 nondonphagic [PSnD]) and 11 age-matched healthy volunteers (HV).

Functional dysphagia was used to assess event-related sensory evoked potentials to pharyngeal stimulation (pSEP) and sensory thresholds with a naso-pharyngeal catheter with two electrodes passed through the nostrils 14–15 cm until the pharynx (Galectec Ltd, Dunvegan, Scotland) [2]. We analyzed pSEP peak-latency and amplitude (N1, P2, N2-P2) and neurotographic space characteristics from brain MRI.

**Results:** HV presented a highly symmetric bi-hemispheric cortical pattern of brain activation at centro-parietal areas (N1-P1, N2-P2) to pharyngeal stimuli. In contrast, an asymmetric pattern of reduced ipsilesional activation was found in PSD (N2-P2; p = 0.026) but not in PSnD. PSD presented impaired safety of swallow (Penetration-Aspiration score: 4.3 ± 1.6) and delayed laryngeal vestibule closure (360 ± 70 ms), and higher NIHSS (7.0 ± 6.2 vs. 1.9 ± 1.4, p = 0.001) and Fazekas scores (3.0 ± 1.4 vs. 2.0 ± 1.1, p = 0.05) than PSnD. pSEP showed a unilateral delay at stroke site exclusively for PSD (peak-latency inter-hemispheric difference vs. PSnD: N1, 6.5 ± 6.7 vs. 1.1 ± 1.0 ms; N2, 32.0 ± 15.8 vs. 4.5 ± 4.9 ms, p = 0.05).

**Conclusion:** Chronic post-stroke OD is associated with stroke severity and degree of leukoaraiosis. Impaired conduction and cortical integration of pharyngeal sensory inputs at stroke site is a key feature of chronic PSD. These findings highlight the role of sensory pathways in the pathophysiology of post-stroke OD and offer a potential target for future treatments.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**


**P0529 RELEVANCE OF SLEEP DISTURBANCE TO FUNCTIONAL GASTROINTESTINAL SYMPTOMS, CLINICAL CHARACTERISTICS, AND PSYCHOLOGICAL DISTRESS**

W. Lei1, C. Chen1, S. Wen2, C. Yi1, T. Liu1, J. Hung1

1Department Of Medicine, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation and Tzu Chi University, Hualien/Taiwan
2Department Of Public Health, College of Medicine, Tzu Chi University, Hualien/Taiwan

**Contact E-mail Address:** aquaticour@seed.net.tw

**Introduction:** Reduced sleep quality has been linked to gastrointestinal reflux disease (GERD) and functional gastrointestinal disorders. It is unknown whether GERD, functional dysphagia (FD) and irritable bowel syndrome (IBS) are more prevalent in subjects with significant sleep disturbance (SD) than those without SD.

**Aims & Methods:** The aim of the study was to investigate gastrointestinal symptoms, clinical characteristics, and psychological factors in subjects with and without SD in a general population undergoing health checkups. We enrolled 2752 consecutive subjects who received upper gastrointestinal endoscopy and colonoscopy during their health checkups. All participants underwent an evaluation with questionnaires including Reflux Disease Questionnaire score, Pittsburgh Sleep Quality Index (PSQI), Taiwanese Depression Questionnaire, and State-Trait Anxiety Inventory before receiving endoscopic exam. Demographic characteristics and biochemical data were also recorded. FD and IBS were based on Rome III diagnostic criteria, and metabolic syndrome was defined by the National Cholesterol Education Program Adult Treatment Panel III definition.

Sleep disturbance was confirmed when PSQI score was greater than 5. We compared the clinical and psychological factors between subjects with and without sleep disturbance.

**Results:** Among the study population (n = 2674), 956 (36%) individuals had SD. SD subjects had more female gender, older age, lower level of education, higher systolic blood pressure, higher serum high-density lipoprotein levels, and higher prevalence of FD and IBS than those without SD. In addition, SD patients also had more depression, more anxiety, more severe GERD symptoms, and higher prevalence of non-erosive reflux disease (NERD) (p < 0.001). Multivariate analysis revealed that female sex (OR = 1.75, p < 0.001), older age (OR = 1.03, p < 0.001), more severe GERD symptoms (OR = 1.03, p < 0.033), NERD (OR = 1.63, p = 0.023), IBS (OR = 1.48, p = 0.05), and depression (OR = 1.16, p < 0.001) were positive predictive factors for SD, whereas higher level of education (OR = 0.57, p = 0.001) was negative predictive factor for SD.

**Conclusion:** Our study demonstrates that SD is associated with female sex, older age, lower education level, greater GERD symptom burden, greater depression, and higher prevalence of NERD and IBS. Future studies will be needed to clarify the relationship between functional gastrointestinal diseases and sleep disorders.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**


Table 1 Continued

<table>
<thead>
<tr>
<th>Symptom Factor</th>
<th>Odds ratio</th>
<th>95% Confidence interval</th>
<th>R² value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication for acid/heartburn</td>
<td>11.427</td>
<td>8.602–15.179</td>
<td></td>
</tr>
<tr>
<td>Gastroduodenal disorder</td>
<td>2.789</td>
<td>2.049–3.798</td>
<td></td>
</tr>
<tr>
<td>Bowel disorder</td>
<td>2.165</td>
<td>1.632–2.872</td>
<td></td>
</tr>
<tr>
<td>Diet rich in pasta</td>
<td>1.113</td>
<td>1.026–1.206</td>
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</tr>
<tr>
<td>Dysphagia</td>
<td></td>
<td></td>
<td>0.242</td>
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<tr>
<td>Age</td>
<td>0.990</td>
<td>0.980–1.000</td>
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</tr>
<tr>
<td>Medication for diarrhea</td>
<td>1.882</td>
<td>1.100–3.221</td>
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<tr>
<td>Medication for acid/heartburn</td>
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<td>1.007–2.106</td>
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<tr>
<td>Gastroduodenal disorder</td>
<td>4.368</td>
<td>3.146–6.065</td>
<td></td>
</tr>
<tr>
<td>Anorectal disorder</td>
<td>1.585</td>
<td>1.072–2.343</td>
<td></td>
</tr>
<tr>
<td>Diet rich in rice</td>
<td>1.097</td>
<td>1.006–1.196</td>
<td></td>
</tr>
</tbody>
</table>

Variables with a p-value of 0.1 or less in univariate analysis were entered into a multivariate analysis (logistic regression) in order to identify factors independently associated with esophageal symptoms (up to 33 variables).

Introduction: Esophageal symptoms compatible with a functional esophageal disorder are common in the Western population. Age and presence of other GI and non-GI symptoms are associated with reporting esophageal symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0532 THE ASSOCIATION BETWEEN ATOPIC MANIFESTATIONS AND EOSINOPHILIC ESOPHAGITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

A. J. Lucendo Villarin,1 J. González-Cervera,2 Á. Arias3
1Dept. Of Gastroenterology, Hospital General de Tomelloso, Tomelloso/Spain
2Gastroenterology, Hospital San Pedro de Alcántara, Cáceres/Cáceres
Contact E-mail Address: ajlucendo@hotmail.com

Introduction: Eosinophilic esophagitis (EoE) affects children and young adults and has rapidly grown over the past decade, especially in developed countries. Presently, it represents the second leading cause of chronic esophagitis after gastroesophageal reflux disease (GERD) and the main cause of dysphagia in children and young adults. EoE affects health-related quality of life (HRQoL). Data on determinant factors and the influence of dietary interventions are scarce.

Aims & Methods: In this study we aimed (1) to determine for the first time the health-related QoL in a representative sample of Spanish adults with EoE, and (2) to identify determinants of impaired HRQoL, including the effect of dietary restrictions. Multicentre observational, cross-sectional study in eight Spanish centers attending adult EoE patients throughout several Spanish Regions. A validated Spanish version of the self-administered Adult Eosinophilic Esophagitis Quality of Life (EoE-QoL-A) questionnaire was used, as well as a survey of demographic and clinical data. Multiple linear regression was used to identify and quantify determinant factors of HRQoL.

Disclosure of Interest: All authors have declared no conflicts of interest.
Several studies have provided information on the prevalence of different atopic conditions in adult EoE patients compared to different groups of control subjects. The findings indicate that, overall, EoE patients show a higher frequency of asthma, rhinoconjunctivitis, eczema, and food allergies than control groups; however, definitions for the associated atopic conditions have not been defined and the selection process for the controls has not been such that they can be considered universally representative of the general population without EoE. These two limitations have hampered researchers in their efforts to clearly assess the magnitude of the association between atopy and EoE. Therefore, a systematic review and meta-analysis in order to evaluate the presence of atopic diatheses in patients with EoE as well as to summarize the prevalence of atopic conditions in both paediatric and adult EoE patients in comparison with the non-EoE control populations is required.

Aims & Methods: A highly sensitive search strategy was designed to identify and retrieve all documents dealing with the relationship between atopy and EoE in children and adults. This systematic literature search was performed independently (AA and AJL) and completed by March 2016. The search was not restricted with regard to the language of publication. A predetermined protocol was used in accordance with the quality standards for reporting meta-analyses of observational studies in epidemiology. Four reviewers (GG-C, AA, MM-CM, and AJL) independently extracted relevant information from each eligible study using a standardized data extraction sheet and then proceeded to cross-check the results. Estimates for the prevalence of each atopic manifestation in EoE patients and controls were summarized with the aid of a fixed- or random-effects meta-analysis, depending on intra-study heterogeneity, weighted for inverse variance following the method elaborated by DerSimonian and Laird. Summary estimates, including 95% confidence intervals (CI), were calculated for each season and month, whenever possible.

Results: Of the 2946 references identified, data was collected from 21 studies including a total of 33,542 EoE patients and 54,759 controls. The criteria for defining a diagnosis of atopy in either EoE patients or controls were not structurally considered in most of the studies. The frequency or prevalence of the different atopic manifestations among EoE patients was compared with that observed in several types of control populations, including series of patients with systemic eosinophilic disease (GORD patients), patients and, habitually, their first degree relatives, all of whom were endoscopically assessed with a diagnosis of EoE specifically ruled out. In all cases, EoE was considered as independent from GORD and other upper GI tract diseases. Some studies included database-registered subjects as a control group. The criteria for defining a diagnosis of atopy among EoE patients and control subjects varied widely across the different studies, from self-reported/parent-reported atopic background to strict allergist/immunologist-provided diagnoses. Overall, allergic rhinitis was significantly more common among patients compared to controls (OR 5.00; 95% CI: 3.27, 9.53; I² = 86%). As bronchial asthma (OR 3.06 (95% CI: 2.01, 4.66; I² = 83.4%) and eczema (OR 2.86; 95% CI: 1.88, 4.36; I² = 57.2%) were also assessed. No significant publication bias was found for studies dealing with allergic rhinitis and eczema in EoE.

Finally, our search uncovered two papers that reported on the frequency of drug allergy in EoE patients compared to controls, showing no significant differences between these two populations (OR = 0.981; 95% CI: 0.07, 14.72).

Conclusion: The present study shows that an accurate diagnosis of atopy is lacking in most of the research evaluating the prevalence of asthma, rhinitis, and eczema among EoE patients. Still, the prevalence of these three conditions seems to be significantly higher in children and adults with EoE as compared to control subjects. The comparison of the general population with other research documents and use standard definitions of allergic rhinitis, asthma (including its severity and level of control), skin allergy, and food allergy (rather than mere sensitivity) when assessing and documenting concurrent allergic diseases in patients with EoE.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Plasma FP PK Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AM Fast Geometric</th>
<th>AM Fed Geometric</th>
<th>Mean (CV%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cmax (pg/mL)</td>
<td>31.1 (103.6)</td>
<td>34.2 (102.3)</td>
<td>23.8 (111.9)</td>
</tr>
<tr>
<td>Tmax (h)</td>
<td>1.00 (2.00–30.00)</td>
<td>5.00 (1.00–10.00)</td>
<td>14.00 (2.00–20.00)</td>
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<tr>
<td>AUCinf (pg·h/mL)</td>
<td>366.607 (115.8)</td>
<td>361.277 (105.5)</td>
<td>539.145 (100.5)</td>
</tr>
<tr>
<td>AUC0-t (pg·h/mL)</td>
<td>1044.308 (90.1)</td>
<td>587.890 (107.2)</td>
<td>726.451 (100.2)</td>
</tr>
</tbody>
</table>

CV% = percentage coefficient of variation. *Median and range are presented.

Disclosure of Interest: G. M. Comer: Dr. Gail M. Comer is a paid consultant for Adare Pharmaceuticals, Inc.
B.A. Meltzer: Dr. Brian A. Meltzer is an employee of Adare Pharmaceuticals, Inc.

P0534 A PHASE I STUDY TO ASSESS THE PHARMACOKINETICS, SAFETY, AND TOLERABILITY OF SINGLE DOSE APT-101 ADMINISTERED UNDER FED OR FASTED CONDITIONS OR AT BEDTIME IN A RANDOMISED THREE-WAY, CROSSOVER DESIGN

G. M. Comer, B. A. Meltzer
Adare Pharmaceuticals, Inc., Lawrenceville/United States of America

Contact E-mail Address: brian.meltzer@adarepharma.com

Introduction: APT-101 is an orally disintegrating tablet (ODT) formulation of fluoro-phenoxyl acetate that provides a novel approach for the treatment of eosinophilic esophagitis (EoE).

Aims & Methods: A randomised, single-dose, three-way, crossover study was conducted in healthy volunteers to compare the pharmacokinetics (PK), safety, and tolerability of APT-101 when administered under fed, fasted conditions or at bedtime (HS). Participants were administered 6 mg APT-101 following these three different administration schedules, with a 7-day washout separating the three periods. Serial plasma samples for FP PK were collected at 14 to 72 hours following administration. Noncompartmental and statistical analyses were performed for PK parameters.

Results: A total of 24 participants enrolled and 22 (92%) completed the study. A summary of the PK parameters by test group is presented in Table 1. AM dosing was associated with a higher rate of absorption under fed compared to fasted conditions. Following a high fat meal, there was a higher peak concentration (Cmax) ratio [90% CI (confidence interval)] = 120.65% [99.84%–145.79%] and a faster time to peak concentration compared to the fasted state (Tmax fed = 5.00 h, fast = 10.00 h). However, lower total exposure in the fed compared to the fasted state (AUC_0–inf ratio [90% CI] = 76.7% [67.64%–87.59%]) was observed. HS dosing was found to slow the rate of absorption compared to AM dosing conditions. Specifically, the peak time concentration with HS dosing (Tmax = 14 h) was lower than with AM dosing (Tmax = 10 h, fed = 5.0 h). HS dosing was associated with higher overall exposure (AUC_0–Cmax ratio [90% CI] = 122.36% [107.02%–139.88%]) and lower Cmax (Cmax ratio [90% CI] = 67.79% [56.29%–81.64%]) versus the fed dosing regimen. Compared to the fasted regimen, HS dosing yielded lower overall exposure (AUC_0–Cmax ratio [90% CI] = 87.00% [75.24%–100.59%]) and lower Cmax (Cmax ratio [90% CI] = 81.78% [76.93%–94.87%]). Across all dosing regimens, the Cmax of FP with APT-101 ranged from 5.97–200 pg/mL. Seven subjects (29%) reported 12 treatment-emergent adverse events over the course of the study; all events were of low severity. No serious adverse events or deaths were reported.

Conclusion: APT-101 was safe and well-tolerated when administered under AM fasted, AM fed, or HS conditions to healthy subjects. While there was faster absorption of APT-101 under fed conditions and slower absorption at bedtime, overall, HS dosing was associated with higher exposure compared to AM dosing conditions. Slower absorption with HS dosing suggests a potential for longer dwell times in the esophagus; the relationship of HS dosing with histological efficacy in both the proximal and distal portions of the esophagus will be explored in future studies of APT-101 in EoE.
to steroids (64% vs 36%; p = 0.002). Specifically, the presence of strictures indicated a more likely clinical response to steroids compared to PPI alone. (p = 0.007).

Conclusion: A higher eos/hpf was found in patients with chronic EE features at index endoscopy than those with normal or acute endoscopic signs. In those with normal or acute EE changes and without dysphagia as a presenting complaint, a clinical response was noted with PPI therapy alone. In those with chronic EE changes or with dysphagia/FBO, steroids appear to be the preferred therapeutic option, although at 3 months follow up a clinical response might precede a histological one.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0536 ESOMEPRAZOLE, RABEPR AZOLE AND PANTOPRAZOLE ARE EQUALLY EFFECTIVE IN INDUCING ENDOSCOPIC AND HISTOLOGIC REMISSION IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE ESOPHAGEAL EOSINOPHILIA

M. Della Coletta1, S. Tolone2, N. De Bortoli3, O. Bartolo4, G. Bodini5, E. Marabotto6, P. Zentilin7, A. Mauro8, R. Penagini9, V. Savarino10, E. Savarino1
1Division Of Gastroenterology, Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
2Surgery, Second University of Naples, Naples/Italy
3Division Of Gastroenterology, Department Of Internal Medicine, University of Pisa, Pisa/Italy
4Dept. Of Gastroenterology, University of Padova, Padova/Italy
5Department Of Internal Medicine, IRCCS San Martino DIMI, Genova/Italy
6University of Genoa, Genova, Genoa/Italy
7Dept. Of Internal Medicine, University of Genova, Genova/Italy
8Gastroenterology And Endoscopy Unit, University of Milan, Milan/Italy
9Dipartimento Di Scienze Mediche, Università degli Studi di Milano Dip. di Gastroenterologia, Milan/Italy
10Dept Internal Medicine, Università di Genova, Genova/Italy

Contact E-mail Address: edoardo.savarino@unipd.it

Introduction: Proton Pump Inhibitor-response esophageal eosinophilia (PPI-REE) is an emerging condition characterized by a constellation of clinical, endoscopic, and histopathologic features in the setting of eosinophilic inflammation on esophageal biopsies responding to a course of proton pump inhibitor (PPI) therapy. A recent meta-analysis explored the role of different PPIs in inducing clinical and histologic remission in patients with esophageal eosinophilia without observing significant differences among them due to several limitations (i.e. limited number of studies using each PPI drug, small sample size, and heterogeneity among the various studies).

Aims & Methods: We aimed to prospectively compare the effect of different PPIs in inducing endoscopic and histologic remission in patients with PPI-REE. Consecutive patients with symptoms suggestive of EE underwent upper endoscopy to assess the presence of at least 15 eos/hpf on esophageal biopsies at mid/proximal esophagus and, then, were treated with twice-daily PPI for at least 8 weeks. Patients were assigned to receive esomprazole 20 mg bid, rabeprazole 20 mg bid or pantoprazole 40 mg bid in a 1:1:1 ratio. Thereafter, patients repeated upper endoscopy and PPI-REE was identified in case of less than 15 eos/hpf and a 50% decrease from baseline. Endoscopic, according to Endoscopic Reference Score (EREFS), and histologic features were blindly reviewed for each patient treatment group.

Results: Twenty-eight patients [23M/5F; mean age 35] reporting dysphagia (93%), bulus impaction (68%) and chest pain (25%) were diagnosed with PPI-REE. According to treatment allocation, 8 (29%) patients received esomprazole, 9 (32%) rabeprazole and 11 (39%) pantoprazole. At baseline, demographic and clinical data, including age, sex, BMI, H. pylori infection, concomitant allergy conditions and latency from diagnosis were similar (p > 0.05).

Disclosure of Interest: All authors have declared no conflicts of interest.

P0537 THE « GARD (GASTRO-ESOPHAGEAL ANTI-REFLUX DEVICE) »: A NEW ENDOSCOPIC MEDICAL DEVICE TO DIAGNOSE, MANAGE AND TREAT GERD

N. Godin
Private Practice, Geneva/Switzerland

Contact E-mail Address: dr.godin68@gmail.com

Introduction: The « GARD » (Gastroesophageal Anti-Reflux Device) is an anti-reflux tubular valve placed in the lower esophagus under endoscopic control allowing normal ingestion of food and beverages but blocking all gastro-esophageal refluxate mechanically (fluid, solids and gas).

Aims & Methods: The « GARD » has an upper ring sized to the diameter of the patient’s esophagus with an accessory called the « calibration device » placed through the 2.8 mm working channel of a standard gastroscope. The GARD is held in place by pressure. The upper ring holds an anti-reflux thin-walled tubular valve moulded in one piece under the ring. After placement of a standard guide-wire, the « GARD » is placed through the patient’s mouth and is released in the lower esophagus. The procedure is performed under sedation on an ambulatory basis in about 15 minutes when experienced. The « GARD » was placed in the esophagus of 8 pigs during 7 days to evaluate placement, feeding, weight gain, absence of migration as well as removal. Deployment of the « GARD » was easy, there was no migration in the stomach and removal of the GARD with the developed accessories was easily achieved. Pigs have a strong lower esophageal sphincter and have no reflux so gastro-esophageal reflux could not be evaluated. In a human volunteer with very severe gastro-esophageal reflux who had previously failed anti-reflux surgery and had an unsatisfactory response to clinical and pH metric measurement under 80 mg of esomeprazole, the « GARD » was placed preoperatively. Hereafter are this patient’s pH metric results without and with « GARD » as compared to PPI alone.

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Eos = eosinophils *Calculated for an HPF area = 0.24 mm²

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Private Practice, Geneva/Switzerland

Contact E-mail Address: dr.godin68@gmail.com

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P0538 SYMPTOM PATTERNS AND TYPES OF GASTROESOPHALGEAL REFUXES SIGNIFICANTLY DIFFER IN GROUPS OF EROSION ESOPHAGITIS AND NON-EROSSIVE FORM OF GASTROESOPHALGEAL REFLUX DISEASE (GERD) PATIENTS

M. Konovalova, S. Morozov, V. Isakov
Gastroenterology And Hepatology, Federal Research Center of Nutrition and Biotechnology, Moscow/Russian Federation

Contact E-mail Address: sunnyisiter@mail.ru

Introduction: Patients with gastroesophageal reflux disease (GERD) demonstrate a range of different symptoms (esophageal and extraesophageal) however the relationship between symptoms and types of reflux was not evaluated.

Aims & Methods: The aim of the study was to assess the relationship between GERD patients’ symptoms with characteristics of refluxes obtained by 24-h esophageal pH-impedance. One hundred fifty eight GERD patients (68 men, 89 women, age (M ± S) 42 ± 4.8 yrs and 49 controls (22 men, 27 women, age (M ± S) 46 ± 6.7 yrs) were examined using 24-hours esophageal pH-impedance recordings (Omehga, MMS, the Netherlands; 24-hpH-impedance channels catheters, UnisensorAG, USA) and validated GERD-Q questionnaire. According to baseline endoscopy 91 patients were classified as non-erosive reflux disease (NERD) and 67 as erosive reflux disease (ERD) patients. Patients’ symptoms were classified according to Montreal classification.

Results: Extraesophageal symptoms as well as weak acid gastroesophageal refluxes were found significantly more often in patients with NERD compared to ERD group (table 1). However higher number of acid refluxes, higher GERD-Q score and DeMeester score were present in ERD. The total number of gastro-esophageal refluxes didn’t differ between ERD and NERD groups of patients.

Table 1: Results of the study

<table>
<thead>
<tr>
<th>Controls (n = 49)</th>
<th>NERD (n = 91)</th>
<th>ERD (n = 67)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of refluxes/day, n</td>
<td>17 ± 1.3</td>
<td>55 ± 3.07*</td>
<td>55 ± 4.7*</td>
</tr>
<tr>
<td>Number of acid refluxes/day, n</td>
<td>6 ± 0.1</td>
<td>27 ± 2.2*</td>
<td>33 ± 3.7*</td>
</tr>
<tr>
<td>Number of weak acid refluxes/day, n</td>
<td>7 ± 0.93</td>
<td>22 ± 2.4*</td>
<td>15 ± 2.3*</td>
</tr>
<tr>
<td>Number of high gastro-esophageal refluxes/day, n</td>
<td>2 ± 0.47</td>
<td>15 ± 1.4*</td>
<td>12 ± 2.2*</td>
</tr>
<tr>
<td>DeMeester score</td>
<td>3.16 ± 1.73</td>
<td>13.3 ± 2.0*</td>
<td>26.92 ± 0.2*</td>
</tr>
<tr>
<td>GERD-Q score</td>
<td>5 ± 0.31*</td>
<td>10 ± 0.24*</td>
<td>13.1 ± 0.25*</td>
</tr>
<tr>
<td>Extraesophageal symptoms (cough, laryngitis, etc.) presence, % in group)</td>
<td>0</td>
<td>61.9*</td>
<td>31.3*</td>
</tr>
</tbody>
</table>

Conclusion: ERD and NERD groups of patients are characterized by different symptom patterns and types of gastroesophageal refluxes registered with 24-hours esophageal pH-impedance monitoring. These findings could reflect differences in pathogenesis and clinical manifestations of mentioned forms of GERD. Disclosure of Interest: All authors have declared no conflicts of interest.

P0539 LARYNGEAL DISORDERS AND CHRONIC COUGH IN ADULTS WITH AND WITHOUT EROSIOS ESOPHAGITIS: A CASE-CONTROL STUDY IN ALBANIA

R. Kraja, I. Kiliçi, I. Mone, F. Kraja, S. Përll, G. Burazeri
1University Clinic of Gastrohepatology, University Hospital Center Mother Teresa, Tirana/Albania
2Endoscopy Unit, Service of Surgery, Regional Hospital Durres, Durres/Albania
3Department of Laboratory, University Hospital Center Mother Teresa, Tirana/Albania
4University Clinic of Gastroenterology, University Hospital Center Mother Teresa, Tirana/Albania
5University of Tirana/Albania
6University of British Columbia, Vancouver/Canada

Contact E-mail Address: bledarkrajat@yahoo.com

Introduction: Several clinical-based studies from Western countries have investigated the prevalence of extra-esophageal symptoms in various degrees of reflux erosive esophagitis. However, the independent factors related to the development extra-esophageal manifestations remain unclear.

Aims & Methods: Our aim was to assess the prevalence of extra-esophageal symptoms (laryngeal disorders and chronic cough) in adults with (cases) and those without (controls) erosive esophagitis in Albania, a developing Southeast European country. A case-control study was conducted at the Regional Hospital of Durres, the second main district in Albania, a transitional country in South Eastern Europe, including 158 patients with erosive esophagitis (aged 49.5 ± 16.3 years) and 273 controls (aged 46.4 ± 16.0 years; response rate: 70%) enrolled during the period January 2013 – June 2014. Both cases and controls underwent upper endoscopy. Information on socio-demographic characteristics and lifestyle factors was also collected. Binary logistic regression analysis was carried out to assess the association of erosive esophagitis and extra-esophageal symptoms.

Results: Patients with erosive esophagitis had a higher prevalence of excessive alcohol consumption, smoking, sedentarity and obesity compared to their control counterparts (9% vs. 5%, 70% vs. 49%, 31% vs. 17% and 22% vs. 9%, respectively). The prevalence of hiatal hernia was higher in cases than in controls (21% vs. 8%, respectively), whereas the prevalence of gastric-duodenal ulcer was similar in both groups (13% vs. 14%, respectively). Upon adjustment for all sociodemographic characteristics and lifestyle/behavioral factors, there was evidence of a strong association of erosive esophagitis with chronic cough (OR = 3.1, 95%CI = 1.7–5.7), and even more so with laryngeal disorders (OR = 4.4, 95%CI = 2.6–7.4). In all models, the association of erosive esophagitis with extra-esophageal symptoms was strong and maintained after adjusting for the symptoms separately (fully-adjusted model: OR = 4.6, 95%CI = 2.9–7.3).

Conclusion: Our findings indicate that the prevalence of extra-esophageal symptoms is higher among patients with erosive esophagitis in a transitional country characterized conventionally by the employment of a Mediterranean diet. Therefore, the upper endoscopy should be part of the evaluation in patients with suspected reflux-related chronic cough and laryngeal disorders. Disclosure of Interest: All authors have declared no conflicts of interest.

P0540 ASSESSMENT OF EXHALED BREATH CONDENSATE FOR NON-INVASIVE DIAGNOSIS OF GASTROESOPHALGEAL REFUX DISEASE IN CORRELATION WITH MII-PH AND PEPTEST

1Internal Gastroenterology Clinic, FN Brno, Brno/Czech Republic
2Internal Gastroenterology Department, FN Brno, Brno/Czech Republic
3Department Of Pulmonary Diseases And Tuberculosis, FN Brno, Brno/Czech Republic
4Department Of Bioanalytical Instrumentation, CEITEC Masaryk University, Brno/Czech Republic

Contact E-mail Address: stefankoncny@gmail.com

Introduction: Gastroesophageal reflux disease (GERD) is a disease caused by backflow of gastric contents into the esophagus due to the failure of physiological antireflux mechanisms and can lead to erosive esophageal and extraesophageal symptoms (cough, laryngitis, globus pharyngis, pharyngitis, rhinosinusitis, otitis media, bronchial asthma, COPD, sleep apnea and noncardiac chest pain). Currently there is no suitable, non-invasive diagnostic method applicable for GERD in clinical practice. Exhaled breath condensate (EBC) and saliva are two easily accessible samples that could be used in monitoring patients’ condition and from extraesophageal symptoms of GERD. The aim of this study was to compare the pH and total ionic profile of EBC with 24-hour multichannel intraluminal impedance and pH monitoring (MII-PH) and salivary PepTest in a group of patients with gastroesophageal reflux (pH < 4) and controls.

Aims & Methods: A portable EBC sampler was used for collection of EBC. 10 µL sample aliquots of EBC were analyzed. For pH measurement, the CO2 from EBC was mixed with N2 gas for 10 min. Each of pH 4.1±0.2 and 8.8±0.1 was set up with a pH microelectrode and total ionic profile (ammonium, cations, organic acids - NH4+, K+, Ca+, Na+, Mg2+, Cl−, NO3−, NO2−, SO4−, acetate, lactate, propionate, butyrate) was analyzed by capillary electrophoresis in each sample. Saliva was collected using the commercial PepTest sampling containers, applied to the PepTest lateral flow devices and analyzed using the device reader. The data from EBC were compared with MII-PH and PepTest. In total the study comprised of 39 participants. The patients were divided by dominant findings from MII-PH in to groups with acid reflux (n = 17), weakly acid reflux (n = 8) and without reflux (n = 14).

Results: The values of pH (after CO2 removal with N2) were significantly higher in the group with acid reflux (p < 0.01), (mean pH 7.13, interquartile ranges 6.83–7.47) and in the group with weak acid reflux (p < 0.01) (7.37, (7.18–7.57)) vs. healthy controls (6.8, (6.65–6.99)). Butyric acid (BA) was the second most significant parameter that was significantly elevated (p < 0.01) in both patient groups (acid reflux- mean BA 2.29 µM, weakly acid reflux- mean BA 3.33 µM) compared to healthy subjects (mean BA 0.69 µM).

Further statistically significant differences were found in chloride (Cl−), nitrate (NO3−) and sodium (Na+) ions concentration. CI was elevated (p < 0.01) in group with acidic reflux vs. healthy controls and NO3 and Na+ were elevated in both groups with weak acid reflux vs. healthy controls. Peaks for saliva sampling and pepsin analysis showed no statistically significant differences within the groups. In the groups of patients with acid reflux, the incidence of high pepsin concentration (above 75 ng/ml) was found only in 50% of the patients.

Conclusion: We found statistically significant differences in pH and selected ions from EBC between different groups of patients and healthy controls. The analysis of selected parameters in EBC could provide a fast and non-invasive diagnostic method for GERD patients with EER symptoms in the future. This can
Results: refluxes or abnormal AET; b) Group B: subjects with increased episodes of non-acid weakly acidic refluxate). Patients were then divided in three groups according to 24 hours) and the number as well as the characteristics of reflux episodes (acidic/

Aims & Methods: showed that intermediate values of G17, between very low to normal levels, (G17) has been proposed as a non-invasive marker of GERD, due to the negative

K 40 5 27 1 4 0 61 2 12 4 59 43 2
J 21 6 10 2 0 0 79 3 7 5 79 58 2
I 196 21 33 3 12 5 45 7 50 4 256 118 2
H 196 21 33 3 12 5 45 7 50 4 256 118 2
G 152 28 55 5 7 2 9 3 8 7 145 103 3
F 44 5 15 1 7 1 5 1 10 6 268 43 1
E 28 23 13 12 2 0 8 7 9 7 145 103 3
D 112 32 48 4 12 11 382 32 32 8 93 73 2
C 40 22 13 10 8 4 36 10 7 7 134 101 3
B 23 29 69 4 1 66 28 12 21 126 27 1
A 255 72 89 66 94 5 252 5 90 32 138 29 1

Table 1: Demographic and baseline characteristics for the 4 groups.

Contact E-mail Address: rahulshah@hotmail.com

Introduction: As a treatment for gastro esophageal reflux disease (GERD), proton pump inhibitors (PPIs) are the mainstay of medical therapy. Laparoscopic fundoplication is generally advised when symptoms are poorly controlled with PPIs and is regarded as a gold standard of treatment, with excellent control in the short- and midterm. Long-term results, however, remain equivocal. Following on from the principles of surgical fundoplication, a variety of endoscopic procedures for GERD have been proposed to achieve a non-surgical control. This procedure, Stretta has been proposed as less invasive options.

Aims & Methods: We recruited all patients who had GERD refractory to standard medical therapy to see whether anti reflux mucosectomy prevents acid reflux into the esophagus. We screened all GERD patients who were refractory to proton pump inhibitors, hydrogen 2 receptor blockers and alginates and had an endoscopy suggestive of a lax cardia with mucosal flap valve grading of 1 to 3. We performed a baseline screening endoscopy to rule out a hiatus hernia and to exclude helicobacter infection. A GERDQ questionnaire was filled by all the patients indicative of severity of reflux All patients had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probe (Sandhill scientific) on therapy to demonstrate significant acid reflux. Only patients with mucosal flap valve grading 1, 2 or 3 were selected for anti reflux mucosectomy.

Results: Technique: Crescentic ARMS of the esophagogastric junctional (EGJ) mucosa was conducted with the standardized technique of endoscopic mucosal resection (EMR) of at least 3 cm length in the stomach, with the length of mucosal resection at the cardia measured in retroflexion from the gastric side. ARMS was conducted along the lesser curve of the stomach, thus preserving a sharp mucosal valve at gastric cardia. All the patients who underwent ARMS had a significant decrease in the DeMeester score, with predominant decrease in the mucosal resected by 7/12 patients were able to discontinue all the medical therapy, PPI dose reduction was possible in the other patients with a mean reduction of 50%, alginates were stopped in all patients and H2RA were also discontinued.

Conclusion: Results suggest a potential anti-reflux effect of ARMS. The mechanism is presumed to be due to scar formation after healing of the mucosal defect. On the gastric side, this induces narrowing of the gastric cardia opening, while preserving and/or re-creating a robust his angle. After ARMS, the lesser curve of the gastric cardia takes on an almost "mechanically-stitched" appearance. The mucosal flap is rebuilt and looks well-defined. Furthermore, the lesser curve side?
A randomised, double-blind, placebo-controlled, multicentre 26-week study on the effects of dexlansoprazole and esomeprazole on bone homeostasis in healthy postmenopausal women

K. E. Hansen1, J. W. Nieves2, S. Nudurupati3, D. C. Metz2, M. C. Perez2
1School Of Public Health, University Of Wisconsin, Madison, Madison/United States of America
2Mailman School Of Public Health, Columbia University, New York/United States of America
3Medical Affairs, Takeda Development Center Americas, Inc, Deerfield/United States of America/IL

Reference


A phase III placebo-controlled trial

M. Choi1, Y. K. Choi2, Y. Baek3, P. Rheé4, S.G. Kim5, H. Jung5, S.Y. Seol6
1Dept. Of Internal Medicine, The Catholic University of Korea, Seoul/Korea, Republic of
2Korea University College of Medicine, Seoul/Korea, Republic of
3Dept. Of Internal Medicine, Sanggyeukwan University School of Medicine, Seoul/Korea, Republic of
4Internal Medicine, Seoul National University, Seoul/Korea, Republic of
5Asan Medical Center, Ulsan University, Seoul/Korea, Republic of
6Inje University College of Medicine, Busan/Korea, Republic of

Contact E-mail Address: choim@catholic.ac.kr

Introduction: S-isomer (S) pantoprazole is more bioavailable and less dependent on cytochrome CYP19 than is racemic pantoprazole.

Aims & Methods: We aimed to evaluate the efficacy and safety of 10 mg S-pantoprazole for treatment of non-erosive reflux esophagitis (NERD). This study was designed as a multicenter, randomized, double-blind, placebo controlled trial. NERD was defined as reflux symptoms and normal endoscopy findings. Patients were allocated to take either 10 mg S-pantoprazole or placebo once daily for 4 weeks, after which reflux symptoms were reassessed. Recurrence of symptoms was assessed at 4 weeks after cessation of medication. The efficacy endpoints were complete relief of symptoms, improvement of reflux symptoms, and safety.

Results: Eighty-eight patients randomly assigned to the pantoprazole group (52 males, 43.7 years old) and 86 to the placebo group (42 males, 43 years old), and 163 patients were subjected to a per protocol analysis. A higher proportion of patients in the S-pantoprazole group had complete symptom relief (31.8% vs. 14.0%, P < 0.001). Improvement of symptoms of heartburn, acid regurgitation and epigastric discomfort were also significant. The factors associated with poor symptom responsiveness to PPI were older age, female sex, greater body mass index and symptom severity in both groups.

Conclusion: S-pantoprazole (10 mg) was more efficacious than placebo in providing reflux symptom relief in patients with NERD, especially acid regurgitation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0545 EFFICACY OF S-PANTOPRAZOLE 10 MG IN THE SYMPTOM CONTROL OF NONEROUS REFLEX DISEASE: A PHASE III PLACEBO-CONTROLLED TRIAL

P0543 A RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED, MULTICENTRE 26-WEEK STUDY ON THE EFFECTS OF DEXLANSOPRAZOLE AND ESOMEPRAZOLE ON BONE HOMEOSTASIS IN HEALTHY POSTMENOPAUSAL WOMEN

K. E. Hansen1, J. W. Nieves2, S. Nudurupati3, D. C. Metz2, M. C. Perez2
1School Of Public Health, University Of Wisconsin, Madison, Madison/United States of America
2Mailman School Of Public Health, Columbia University, New York/United States of America
3Medical Affairs, Takeda Development Center Americas, Inc, Deerfield/United States of America/IL

Contact E-mail Address: maria.perez@takeda.com

Introduction: Observational and epidemiologic data have suggested an association between proton pump inhibitor (PPI) use and osteoporotic fractures. To evaluate potential mechanisms for this association, we measured bone turnover, the stomach from the lower esophageal sphincter, but not the neutralization of postprandial acid contents of the esophagus, in two parts of the stomach and the different types of gastroesophageal reflux (acid, low acid, alkaline, liquid, gas & mixed) was estimated. To evaluate the effects of ral-rafting alginicate on the severity of postprandial reflux in patients with GERD and for the postprandial stomach content.

Results: Monitoring with alginicate showed significantly (P < 0.05) less number of acid [average values 5.42 ± 0.69 (M ± m) vs. 3.33 ± 0.43 during 1st postprandial hour and 3.96 ± 0.8 vs. 1.82 ± 0.57 during 2nd postprandial hour] and gas [0.26 ± 0.06 vs. 0.08 ± 0.05 during 1st postprandial hour and 0.47 ± 0.35 vs. 0.00 during 2nd postprandial hour] gastroesophageal reflux, but increased of number low acid reflux [2.52 ± 0.46 vs. 3.91 ± 0.82 during 1st postprandial hour; 0.00 ± 0.42 vs. 2.16 ± 0.45 during 2nd postprandial hour; P < 0.05]. Also noted is a significant (P < 0.05) increase in the pH in the esophagus for 120 minutes after ingestion [average pH values 6.04 ± 0.27 vs. 4.86 ± 0.23 during 0–60 min., and 5.93 ± 0.25 vs. 4.15 ± 0.26 during 60–120 min.]. In the gastric cardia (a typical place of formation of postprandial acid pocket) showed significantly (P < 0.05) higher values for the first 60 minutes after intake of alginicate [pH 4.3 ± 0.37 vs. 3.04 ± 0.25], during 60-90min, pH values wasn’t significantly (P < 0.05) different [2.75 ± 0.45 vs. 2.43 ± 0.28]. In the stomach body no significant effect of the drug on pH was recorded [average pH values for stomach 2.56 ± 0.46 vs. 2.1 ± 0.18 during 1st postprandial hour and 2.29 ± 0.49 vs. 2.09 ± 0.18 during 2nd postprandial hour; P > 0.05].

Conclusion: Our findings demonstrate that raffting alginicate is an effective means for the prevention of postprandial acid and gas reflux and to reduce the injurious effect of acid in the esophagus. At the same time alginicate showed no effect on stomach content in the postprandial period, it means that the main mechanism of action is through the movement of postprandial acid contents from the lower esophageal sphincter, but not in the neutralization of stomach content, unlike non-rafting antacids and PPIs.

Disclosure of Interest: All authors have declared no conflicts of interest.
Disclosure of Interest: despite PPI therapy. Therefore it should be advised to patients who complain of symptom persistence.

Conclusion: RELEVANCE FOR TUMORIGENESIS

P0547 STW5 MODULATES TIGHT-JUNCTION GENE AND PROTEIN EXPRESSIONS IN REFLUX-INDUCED ESOPHAGITIS - POSSIBLE RELEVANCE FOR TUMORGENESIS

H. Abdel-Aziz1, G. Ulrich-Merzenich2, A. Scherbakova3, O. Kelber1
1Innovation & Development, Steigerwald Arzneimittelwerk GmbH, Bayer Consumer Health, Darmstadt/Germany
2Medical Technical University Clinic Centre, Bonn/Germany
3Yilmaz Technical University, Yoshkar-Ola/Russian Federation

Contact E-mail Address: giuseppelopez@alice.it

Introduction: Refractory non erosive reflux disease (NERD) is defined by absence of clinical response to a 12-week course of proton pump inhibitors (PPI) at full dose in absence of esophagitis. It accounts for about 20% of all NERD cases. 24-hour multichannel intraluminal impedance pH (MII-pH) monitoring should give useful patient-specific information about refractory NERD. Therefore, our aim was to assess whether this technique could be useful to guide a “tailored” therapy to refractory NERD patients.

Aims & Methods: We retrospectively recruited patients undergoing MII-pH monitoring for refractory non erosive reflux disease (NERD). None of the patients had undergone upper endoscopy, and cases of esophagitis were excluded. No patient received PPI during MII-pH monitoring. Subjects were subgrouped into 3 categories according to Zerbib’s classification: i) Acid reflux (exposure to pH < 4 for at least 1.1% of record time), ii) Non acid reflux (symptom association probability to pH > 4 reflux episodes > 95%) and iii) Functional heartburn (no pathologic reflux, with symp- toms association probability < 50%). MII-pH guided therapy was performed as follows: patients with acid reflux received PPI at double dose, patients with non acid reflux PPI at full dose plus alginates and patients with functional heartburn levosulpiride 75 mg/day for 4 weeks. A visual analogue scale (VAS) ranging 0–100 was administered before and after such tailored therapy to evaluate overall symptom improvement. Responders were defined by VAS improvement of at least 50%. Comparisons between continuous variables were performed by ANOVA or paired/unpaired t-test where required, and Fisher’s exact test was applied to categorical variables. Variables with statistical significance p< 0.10 at univariate analysis were then included in a step-by-step multivariate regression analysis, aimed to investigate factors predictive of response to tailored therapy.

Results: Thirty-four patients with refractory NERD were selected (female:male ratio 21:14, mean age 47.4 ± 12.8). Twelve had acid reflux, 7 non acid reflux and 15 had functional heartburn. Overall effectiveness of tailored therapy was 82.3% (28 out of 34), and it did not differ between subgroups (91.7% acid reflux, 71.4% non acid reflux, 80.0% functional heartburn, p = 0.51). At univariate analysis, therapy failure directly correlated with dysphagia (OR = 0.15, p = 0.10) and incidence with sensation of slow digestion (OR = 7.78, p = 0.05). However, at multivariate analysis, these parameters were not statistically significant. We found a mean VAS reduction of 30.2 ± 24.9, which was similar between acid reflux (36.7 ± 22.7), non acid reflux (30.0 ± 27.7) and functional heartburn (47.3 ± 25.7) p = 0.75.

Conclusion: A tailored approach to refractory NERD, guided by MII-pH monitoring, demonstrated to be effective, independently from disease subtype. Therefore it should be advised to patients who complain of symptom persistence despite PPI therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**Aims & Methods:** Homeostasis and stem cell differentiation. In BE, BMP4 is upregulated in columnar stem cells residing in the esophageal mucosa (e.g., in submucosal glands) or multipotent stem cells give rise to the columnar lining. Bone Morphogenetic Proteins (BMPs) are a family of growth factors that control tissue architecture, homeostasis and stem cell differentiation. In BE, BMP4 is upregulated in columnar cells.

**Introduction:** Barrett’s esophagus (BE) is a metabolic abnormality in patients with Gastro-esophageal reflux disease in which the normal stratified squamous epithelium in the esophagus is replaced by columnar epithelium. BE predisposes for the development of columnar epithelium. One underlying mechanism of BE is that columnar stem cells residing in the esophageal mucosa (e.g., in submucosal glands) or multipotent stem cells give rise to the columnar lining. Bone Morphogenetic Proteins (BMPs) are a family of growth factors that control tissue architecture, homeostasis and stem cell differentiation. In BE, BMP4 is upregulated in columnar cells.

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Contact E-mail Address: a.e.pacheco correia@amc.uva.nl


Reference:


P0552 CHARACTERIZING DIPETIDYL PEPTIDASE SPECIFIC ACTIVITY IN HUMAN BARRETT’S ESOPHAGUS AND IN A PANEL OF OESOPHAGEAL METAPLASIA, DYSPLASIA AND CANCER CELL LINES

S. Jaensch1, D. J. Hussey2, D. Watson1, C. A. Abbott3, M. Squire1, R. Yazbeck1
1Surgery, Flinders University, Adelaide/Australia
2Flinders Centre for Innovation in Cancer, Adelaide/Australia
3School Of Biological Science, Flinders University, Adelaide/Australia

Introduction: Barrett’s oesophagus is defined as the replacement of the normal stratified oesophageal squamous epithelium with a multiplicative columnar intestinal-like epithelium. Dipeptidyl peptidase-4 (DPP4) is an integral membrane glycoprotein, which is expressed on the brush border membrane. DPP4 is part of a larger enzyme family that also includes DPP8, DPP9 and fibroblast activation protein (FAP).

Aims & Methods: We aimed to characterise DPP4 enzyme activity in a panel of oesophageal metaplasia, dysplasia and cancer cell lines, and in Barrett’s oesophageal patient biopsies. FLO-1, OE33 and OE19 (oesophageal adenocarcinoma), OE21 and TE7 (oesophageal squamous cell carcinoma), GihTERT, GoihTERT, ChtERT (dysplastic Barrett’s) and QtERT (non-dysplastic Barrett’s) were grown to confluence in T75 flasks using standard cell culture techniques. Oesophageal squamous tissue biopsies were collected from non-Barrett’s patients participating in the Barrett’s screening endoscopy program at Flinders Medical Centre (n = 6). Duodenal and gastric tissue biopsies were also collected as positive and negative control tissue respectively. Membrane and soluble enzyme activity was determined in cell and tissue extracts using colorimetric enzyme assay using the DPP selective substrate H-Gly-Pro-pNA. Sitagliptin (a DPP4 selective inhibitor) and IGF24 (DPP9/8 selective inhibitor) were used to demonstrate specific enzyme activity. Final enzyme activity was expressed as nm pNA released/min/mg protein. Data is expressed as mean ±standard error of the mean.

Results: Relatively high DPP4 activity was detected on the membrane of OE33 (13.92 nm pNA/min/mg protein), GoihTERT (6.93 nm pNA/min/mg protein), GoihTERT (2.635 nm pNA/min/mg protein) and QtERT (1.80 nm pNA/min/ mg protein) compared to all other cell lines, where activity was <1 nm pNA/ min/mg protein. In comparison of 1 nm M5  sitagliptin enzymatic activity in OE33 cells, indicating that membrane enzyme activity was specific to DPP4. Cytoplastic DPP4 activity was highest in FLO-1 (3.77 nm pNA/min/ mg protein) and CtERT (2.39 nm pNA/min/ mg protein). Addition of 1mM sitagliptin did not reduce cytoplastic DPP activity in FLO-1 cells, suggesting the presence of other peptidases. High DPP4 activity was detected in the membrane fraction of duodenal biopsies (45.90 ±8.55 nm pNA/min/mg protein) compared to gastric (3.35 ±1.59 nm pNA/min/mg protein) and oesophageal biopsies (0.65 ±0.71 nm pNA/min/mg protein). In contrast, differential DPP4 activity was detected in the soluble fraction of all duodenal, gastric and oesophageal tissue biopsies. Using IuM sitagliptin, this was found to be specific to DPP4 in oesophageal samples, but likely derived from other peptidases in gastric and duodenal tissue.

Conclusion: Our preliminary studies demonstrated DPP4 activity in Barrett’s metaplasia and dysplasia, which could have potential significance as a biomarker target for the continuum of Barrett’s oesophagus. Human tissue sample collection is ongoing to determine specific DPP enzyme activity and expression in tissue specimens from Barrett’s metaplasia and dysplasia subgroups as compared to normal, non-Barrett’s tissue.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: s.a.mcdonald@qmul.ac.uk

P0554 DIFFERENT GLAND PHENOTYPES ARE CLONALLY RELATED IN BARRETT’S ESOPHAGUS AND GLAND PHENOTYPIC DIVERSITY IS INCREASED IN PATIENTS WHO HAVE PROGRESSED TO DYSPLASIA

J. Evans1, E. Carlotti2, M. Rodriguez-Justo2, S. L. Preston3, N. Wright4, M. Graham1, M. Jansen5, S. A. McDonald6
1Centre For Tumour Biology, Barts Cancer Institute, London/United Kingdom
2Histopathology, University College London, London/United Kingdom
3Gastroenterology, Barts Health NHS Trust, London/United Kingdom
4UCL Cancer Institute, University College London, London/United Kingdom

Introduction: A range of complex glandular phenotypes exist in Barrett’s esophagus (BE), but how these phenotypes are related and evolve is unknown. Genetic diversity is an established risk factor for cancer development in BE, yet as phenotype not genotype is selected for, we cannot determine of cancer progression. Exploiting mutations in the mitochondrial genome (MtDNA) as a marker of clonality we have demonstrated to be clonal and suggests that Barrett’s displays phenotypic as well as genotypic diversity.

Aims & Methods: Biopsies from patients with a new diagnosis or surveillance for BE were obtained at endoscopy and frozen. Immunohistochemistry was performed on frozen sections for proteins including MUC5AC, MUC2, MUC6 and AMY. A panel of antibodies specific to gland phenotypes was used to determine if there was a significant increase in gland phenotype diversity in those biopsies compared to healthy controls. The relative amount of pro-inflammatory and pro-fibrotic cytokines and chemokines was determined by qPCR. qPCR was performed on RNA extracted from archived FFPE tissue samples. Tumour tissue is defined as positive if >1% of cells express MUC5AC, MUC2 or MUC6.

Results: During progression from BE to EAC an increase of CD4+ cells was observed. The number of IL-22+ cells and IL-17A+ cells as well as the number of FOXP3+ cells/mg tissue increased in oesophageal cancer and in its peri-tumoral tissue as compared to healthy controls. The relative amounts of IL-22+ and IL-17A+ cells decreased while an increase of FOXP3+ cells was observed. Also more IL-10+ cells/mg tissue were observed in the tumours. In contrast to the latter finding high IL-10 mRNA expression levels were associated with poor survival in EAC patients. Interestingly, high levels of mRNA expression levels of IL-10 in the non-malignant peritumoral tissue also correlated with poor survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: j.evans@clver.uer.unity

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as genotypic evolution. Patients with dysplasia also show a significant increase in gland phenotype diversity (Shannon) per biopsy in adjacent to dysplasia glands compared with patients who do not have dysplasia.

**Conclusion:** BE is phenotypically diverse with a range of glandular phenotypes that are clonally related. An increase in phenotypic diversity may be a potential biomarker for dysplasia which patients will be more likely to progress from BE to cancer with implications for diagnostic and surveillance policy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0555 A DEDICATED BARRETT’S OESOPHAGUS ENDOSCOPY LIST IMPROVES THE ACCURACY OF ENDOSCOPIC REPORTING AND QUALITY OF BIOPSYs**

H. Al-Hasani, T. Sharp, S.M. Ha, L. Matsuoka, N. Siddique Gastroenterology, Queen Elizabeth the Queen Mother Hospital, Margate/United Kingdom

**Contact E-mail Address:** hamahallahs@gmail.com

**Introduction:** The importance of skilled endoscopic assessment of Barrett’s oesophagus (BO) has been clearly established and forms part of the British Society of Gastroenterology guidelines. Use of Prague classification when reporting on areas of BO improves standardisation, and adherence to the Seattle biopsy protocol (quadrant biopsies every 2 cm) when sampling Barrett’s mucosa is thought to improve dysplasia detection. In East Kent Hospitals NHS Foundation Trust we have created a dedicated nurse-led BO surveillance endoscopy list with the aim of improving compliance with guidelines and the quality of biopsies taken. Here we present a retrospective observational study of patients who underwent upper GI endoscopy on a general endoscopy (GE) list compared with the dedicated BO endoscopy (DBO) list.

**Aims & Methods:** We searched our endoscopy software for patients who had had an endoscopy documented as having BO who had an endoscopy on a GE list from 2012–2013. The same search was performed for patients who were scoped on the DBO list from 2014–2016. Endoscopy reports were reviewed to assess the use of Prague classification and determine numbers of biopsies taken. Biopsy results were recorded on our electronic pathology database.

**Results:** One hundred procedures for BO surveillance on GE lists were audited, comprising 65% male patients with median age 68 years; 60% were performed by a consultant gastroenterologist and the remainder were performed by other operational medical gastroenterology registrars. Of the 105 procedures on the DBO lists, 63% of patients were male, median age 70 years. Prague classification was used in 94% of endoscopy reports on the DBO lists compared with 5% on the GE lists. The Seattle biopsy protocol was observed in 70% on the DBO lists as opposed to 30/100 (30%) on the GE lists. Dysplasia detection rate (low grade, high grade or indefinite) appeared to be more influenced by the endoscopy operator since all of the dysplasia detected on GE lists was identified by consultant gastroenterologists. We therefore recommend that all Barrett’s oesophagus patients have their surveillance endoscopies performed on dedicated BO endoscopy lists.

**Conclusion:** Our comparison shows that observance of Prague classification is significantly higher on the DBO lists when compared with GE lists (94% vs 5%), and this compliance with the Seattle biopsy protocol is similarly higher (74% vs 30%). These are indicators of higher quality endoscopic surveillance on DBO lists. However, this did not translate to a different dysplasia detection rate which appeared to be more influenced by the endoscopy operator since all of the dysplasia detected on GE lists was identified by consultant gastroenterologists. We therefore recommend that all Barrett’s oesophagus patients have their surveillance endoscopies performed on dedicated BO endoscopy lists.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0556 ADHERENCE TO QUALITY INDICATORS AND SURVEILLANCE GUIDELINES IN THE MANAGEMENT OF BARRETT’S OESOPHAGUS: A RETROSPECTIVE ANALYSIS**

D. Westerveld1, V. Khullar2, M. B. Riverso2, Y. Perbtani2, M. Agarwal1, J. SURVEILLANCE GUIDELINES IN THE MANAGEMENT OF P0556 ADHERENCE TO QUALITY INDICATORS AND adherence to surveillance guidelines for non-dysplastic BE (NDBE). standardized classification (Prague Criteria) and a systematic four-quadrant management of Barrett’s esophagus (BE) promotes high-quality cost-effective care.

**Conclusion:** Adherence to quality indicators and surveillance guidelines in the management of Barrett’s esophagus (BE) promotes high-quality cost-effective care.

**Aims & Methods:** The aims of this study were to evaluate (1) adherence to standardized classification (Prague Criteria) and a systematic four-quadrant biopsy protocol, (2) identify predictors of practice patterns, and (3) to assess adherence to surveillance guidelines for non-dysplastic BE (NDBE).

This was a Single-center retrospective study of endoscopies (EGDs) performed for BE between June 2008 to December 2015. Data on patient demographics, procedure characteristics and histology results were obtained from a prospectively collected endoscopy database and chart review. Adherence to the use of Prague Criteria and systematic biopsy protocol were assessed based on operative report documentation. Guideline adherent surveillance EGD was defined as those performed within 6 months of the recommended 3-5 year interval. Uni- and multivariate analysis were performed to identify predictors of practice patterns.

**Results:** A total of 397 patients (66.5% male; mean age 60.1 ± 12.5 years) had an index EGD during the study period. Adherence to the use of Prague Criteria and systematic biopsies were 27.4% and 24.1%, respectively. Endoscopists who performed systematic interventions for BE were more likely to use the Prague Criteria (OR: 3.16; 95%CI: 1.47–6.82) than those who did not. Longer time in practice (in years) was positively associated with adherence to Prague Criteria (OR 1.07; 95% CI: 1.02–1.12; p < 0.001) but with a lower likelihood of performing systematic biopsies (OR: 0.91; 95%CI: 0.85–0.97; p < 0.001). Nearly 41% of patients with NDBE (11/27) underwent surveillance EGD sooner (range 1–24 months) than the recommended interval.

**Conclusion:** Adherence to quality indicators and surveillance guidelines in BE is low. One key characteristic, including experience with endoscopic therapy for BE and time in practice predicted adherence to the use of Prague Criteria and systematic biopsies. Future efforts are needed to reduce variability in practice and promote high-value care.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0557 EXPRESSION OF TGF-B AND CD-44 IN AGE SPECIFIC SUBGROUP OF PATIENTS WITH ADENOCARCINOMA OF GASTRIC CARCINIA**

N. Lukavetsky, T. Fetschy Oncology Department, Lvis Medical University, Lvis/Ukraine

**Contact E-mail Address:** lukavetsky@ukr.net

**Introduction:** Adenocarcinoma near the esophagogastric junction is one of the most lethal GI malignancies known. Surgical treatment of these cancers stay determinative factors of patient survival. Older persons often differ from the younger adult population in terms of biological and functional perspectives; as such, they may have particular needs which require an interdisciplinary approach and intervention, especially when faced with a cancer diagnosis. 

**Aims & Methods:** The aim of this study was to detected expression of TGF-B and CD-44 in age specific subgroup. The expressions of TGF-B and CD-44 were evaluated immunohistochemically in 23 patients with adenocarcinoma of gastric cardia who underwent curative surgery (RO) without any neo/adjuvant therapy. Additionally we analyzed control group of patients with non-cancer lesion or normal tissue of upper digestive tract (13 patients). We divided the patients into two groups. Group A consisted of 13 cancer patients and 7 control patients 65 years of age or older, while Group B consisted of 10 cancer and 6 control patients younger than 65 years of age. The two groups were comparable - there were no differences between the two groups regarding tumor stage.

**Results:** Elderly patients have statistically significant better survival (median 20.2 months) compared with younger patients (median 15.4 months) (p=0.045). The median survival rate of patients without TGF-B and/or CD-44 expression was significantly lower (7 m) than that of patients with positive expression (> 15 m) (p = 0.003). Regardless of patients age, CD-44 was significantly higher in the cancer tissue of elderly patients than in younger (p < 0, 035). But no significant difference was observed in the TGF-B expression between group A and group B cancers tissue (p = 0.005).

**Conclusion:** The biology of tumors may be different in elderly patients, leading to a lower rate of tumor-related mortality.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

1. Bar N, Fliss Isacov2, M. Nisman3, R. Kariv2

2Gastroenterology, Tel Aviv Sourasky Medical Centre, Tel Aviv/Israel

3Gastroenterology and Hepatology, Tel Aviv Medical center, Tel-aviv/Israel

**Contact E-mail Address:** nirbar1@gmail.com

**Introduction:** Barrett’s oesophagus (BO) is considered a premalignant condition for oesophageal adenocarcinoma (OAC). Once diagnosed, interval endoscopic surveillance is recommended to promote early detection of dysplasia and cancer. Occurrence and incidence of dysplasia and cancer among BO vary across populations. Recent studies show BO patients mortality is mainly related to non-oesophageal cancer and cardiovascular morbidity.
Aims & Methods: In this cross-sectional study, our aims were to describe the local BO clinical, endoscopic and histologic profile in our tertiary referral centre, and discover whether the Prague classification and diagnostic requirements are filled. We identified and included all consecutive patients with oesophageal intestinal metaplasia (identified by the presence of goblet cells) from March 2009 to May 2015. All endoscopies and biopsy reports were reviewed: BO segment length, use of the Prague classification, endoscopic abnormalities, treatment modality, and histologic findings of dysplasia. Participants were sent a clinical questionnaire, via which pertinent clinical data including personal and familial cancer history, were collected.

Results: Clinical profiles: Our cohort consists of 406 patients, with a mean age of 60.4 ± 13.3 years, 69% were male. Endoscopic profile: Mean maximal BO length (Prague classification M) was 2.8 ± 1.9 cm (reported in 49.6% of endoscopies) Mean circumferential BO (Prague classification C) was 4.9 ± 3.1 cm (reported in 18.1% of endoscopies). Histologic profile: Low-grade dysplasia (LGD) was seen in 4.4% of patients, high-grade dysplasia (HGD) in 3%, intramucosal carcinoma (IMC) in 0.7%, and OAC in 2%. A subgroup of 250 patients underwent more than one endoscopy, allowing for prospective incidence analysis. They had 914 years of follow-up, with a mean number of endoscopies of 4.7 ± 3. The incidence rates of LGD, HGD, IMC, OAC per 1000 patient years were 20.8, 15.3, 2.2, and 7.6 respectively. One hundred and fifty-five patients returned the questionnaire. In this subgroup analysis, we learned BO was diagnosed at 57.8 ± 12.5 years of age, with a mean duration of 4.9 ± 5.7 years. A personal history of non-oesophageal malignancy was reported in 15.4%. A family history of BO, OAC and non-oesophageal cancer were reported in 5.2%, 4.5%, and 35.4%, respectively.

Conclusion: Compared to the information gathered by Katz et al. (1), we demonstrated a lower rate of LGD, but comparable rates of HGD and OAC. The personal and familial history of non-oesophageal malignancy was higher than the oesophageal malignancy rates. Our findings may support the importance of age appropriate non-oesophageal malignancy screening in BO patients. Physician compliance in reporting BO according to the Prague classification is lacking. Factors associated with our local BO profile as well as the implication of family history requires further prospective studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Disclosure of Interest: to stimulate and monitor the implementation of guidelines in clinical practice.

stating recommendations. Besides initiating more and better studies to facilitate

Conclusion: Adherence to guidelines for the surveillance of BE is far from optimal

were reviewed by a second pathologist. Shorter BE length, an academic practice

ment variation and improve quality of care. Data on the extent to which level

P0561 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION

Results: From a total of 373 studies, 49 were eligible for this meta-analysis. For

mm/s1 ESOUSPHAGUS SQUAMOUS EPITHELIUM IN THE ESOPHAGUS

Introduction: Barrett esophagus (BE) is a premalignant condition for esophageal

The survival curves for ESD and surgery stratified with

K. Yamauchi1, SQUAMOUS CELL CARCINOMA

Contact Email Address: c.roumans@erasmusmc.nl

P0562 ESOPHAGEAL REFUX DISEASE AND ESOPHAGEAL SQUAMOUS CELL CARCINOMA IN PATIENTS WITH FANCONI ANEMIA UNDERGOING ENDOSCOPIC SURVEILLANCE

Disclosure of Interest: stimulate and monitor the implementation of guidelines in clinical practice.

Conclusion: Adherence to guidelines for the surveillance of BE is far from optimal

Investigation: Simultaneous squamous cell carcinoma in the esophagus confined to the muscularis mucosa (MM) or submucosa up to 200 μm (SM1) has a risk of lymph node metastasis, it is defined as relative indication for endoscopic submucosal dissection (ESD) by the Japan esophageal society guideline. Although additional surgical treatment after ESD is recommended, long-term outcomes of ESD compared with surgery has not been clarified.

Aims & Methods: This study aimed to evaluate the long-term outcomes of ESD and pathological criteria of relative indication for endoscopic submucosal dissection (ESD) by the Japan esophageal society guideline. Although additional surgical treatment after ESD is recommended, long-term outcomes of ESD compared with surgery has not been clarified.

Results: Patients with Fanconi anemia (FA) have an increased risk of developing esophageal squamous cell carcinoma. Data regarding endoscopic findings among patients with FA are lacking. Furthermore, there are no clear guidelines for endoscopic surveillance of patients with FA.

Aims & Methods: We aimed to describe the endoscopic findings among subjects with FA undergoing endoscopic surveillance and to determine the interval to development of esophageal cancer.

Results: Eight FA subjects with a median age of 22.2 years at first endoscopy (range16–41) were identified. The median upper endoscopies number per patient was 15 (range 2-14) with a median time of follow-up of 4.5 years (range 1–9 years). All subjects (100%) had an endoscopic evidence of reflux esophagitis: 3 (37.5%) had mild and 5 (62.5%) had moderate-severe reflux esophagitis. Three subjects (37.5%) had complicated esophageal reflux disease (two subjects developed Barrett’s esophagus and one subject had an esophageal stricture). Two subjects (25%) developed esophageal squamous cell carcinoma during follow-up, with interval time of 8 and 18 months from previous upper endoscopy. Both had tumor expression of p16 protein suggesting human papilloma virus (HPV) infection. The calculated standardized incidence ratio (SIR) for the development of esophageal squamous cell carcinoma is 5107.

Conclusion: FA patients are at an increased risk for developing esophageal cancer and reflux esophageal disease with associated complications. Larger, prospective studies are needed to determine the optimal interval for endoscopic screening in these patients.

References


References


United European Gastroenterology Journal 5(5S)
P, vs. controls – 0.002
Ex-drinker 1.4% 5.1% 13.6% 8.3%
Light 30.5% 15.0% 21.4% 8.9%
Never/rare 38.2% 25.1% 7.9% 4.7%
P, vs. controls – 0.037

A cross-sectional cohort (n = 610/432) were used as an historical control.

Results: Between Sep 2005 and May 2010, 330 patients (M/F = 278/52) were registered. The proportions of the different grades of LV were A = 50 (15.2%), B = 174 (52.7%), and C = 106 (32.1%). After adjusting for sex and age, controls and the LV grade was associated with progressively higher proportions of heavy drinkers (8.4%, 24.8%, 26.2%, and 52.5%, respectively, p < 0.0001), frequently strong alcoholic beverages (2.3%, 7.2%, 11.8%, and 11.6%, respectively, p < 0.0001), heavy smokers (34.6%, 38.7%, 65.7%, and 70.8%, respectively, p < 0.0001), liking high-temperature food (46.6%, 19.6%, 20.8%, and 20.7%, respectively, p < 0.0001), not eating green-yellow vegetables almost every day (55.0%, 48.9%, 54.9%, and 71.1%, respectively, p < 0.0001), and not eating fruit almost every day (51.6%, 74.3%, 68.0%, and 75.3%, respectively, p < 0.0001). The risk of grade B and C was strongly associated with the amount of alcohol consumption especially in inactive ALDH2. Odds ratio (OR) of LV grade B associated with heavy drinking was significantly stronger in inactive ALDH2 (OR = 2.73; p < 0.0001) and non-temperance (OR = 2.12; p < 0.0001). OR of LV grade C associated with heavy drinking was significantly stronger in inactive ALDH2 (OR = 358) than active ALDH2 (OR = 138) (p < 0.05).

Conclusion: The development of dysplastic squamous epithelium in the esophagus was associated with the amount of alcohol consumption and genetic trait of inactive ALDH2.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Contact E-mail Address: katada@cancer.or.jp

Introduction: According to the Japanese guidelines for the treatment of esophageal cancer, T1a-EP or T1a-LPM squamous cell carcinoma (SCC) is definitive indication for endoscopic resection (ER) which is therapeutically possible to treat them. T1a-MM or T1b-SM1 is a relative indication of ER, because 10-20% of the cases has metastasis in the previous analysis of operation cases. Recent advances in ER such as endoscopic submucosal dissection (ESD) and steroid injection for the prevention of stricture, provide us increasing opportunity to treat clinical MM/SM1 which means preoperative predicted invasion depth of MM/S1. Currently we treat them with MM without lymphovascular invasion were reported to have very low risk of metastasis and occupy majority part of MM/S1. There is no report about long term outcome of ER for clinical MM/S1.

Aims & Methods: This study aimed to evaluate the clinical outcomes in patients having esophageal SCC with a predicted invasion depth of MM/S1. We retrospectively reviewed 45 patients having esophageal SCC with a predicted invasion depth of MM/S1. We predicted the invasion depth using conventional endoscopy, magnifying endoscopic classification of Japanese esophageal society, and endoscopic ultrasound (EUS). The patients were diagnosed and treated at our institution from 2010 to 2013. We compared the clinical outcomes for the patients having MM/S1 with or without lymphovascular invasion, and recommended CRT or esophagectomy as additional therapy.

Results: The median age was 67 years (range, 39–81 years), including 37 males (82.2%). The most common site of the tumors was the lower esophagus (47.8%), moderate (36.1%), and upper esophagus (16.1%). The tumors were localized in the cervical esophagus (n = 2), upper esophagus (n = 9), mid-esophagus (n = 30), and lower esophagus (n = 4). The number of tumors subclassified as types 0-I, 0-IIa, 0-IIb, and 0-IIc was 0, 7, 1, and 37, respectively. Forty cases were diagnosed as MM/S1 using the Japanese Esophageal Society classification for magnifying endoscopy, and its accuracy was 62.5% (25/40). EUS was performed for 21 patients, and its accuracy was 68.8% (16/23). The patients underwent endoscopic mucosal resection (n = 5) or ESD (n = 40). In pathological diagnosis, LPM invasion was found in 14 patients, MM/S1 invasion in 28 patients, and SM2 invasion in 3 patients. The overall accuracy rate of diagnosing MM/S1 invasion was 62% (28/45). Among patients with MM/S1 invasion, 20 had no lymphovascular invasion, and

SNPs on ADH1B and ALDH2 genotyping, we obtained approximately 1 ml of blood from the patients before the endoscopic examination. Patients were subjected were classified as rare drinkers who consumed <1 units/week, current drinkers who consumed 1 to 8.9 units/week (light drinkers), 9 to 17.9 units/week (moderate drinkers), or ≥18 units/week (heavy drinkers); alcohol consumption (1 unit = 22 g, the ethanol content of one serving of sake). The physicians recommended all subjects to temperate in drinking and smoking. We retrospectively evaluated the risk of metachronous SCC of the oesophagus and the head and neck after ER for SCC of the oesophagus, based on the genetic polymorphisms for ADH1B and ALDH2 and the drinking and smoking histories.

Results: During a median follow-up period of 80 months (range, 24–228 months), a secondary SCC of the oesophagus and the head and neck after ER for SCC of the oesophagus, based on the genetic polymorphisms for ADH1B and ALDH2 and the drinking and smoking histories.

SNPs on ADH1B and ALDH2 genotyping, we obtained approximately 1 ml of blood from the patients before the endoscopic examination. Patients were subjected were classified as rare drinkers who consumed <1 units/week, current drinkers who consumed 1 to 8.9 units/week (light drinkers), 9 to 17.9 units/week (moderate drinkers), or ≥18 units/week (heavy drinkers); alcohol consumption (1 unit = 22 g, the ethanol content of one serving of sake). The physicians recommended all subjects to temperate in drinking and smoking. We retrospectively evaluated the risk ofmetachronous SCC of the oesophagus and the head and neck after ER for SCC of the oesophagus, based on the genetic polymorphisms for ADH1B and ALDH2 and the drinking and smoking histories.

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they were not recommended additional therapy. The remaining eight patients had lymph node involvement or invasion of SM2 or SM3 were recommended additional therapy. In total 33 cases were treated only by ER without additional therapy. Besides 97% (32/33) of those cases had no recurrence except for one case with a lymph node recurrence, which was successfully treated by additional CRT. The other 12 cases that underwent lymphovascular invasion or SM2 were recommended additional therapy. They underwent CRT (n = 4), radiotherapy (n = 3), or esophagectomy (n = 3). No recurrence was observed after the abovementioned treatments. At the end of the follow-up, the 3-year overall and disease-specific survival rates for group B and group C were 100% and 96%, respectively. Considering ESD, ER, and MM/SM1, 76% of all cases were completed their treatment only with ER, and 24% of high risk case for metastasis were treated appropriately with additional therapy.

Conclusion: Conclusions: Our study suggests that ER is a valid treatment for esophageal SCC with a preoperative predicted invasion depth of MM/SM1.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0567 MULTICENTRIC ASSESSMENT OF THE ENDOSCOPIC MANAGEMENT OF SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA IN WESTERN POPULATION

A. Berger1, G. Rahimi2, G. Perrod3, M. Pioche4, J. Canard5, E. Cesbron Meviter6, J. Boursier7, E. Samaha8, A. Vienne9, V. Lepilliez10, C. Cellier11
1CHU Angers, Angers/France
2Gastroenterology And Digestive Endoscopy, Georges-Pompidou European Hospital, Paris/France
3Gastroenterology, Hopital Europeen Georges Pompidou, Paris/Paris
4Gastroenterology And Endoscopy, Hospices civils de Lyon, Lyon/Lyon
5Trocadero Clinic, Hopital Georges Pompidou, Paris/Paris
6Service D’ hepatitis-gastroenterologie, Centre Hospitalier Universitaire, Angers/ France
7HEGP, Paris/Paris
8Hopital prive Jean Mermoz, Lyon/France
9Gastroenterology, European Georges Pompidou Hospital Dept. of Gastroenterology, Paris/Paris

Contact E-mail Address: arthur.berger.bx@gmail.com

Introduction: Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are the first line treatment for superficial esophageal squamous cell carcinoma (SCC). Comparatively to surgery, endoscopic resection is mini invasive and associated with a lower morbidity and mortality.

Aims & Methods: Evaluation of the endoscopic resection efficiency for superficial esophageal SCC and long-term outcome. Primary outcomes was recurrence rate after endoscopic resection defined as local recurrence or metastatic evolution. We conducted a retrospective multicenter study in 5 french tertiary care hospitals. All patients treated by EMR or ESD for histologically proven SCC were consecutively included. Esophageal SCC was defined as superficial after macroscopic evaluation including Lugol staining and endoscopic ultrasonography (EUS). Curative resection was defined as ≥T1a with free resection margins, without lympho-vascular emboli.

Results: Between 1998 to 2016, 132 patients were enrolled and 148 tumors were resected (EMR = 80, ESD = 68). The mean age was 63.9 [35.7 - 86.0] years-old and 108 (73%) patients were male. Mean tumor size was 15.0 mm in the EMR group and 35.5 mm in the ESD group (p < 0.001). The complete resection rate in the ESD group was significantly higher 85% (24/30) and 88% (68/80) (p < 0.001). The mean follow-up period was 22 months. The recurrence rate was 14.2% (19/130) in the ESD group and 2/85 in ESD group, p = 0.001. At 12 months, recurrence-free survival rate was 84.4% and 76.4% at 24 months. Factors associated with recurrence in univariate analysis were: tumors size (p = 0.013), resection by EMR (p = 0.001), piecemeal resection (p = 0.016), and microscopic positive margins (p = 0.044). In multivariate analysis, risks factors for recurrence were: resection by EMR (OR=7.315; IC [1.685-31.762]; p = 0.008) and invasive (OR=2.635; IC [1.065-6.519]; p = 0.036). At 24 months, recurrence-free survival rate was 95.2% in ESD group, versus 59.8% in EMR group (p = 0.001). For infiltrating tumors ≥ m3, metastasis free survival rate at 24 months were 100% after complementary treatment by radiotherapy, and 62.2% without complementary treatment (p = 0.042).

Conclusion: Endoscopic resection of superficial esophageal SCC is safe and efficient. According to our results, ESD should be preferred to EMR because it is associated with a higher curative rate and an increased recurrence free survival rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0568 CURATIVE CONDITIONS AFTER ENDOSCOPIC RESECTION FOR MM/SM1 ESOPHAGEAL SQUAMOUS CELL CARCINOMA BASED ON LONG-TERM OUTCOMES

T. Mizumoto1, S. Oka2, S. Tanaka3, T. Hiyama4, K. Kuroki2, M. Kurihara2, Y. Yoshihuku2, Y. Sanomura3, Y. Urabe2, K. Chayama2
1Dept. Of Endoscopy, Hiroshima University Hospital, Hiroshima/Japan
2Gastroenterology And Digestive Endoscopy, Georges-Pompidou European Hospital, Paris/Paris
3Dept Of Gastroenterology And Metabolism, Hiroshima University Hospital, Hiroshima/Japan
4Health Service Center, Hiroshima University, Higashihiroshima/Japan

Contact E-mail Address: mizumoto@hiroshima-u.ac.jp

Introduction: Oesophageal squamous cell carcinoma (ESCC) with invasion into muscularis mucosa or submucosa (MM/SM1) has approximately 10% lymph node metastasis and is a relative indication for endoscopic resection (ER) as per the Japanese Esophageal Society (JES) guidelines. The consideration criteria for additional treatment of MM/SM1 ESCC are as follows: (1) lymphovascular invasion, (2) SM1, (3) positive vertical margin, and (4) diffuse pattern of infiltration (INF). However, the clinical validity of the JES guidelines has not been established. We evaluated the curative conditions after ER for MM/ SM1 ESCC based on long-term outcomes.

Methods: We recruited 98 consecutive MM/SM1 ESCC who underwent ER between August 1992 and October 2013 and were followed up for more than 3 years at Hiroshima University Hospital. As per the JES guidelines, the e-curable group was characterised by en bloc resection lesions with pathological MM, tumour and infiltration pattern (T3/M1/N0). The e-uncurable group (T1-3, INF+, M+ or N+) was analysed. The clinicopathological characteristics of patients and lesions at the rates of overall survival, disease-specific survival, recurrence-free survival, lymph node recurrence and local recurrence in the e-curable and non-e-curable groups.

Results: We enrolled 98 consecutive MM/SM1 ESCC patients (88 males; mean age, 67.4 ± 9 years; e-curable group, 39 patients; non-e-curable group, 59 patients; mean follow-up period, 75.4 ± 44 months). There were no significant differences in the clinicopathological characteristics of the patient and lesions between the 2
groups. The proportion of patients with additional treatment after ER was sign-
ificantly higher in the e-curable group (5%, 4/99) than in the non-e-curable
group (18%, 21/115; p < 0.05). Operation, radiotherapy, and chemoradiotherapy
were administered to 3 (8%), 4 (10%), and 12 (5%) patients, respectively in the
e-curable group and to 7 (12%), 22 (37%), and 10 (17%) patients, respectively
in the non-e-curable group. The 5-year overall survival rates in the e-curable and
non-e-curable groups were 97% and 75% (p < 0.05), respectively. The overall
survival rate was significantly higher in the e-curable group. Three deaths (10%)
ocurred due to primary cancer. The other reasons were as follows: other organ
cancer, 3 cases; heart failure, 4 cases; pneumonia, 3 cases; and others, 11 cases.

The 5-year disease-specific survival rates in the e-curable and non-e-curable
groups were 100% and 98%, respectively. The lymph node recurrence rates in
the e-curable and non-e-curable groups were 3% (1/39) and 7% (4/59), respecti-
vely. The local recurrence rates in the e-curable and non-e-curable groups were
0% (0/39) and 7% (4/59), respectively. The 5-year recurrence-free survival rates
in the e-curable and non-e-curable groups were 100% and 98%, respectively. The
5-year recurrence-free survival rates in the group with INFa and no lymphovas-
cular invasion were 100% and 87%, respectively. The recurrence-free survival rate
was significantly higher in the group with INFa and no lymphovascular invasion
than in the group with INFb, INFc or lymphovascular invasion.

Conclusion: Our study data support the clinical validity of the e-curable
conditions after ER for MM/S1 ESSC of the JES guidelines. However,
MM/S1 ESCC with INFa and no lymphovascular invasion may have more
possible curative conditions after ER without additional treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

**Table 1**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
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<tr>
<td>Drinker (No/So/Heavy)</td>
<td>12/1/3</td>
<td>14/2/2</td>
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<tr>
<td>Operation time (mins)</td>
<td>263.5 (165-365)</td>
<td>267.5 (200-400)</td>
<td>&lt;0.001†</td>
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<tr>
<td>Hospital stay (days)</td>
<td>8 (4-14)</td>
<td>4 (3-6)</td>
<td>&lt;0.001†</td>
</tr>
<tr>
<td>Complications (%)</td>
<td>7 (38.9)</td>
<td>1 (5.6)</td>
<td>0.041†</td>
</tr>
<tr>
<td>Days to resume full diet</td>
<td>2 (5-12)</td>
<td>2 (5-10)</td>
<td>0.001†</td>
</tr>
<tr>
<td>30 days mortality</td>
<td>0</td>
<td>0</td>
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</table>

**Conclusion:** Our prospective randomized study showed that patients treated by
ESD had significantly lower complication rate and better perioperative outcomes
when compared laparoscopic gastrectomy. ESD should be the first time treatment
for intramucosal early gastric cancers.

**Disclosure of Interest:** P.W.Y. Chiu: I serve as chairman of Asia Novel Bio-
Imaging & Intervention Group which received sponsorship from Olympus Co Ltd.
All other authors have declared no conflicts of interest.

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**Table 1 Continued**

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<td>0</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Reintervention (Gastrectomy/ESD/Reoperation(%))</td>
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<td>1/2/1</td>
<td>&lt;0.001†</td>
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<td>49 (8-80)</td>
<td>23 (5-70)</td>
<td>0.031†</td>
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<tr>
<td>Postop Day 3 VAS pain</td>
<td>39.5 (6-65)</td>
<td>5 (3-37)</td>
<td>&lt;0.001†</td>
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<td>Postop Day 7 VAS pain</td>
<td>21 (5-53)</td>
<td>0 (0-10)</td>
<td>0.003†</td>
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<td>Postop CRP Day 1</td>
<td>81.1 (54-249)</td>
<td>11.7 (2-46)</td>
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<td>Postop CRP Day 3</td>
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<td>22.8 (1.4-60.0)</td>
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<tr>
<td>Pathology T3</td>
<td>7</td>
<td>2</td>
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**Conclusion:** Our prospective randomized study showed that patients treated by
ESD had significantly lower complication rate and better perioperative outcomes
when compared laparoscopic gastrectomy. ESD should be the first time treatment
for intramucosal early gastric cancers.
or those in which the biopsies were still taken from the different anatomical areas were excluded. The patients were divided into five groups on the basis of the OLGA staging system (OLGA) and the OLGIM staging system (OLGIM).

Results: Only 148 patients were admitted to the study. The mean age was 49.7 ± 4.9 years, 60% were female (CE 52.67, 95%). 264 vials were sent with biopsies of the different areas of the stomach distributed as follows: 148 of antrum, 54 of antrum and corpus, 48 (32.4%) for corpus, 48 (32.4%) for corpus and body of antrum, angle and body. From 148 patients, 116 (78.4%) had an endoscopic diagnosis of normal gastritis or mucosa and 32 (21.6%) had endoscopic diagnosis of PCLS. From 116 patients with endoscopic diagnosis of gastritis or normal mucosa, LCPM was identified in 46 patients (39.6%) (p < 0.001) and 1 of them were low-grade dysplasia. From 32 of patients with suspected endoscopic PCLS, the diagnosis was confirmed with histology in 26 patients (81.2%). A total of 72 patients had PCLS vs. 32 who were initially suspected (p < 0.01), with a total patients of CE 40.7-56.6, 95%

Conclusion: Pre-malignant conditions and lesions of the stomach (PCLS) can show as normal mucosa or gastritis during endoscopic procedure. 39.9% of patients who underwent endoscopic procedure with presumptive gastritis had PCLS. PCLS may be under-diagnosed if random biopsies are not taken. Therefore, taking biopsies from areas without suspected PCLS causes a change in the clinical management of patients, both for the initial diagnosis and for the staging according to OLGA and OLGUM systems.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Contact E-mail Address: rainbowlove44@126.com

Introduction: Prognosis of GC has a noticeable relation with its clinical stage. Atrophic gastritis (AG), intestinal metaplasia (IM) and dysplasia are well-recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that serum PG level reflects the functional and morphologic status of patients with normal mucosal. In addition, long-term follow-up studies have recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that the annual incidence of GC were approximately 0.1% for patients with AG, intestinal metaplasia (IM) and dysplasia.

Atrophic gastritis (AG), intestinal metaplasia (IM) and dysplasia are well-recognized risk factors for GC. The annual incidence of GC were approximately 0.1% for patients with AG, intestinal metaplasia (IM) and dysplasia. In addition, long-term follow-up studies have recognized risk factors for intestinal type GC (GC). A large cohort study demonstrated that the annual incidence of GC were approximately 0.1% for patients with AG, intestinal metaplasia (IM) and dysplasia.

Contact E-mail Address: solene.hoitian@hotmail.fr

Introduction: Endoscopic treatment of sporadic duodenal adenoma is mainly performed at tertiary centers because it is technically challenging and associated with major complications (perforation 1-5% and delayed bleeding 10-15%). The aim of this study was to evaluate the safety and efficacy of the endoscopic treatment for non-ampullary sporadic duodenal adenomas (SDA) in two tertiary centers in a large series and to try to determine the predictive factors of outcomes with a long follow-up.

Aims & Methods: This retrospective study was conducted in two tertiary centers between 12/2003 to 03/2016. All the patients who underwent at least one endoscopic treatment for SDA histologically proven were included. Patients were excluded if SDA were negative in 91.8% of the cases. Negative lateral and vertical margins was associated in multivariate analysis with the lesion size and its en-bloc resection. Intraprocedural bleeding occurred in 5.9% of the case and was associated in multivariate analysis with the lesion size and its en-bloc resection. Intraprocedural bleeding occurred in 5.9% of the case and was associated in multivariate analysis with the lesion size and its en-bloc resection. Intraprocedural bleeding occurred in 5.9% of the case and was associated in multivariate analysis with the lesion size and its en-bloc resection. Intraprocedural bleeding occurred in 5.9% of the case and was associated in multivariate analysis with the lesion size and its en-bloc resection.

Contact E-mail Address: solene.hoitian@hotmail.fr

References

Disclosure of Interest: All authors have declared no conflicts of interest.
P0573 CAN BE THE PATIENT WITH NON-CURATIVE ESD FOR EARLY GASTRIC CANCER RESCUED BY SURGERY AFTER RECURRENCE?


1Division Of Endoscopy, Shizuoka Cancer Center, Shizuoka/Japan
2EAST study group, Nagaizumi/Japan
3Division Of Gastroenterology And Hepatology, Department Of Medicine, Nihon University School of Medicine, Tokyo/Japan
4Division Of Endoscopy, Shizuoka Cancer Center, Nagaizumi/Japan
5Hiroshima City Hospital, Hiroshima/Japan
6Saka Central Hospital Advanced Care Center, Saka/Japan
7Kitakyuushu Medical Center, Kitakyushu/Japan
8Nara Medical University, Nara/Japan
9Japanese Red Cross Society Kyoto Daichi Hospital, Kyoto/Japan
10Shinshu University School of Medicine, Nagano/Japan
11Teyama Prefectural Central Hospital, Teyama/Japan
12Gifu University Graduate School of Medicine, Gifu/Japan
13Hiroshima University, Hiroshima/Japan
14Osaki Citizen Hospital, Osaki/Japan
15Department Of Gastroenterology And Hepatology, Nagasaki University Hospital, Nagasaki/Japan
16Dept. Of Gastroenterology, Toranomon Hospital, Tokyo/Japan

Contact E-mail Address: k.takizawa@scchr.jp

Introduction: Additional surgery should be recommended in patients with non-curable endoscopic resection for early gastric cancer (EGC). However, this decision has often been hesitated according to patient condition such as advanced-stage or comorbidities. After the recognition of recurrence, the salvage surgery has been considered difficult. However, little has been reported on it. Aims & Methods: The aim of this study was to clarify the results of salvage surgery for recurrence after non-curative ESD for EGC using data from a multicenter retrospective study (EAST study). Of 15,785 patients who underwent ESD for EGC at 19 participating institutions from January 2000 to August 2012, 6786 patients were followed to meet the current curative criteria for ESD were retrospectively reviewed. Among 1969 patients enrolled into EAST study, 1064 patients underwent additional surgery, and 905 patients were observed without any additional treatment. We evaluated first site of recurrence, clinical course after salvage surgery, and long-term survival on non-treatment group. Recurrence was classified regional LNM, and distant metastasis.

Results: Over a median follow-up period of 64 months, recurrence was detected in 27 patients. Among them, 2 patients were excluded from this study due to missing data of (1) pathological recurrence were only local site (intagia-gastric and regional LNM 7), and distant metastasis 15 (60%). The first treatments for recurrence were endoscopic treatment 1, salvage surgery 7 (28%), chemotherapy 6, and best supportive care 11. Only one patient was alive without any recurrence for 31 months after salvage surgery. And one patient died of acute myocardial infarction just one month after salvage surgery. In the remaining 5 patients, recurrence was detected at 0, 2, 3, 5, 30 months after salvage surgery, and all of them died of gastric cancer. Median survival time of all 25 patients with recurrence was 20 months. Of 25 patients with recurrence, survival was 5 months from recurrence. And median survival time of 7 patients who underwent salvage surgery was only 7 months from salvage surgery.

Conclusion: More than half of recurrence after non-curative ESD without additional surgery were distant metastasis, and the survival rate after salvage surgery was quite low.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0574 BLEEDING AFTER ENDOSCOPIC RESECTION FOR EARLY GASTRIC LESIONS IN PATIENTS ON ANTIITHROMBOTIC THERAPY

T. Nagai1, S. Matsui, H. Kashida, Y. Komeda, T. Sakurai, M. Kudo

1Dept. Of Gastroenterology And Hepatology, Kindai University Faculty of Medicine, Osaka-sayama/Japan

Contact E-mail Address: tomyuyukinagai@mac.com

Introduction: Due to the increase of elderly patients who are often receiving antithrombotic therapy for cardio- and cerebrovascular diseases, postprocedural bleeding after endoscopic treatments for early gastric lesions has become one of the major concerns of therapeutic endoscopists. The Japan Gastroenterological Endoscopy Society (JGES) and other related associations published the Guidelines for Gastroenterological Endoscopy in Patients Undergoing Antithrombotic Treatment in 2012. According to the guideline it is not necessary to suspend an antithrombotic agent before endoscopic treatments including endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD) if the agent is not combined with other antithrombotic drugs (monotherapy). On the other hand it is recommended that anticoagulants should be substituted with heparin before EMR/ESD. The aim of this study is to clarify the efficacy of the recommendations of the guideline.

Aims & Methods: In this study 888 early gastric lesions in 783 patients who underwent EMR/ESD at our hospital between January 2012 and March 2017 were retrospectively analysed. Postprocedural bleeding was defined as: (1) hematemesis, melaena for which an emergency endoscopy was required and (2) bleeding which were confirmed with a repeat endoscopy after a drop ≥2 g/dL of haemoglobin level.

Results: The total number of patients undergoing antithrombotic therapy was 78, of which 38 patients who were taking antithrombotics agents only, 29 were taking antiplatelet agents only, and 11 were taking both. The antithrombotics were suspended in 22 cases (Group A), substituted with heparin in 18 (Group B), and kept continued in 38 (Group C). Postprocedural bleeding was encountered in 31 out of 783 cases (4.0%), 21 of which occurred in patients on antithrombotic therapy (21/78: 27%) whereas 10 of which occurred in those without (10/752: 1.3%). A univariate analysis between the patients with postprocedural bleeding and those without according such variables age, gender, the diameter and number of the resected lesions, use of antithrombotics, and the expertise of the operating endoscopist revealed that only the use of antithrombotics was significant risk factor for the postprocedural bleeding (odds ratio = 14.926, 95% confidence interval: 7.415–34.208, p < 0.001). However, the rate of postprocedural bleeding was not significantly different among Group A, B and C. Among the 21 bleeding patients with antithrombotics, the agent had been suspended or substituted with heparin before EMR/ESD in 10 and had been continued without suspension in 11. There was no significant difference of bleeding rate between the two groups.

Conclusion: The use of antithrombotics was a significant risk factor for the postprocedural bleeding after EMR/ESD for early gastric lesions. The rate of bleeding was not significantly different regardless if the antithrombotics were suspended, substituted with heparin, or continued without suspension.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


1Internal Medicine, Catholic Medical Center, the Catholic university of Korea, College of Medicine, Seoul/Korea, Republic of

2Internal Medicine, Seoul ST. Mary’s Hospital, Seoul/Korea, Republic of

3Surgery, Catholic Medical Center, the catholick university of Korea, College of Medicine, Seoul/Korea, Republic of

Contact E-mail Address: myg9888@cnaver.com

Introduction: Since population-based screening for gastric cancer in Korea was implemented in 2002, endoscopic treatment of early gastric cancer (EGC) has been popularized. Most patients with early neoplasm have no alarming symptoms/signs. In addition, the strategy for detecting factors predicting curative endoscopic resection of EGC is becoming important, because the general population is aging and considering the quality of life after treatment.

Aims & Methods: This study investigates factors affecting curative endoscopic resection of EGC in the era of population-based screening for gastric cancer. The subjects consisted of patients newly diagnosed with stomach cancer at Seoul ST. Mary’s Hospital between May 2011 and May 2016. All patients completed questionnaires about symptoms, social history, family history, knowledge of national cancer screening program, the reason for screening, and the interval between endoscopy screening examinations for gastric cancer.

Results: Of a total of 469 patients, 147 (31.3%) had a curative endoscopic resection, 260 (55.4%) had a curative surgical resection and 62 (13.3%) were in non-curative surgical resection or an inoperable state. The patients with curative endoscopic resection had minimal abdominal symptoms and fewer alarm symptoms/signs (a family history of gastric cancer, anemia, and clinically important weight loss), whereas alarm symptoms were more common in patients with advanced cancer. In multivariated analysis, regular surveillance endoscopy was only the factor predicting the curative endoscopic resection [Odd ratio (95% CI) 6.099 (2.532 – 14.933), p = 0.000]. In addition, the proportion of curative endoscopic resection was significantly higher in the 1-year [Odd ratio (95% CI) 10.381 (4.081 – 26.409), p = 0.0000], 2-year endoscopy interval groups [Odd ratio (95% CI) 3.161 (1.106 – 9.035), p = 0.032] than patients who had no endoscopy within 2 years.

Conclusion: Most patients with the curative endoscopic resection have minimal abdominal symptoms and no alarming symptoms/signs. Regular surveillance endoscopy was the only factor predicting the curative endoscopic resection of gastric cancer. In addition, more frequent endoscopic surveillance could help to early detect gastric cancers with curative endoscopic resection.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0576 USEFULNESS OF OPERATIVE LINK ON GASTRITIS ASSESSMENT (OLGA) AND OPERATIVE LINK ON GASTRIC INTESTINAL METAPLASIA (OLGIM) FOR DIAGNOSIS OF HELICOBACTER PYLORI-ASSOCIATED GASTRIC CANCER REGARDLESS OF TISSUE TYPE IN KOREA

C. Yun1, N. Kim2, Y. Hwang3, H. Lee4, M. Kwon5, J. Lee6, Y.J. Choi6, H. Yoon7, C.M. Shin8, Y.S. Park9, D.H. Lee1
1Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea, Republic of
2Department Of Internal Medicine And Institute Of Liver Research, Seoul National University College of Medicine, Seoul, Korea, Republic of
3Division of Statistics in Medical Research Collaborating Center, Seoul National University Bundang Hospital, Seongnam, Republic of Korea, Seongnam/Korea, Republic of

Contact E-mail Address: ychhiphop@hanmail.net

Introduction: Atrophic gastritis and intestinal metaplasia are the cancerization field in which gastric cancer (GC) develops in case of intestinal type. The OLGA and OLGIM staging systems have been suggested to provide risk estimation for GC.

Aims & Methods: The aim of this study is to evaluate the usefulness of OLGA and OLGIM staging according to Lauren's histological classification of GC in considering with other risk factors of gastric cancer. From January 2006 to December 2015, 607 GC patients and 677 control subjects were enrolled who underwent esophagogastroduodenoscopy. Biopsies were taken from the greater and lesser curvatures of the antrum and mid-body, respectively. The OLGA and OLGIM stage (0-IV) was recorded by combining antral with body atrophy and lesser curvatures of the antrum and mid-body, respectively. The OLGA and OLGIM staging according to Laurens's histological classification of GC in regions with high prevalence of GC.

Disclosure of Interest: Analysis regarding specific interaction among these three factors is undergoing.

P0577 BODY MASS INDEX AND DIGESTIVE CANCER MORTALITY IN THE KOREAN GENERAL POPULATION: A NATIONWIDE COHORT STUDY

P. Kim1, Y.J. Kim1, M.K. Bang1, S.H. Jeong2, S. Yi3
1Division Of Gastroenterology, Department Of Internal Medicine, Catholic Kwandong University International St. Mary's Hospital, Incheon/Korea, Republic of
2Preventive Medicine And Public Health, Catholic Kwandong University College of Medicine, Gangwon-do/Korea, Republic of

Contact E-mail Address: pumsoo.kim@gmail.com

Introduction: The association between body mass index (BMI) and digestive cancer mortality is not conclusive in East Asians.

Aims & Methods: We evaluated the relationship between BMI and digestive cancer mortality, using prospective cohort data by the National Health Insurance Service in Korea, which consisted of more than one million subjects. A total of 510, 148 Korean adults were followed-up until 2010. The adjusted hazard ratios (HRs) of cancer mortality were calculated using a Cox model.

Results: During follow-up, 7774 total deaths occurred from digestive cancer, HR for digestive cancer mortality across seven BMI categories. Below 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were 0.43 (95% confidence interval [CI] = 0.32-0.58) for esophagus cancer, 0.70 (0.62-0.79) for stomach cancer, and 0.70(0.65–0.90) for colorectal cancer. Over 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were 1.30 (95% CI = 1.04-1.64) for colorectal cancer, 1.28 (1.07–1.53) for liver cancer, and 1.28 (0.96–1.71) for gall-bladder cancer and biliary tract cancer. BMI were not associated mortality from small intestine cancer and pancreatic cancer.

Conclusion: Low BMI were predictors of mortality from esophageal cancer and stomach cancer. High BMI were predictors of mortality from liver cancer and gallbladder cancer and biliary tract cancer. Both low and high BMI were predictors of mortality from colorectal cancer. Further research is needed to evaluate whether interventions involving weight change (loss or gain) reduce the risk of cancer or improve the survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Abstract No: P0576

<table>
<thead>
<tr>
<th>Gastric cancer patients (n=607)</th>
<th>Intestinal-type (n=354)</th>
<th>Diffuse-type (n=233)</th>
</tr>
</thead>
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<tr>
<td>OR</td>
<td>95% CI</td>
<td>p-value</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Female</td>
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<td>1</td>
</tr>
<tr>
<td>Male</td>
<td>1.193</td>
<td>0.847–1.679</td>
</tr>
<tr>
<td>Age(year, mean±sd)</td>
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<td></td>
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<tr>
<td>&lt;40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40–59</td>
<td>1.932</td>
<td>1.229–3.036</td>
</tr>
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<td>≥60</td>
<td>2.584</td>
<td>1.647–4.056</td>
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<td>Smoking status</td>
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<td>Never-smoker</td>
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<tr>
<td>Ever-drinker</td>
<td>1.322</td>
<td>1.010–1.731</td>
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<tr>
<td>Negative</td>
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<tr>
<td>Positive</td>
<td>2.119</td>
<td>1.521–2.953</td>
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<td>H. pylori status</td>
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</tr>
<tr>
<td>Positive</td>
<td>1.963</td>
<td>1.540–2.503</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>1</td>
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<tr>
<td>H. pylori status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1.963</td>
<td>1.540–2.503</td>
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<tr>
<td>Negative</td>
<td>1</td>
<td>1</td>
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<tr>
<td>H. pylori status</td>
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<tr>
<td>Low risk</td>
<td>3.778</td>
<td>2.612–5.465</td>
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<tr>
<td>High risk</td>
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</table>
P0578 RISK FACTORS FOR LYMPH NODE METASTASIS OF ULCERATIVE TYPE INTRACULAR EGG
T. Kim1, T.J. Kim1, H. Lee1, J.H. Lee1, J.J. Kim2
1Department Of Gastronomy, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul/Korea, Republic of
2School of Medicine, Seoul/Korea, Republic of

Introduction: Endoscopic submucosal dissection (ESD) is not currently accepted as an alternative treatment to surgery in ulcerative type EGC due to relatively higher probability of lymph node metastasis (LNM). This present retrospective analysis examined the correlation of various histologic factors with the presence of lymph node metastasis in ulcerative type EGC.

Aims & Methods: A retrospective analysis on 200 patients with ulcerative type EGC who underwent radical gastrectomy with D2 lymph node dissection. Several clinicopathologic factors were investigated to identify predictive factors for LNM: tumor size, histopathologic type of tumor, lymphovascular invasion and depth of invasion. Multivariable logistic regression analysis was performed to evaluate the risk factors for LNM.

Results: The total rate of LNM was 15.5% (31/200). The rate of LNM was 2.1% (2/95) in the lesions confined to the mucosa and 27.6% (27/105) in those that had infiltrated the submucosa. On univariate analysis, depth of invasion (p = 0.047) and lymphovascular invasion (p < 0.001) were significant associated with LNM. However, there was no significant association between tumor size, histopathologic type of tumor and LNM. On multivariate analysis, only lymphovascular invasion (p = 0.001) was significantly associated with LNM. There was no significant association between tumor size and lymph node metastasis in ulcerative type EGC.

Conclusion: Ulcerative EGC confined to the mucosa could be considered for candidate for curative ESD due to the low risk of LNM. This finding should be confirmed by more data from other centers, which focus on LNM after ESD in ulcerative type intramucosal EGC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0579 THE FEASIBILITY STUDY USING KUMC ROBOTIC MANIPULATOR IN ENDOSCOPIC SUBMUCOSAL DISSECTION
1Division Of Gastroenterology And Hepatology, Department Of Internal Medicine, Korea University Anam Hospital, Seoul/Korea, Republic of
2Division Of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University College of Medicine, Seoul/Korea, Republic of

Introduction: Irreversible electroporation (IRE) is a promising novel technique for the ablation of tumors. An advantage of IRE is its ability to remove undesired cells by affecting the cell membrane without thermally destructing blood vessels, nerves and the surrounding tissues. Several clinical trials for applying IRE to human organs such as liver, pancreas and kidney are conducted and studies about IRE ablation for gastrointestinal tumors also have been conducted recently. Here, we developed new developed endoscopic IRE ablative catheter works with single channel of endoscope. A pair of dipolar electrodes consist of pre-shaped 0.63 mm nitinol wire and the distance between each electrode is 10 mm. The electrodes are loaded within braided tube for stent delivery system then deployed within IRE catheter put in stomach through the endoscope. We performed endoscopy and IRE ablation was done on pig's stomach mucosa by using endoscopy with newly developed IRE catheter. We divided pig's stomach into 2 parts (antrum & body), and IRE ablation was applied on each part of the stomach. Pigs were sacrificed after 24 hours, and we collected their stomachs with surgical technique. Following fixation, tissues were stained with H&E.

Results: Ten male Yorkshire pigs and in vitro stomachs were used in this study. The tissue with H&E stain showed diffuse cell death 24 hr after IRE ablation.

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Disease cancer mortality associated with baseline BMI according to BMI ranges

<table>
<thead>
<tr>
<th>All participants (per 12-47 kg/m²)</th>
<th>12-24.9 kg/m²</th>
<th>25-47 kg/m²</th>
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<tbody>
<tr>
<td>per 5 kg/m² increase in BMI</td>
<td>per 5 kg/m² decrease in BMI</td>
<td>per 5 kg/m² increase in BMI</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Digestive cancer</th>
<th>Deaths</th>
<th>p-value</th>
<th>HR* (95% CI)</th>
<th>Deaths</th>
<th>p-value</th>
<th>HR* (95% CI)</th>
<th>Deaths</th>
<th>p-value</th>
<th>HR* (95% CI)</th>
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</thead>
<tbody>
<tr>
<td>Esophagus</td>
<td>310</td>
<td>&lt;0.001</td>
<td>0.53 (0.43-0.65)</td>
<td>252</td>
<td>&lt;0.001</td>
<td>0.43 (0.32-0.58)</td>
<td>58</td>
<td>0.491</td>
<td>1.28 (0.64-2.57)</td>
</tr>
<tr>
<td>Stomach</td>
<td>2,032</td>
<td>&lt;0.001</td>
<td>0.77 (0.72-0.83)</td>
<td>1408</td>
<td>&lt;0.001</td>
<td>0.70 (0.62-0.79)</td>
<td>544</td>
<td>0.244</td>
<td>1.14 (0.91-1.43)</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>1328</td>
<td>0.845</td>
<td>1.01 (0.92-1.11)</td>
<td>866</td>
<td>0.002</td>
<td>0.77 (0.65-0.90)</td>
<td>462</td>
<td>0.024</td>
<td>1.34 (1.04-1.64)</td>
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<tr>
<td>Colon</td>
<td>835</td>
<td>0.347</td>
<td>1.06 (0.94-1.19)</td>
<td>536</td>
<td>0.070</td>
<td>0.82 (0.66-1.02)</td>
<td>299</td>
<td>0.089</td>
<td>1.28 (0.96-1.71)</td>
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<tr>
<td>Rectum</td>
<td>493</td>
<td>0.366</td>
<td>0.93 (0.80-1.08)</td>
<td>330</td>
<td>0.006</td>
<td>0.69 (0.53-0.90)</td>
<td>163</td>
<td>0.136</td>
<td>1.34 (0.91-1.97)</td>
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<tr>
<td>Small intestine</td>
<td>61</td>
<td>0.049</td>
<td>0.64 (0.41-1.00)</td>
<td>49</td>
<td>0.863</td>
<td>0.94 (0.46-1.92)</td>
<td>12</td>
<td>0.231</td>
<td>0.26 (0.03-2.36)</td>
</tr>
<tr>
<td>Liver</td>
<td>2365</td>
<td>0.630</td>
<td>1.01 (0.95-1.09)</td>
<td>1577</td>
<td>0.323</td>
<td>0.94 (0.82-1.07)</td>
<td>788</td>
<td>0.007</td>
<td>1.28 (1.07-1.53)</td>
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<tr>
<td>Pancreas</td>
<td>929</td>
<td>0.393</td>
<td>1.00 (0.90-1.12)</td>
<td>603</td>
<td>0.626</td>
<td>0.95 (0.77-1.17)</td>
<td>326</td>
<td>0.504</td>
<td>0.90 (0.67-1.22)</td>
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<tr>
<td>GB and Biliary</td>
<td>749</td>
<td>0.012</td>
<td>1.16 (1.03-1.31)</td>
<td>471</td>
<td>0.644</td>
<td>1.06 (0.84-1.34)</td>
<td>278</td>
<td>0.221</td>
<td>1.28 (0.96-1.71)</td>
</tr>
</tbody>
</table>

BMI, body mass index; CI, confidence interval; GB, gallbladder; HR, hazard ratio. *Hazard ratios were calculated using Cox proportional hazards models after adjustment for age at baseline (continuous variable), smoking status (current smoker, former smoker, never-smoker, and missing smoking status), alcohol consumption (frequency; five or more times/week, one to four times/week, less than one times/week, past drinker [no alcohol for a year], never-drinker, or missing information), monthly household income (Korean won [KRW], 1 United States dollar = 1170 KRW as of August 1, 2004; < 500, 000, 500, 000-990, 000, 1, 000, 000-1, 490, 000, 1, 500, 000, 500, 000, missing information), and physical activity (yes, no). HRs were not presented for causes with less than 10 deaths.
Consistent with the mechanism of action of IRE on the cell membrane only, there was completely killed cell within the IRE lesions without intervening live cells. But there was no difference in histology depending on gastric part in which ablation was applied. During the study, no complication was observed in pigs in 24 hours after ablation.

Conclusion: The new endoscopic IRE device, which can perform IRE ablation on gastrointestinal tract using endoscopy showed safe and feasible result.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0581 DIAGNOSIS OF MICROVASCULAR PATTERN IS MORE IMPORTANT THAN MICROSPHERE PATTERN TO DELINEATE GASTRIC CANCERS DETECTED AFTER H. PYLORI ERADICATION BY MAGNIFYING ENDOSCOPY

T. Iwasaki, K. Uchita, K. Kojima, S. Iwamura
Kochi Red Cross Hospital, Kochi/Japan

Contact E-mail Address: space-rendez-vous@sings.jp

Introduction: It is difficult to delineate gastric cancer that is detected after successful eradication of Helicobacter pylori. One reason is reportedly the difficulty in identifying the demarcation line between the cancerous lesion and non-cancerous gastric mucosa due to a mixture of non-neoplastic epithelial-lined structure inside the neoplasm. However, most previous studies have only used magnification endoscopy (ME) at low power magnification which could evaluate microsurface pattern (MSP) but could not evaluate microvascular pattern (MVP).

The highest power magnification was necessary to evaluate MVP accurately to delineate the demarcation line. The ME findings of the demarcation line, irregular MSP and irregular MVP were inconsistent in delineating the gastric cancers might not have been accurately assessed in these studies.

Aims & Methods: The aim of this study was investigating diagnostic efficacy of ME with narrow band imaging (NBI) in delineating the gastric cancers after eradication HP, using ME at highest power magnification, and classifying ME features of the marginal area according to the vessel plus surface classification system (VSCS) to realize which was more important ME findings MSP or MVP to detect demarcation line. Endoscopic examination was performed using a magnification endoscopy (GF-H260Z, Olympus Medical Systems Co, Tokyo, Japan) and NBI system (EVIS LUCERA Spectrum system; Olympus Medical Systems Co, Tokyo, Japan). Endoscopic imaging procedures were performed at low-power magnification followed by highest power magnification. On the day of EGD, the resection line was marked 3–5 mm outside of the margin of the lesion. A lesion meeting all of the following criteria was defined as a lesion with successful delineation: (1) the demarcation line of the lesion is endoscopically identified with a high level of confidence; (2) According to histopathological findings, the lesion is defined as histologically occurring in the demarcation line. The diagnostic accuracy of ME-NBI in delineating the lesions was evaluated. On the other hand the ME findings of the marginal area in each lesion were classified in terms of microsurface pattern (MSP) and microvascular pattern (MVP) according to the VSCS to identify the findings that were useful in delineating the lesions in patients with differentiated-type early gastric cancers. The classification according to the VSCS was made in the marginal area with the least irregular findings.

Results: Of 178 consecutive lesions of differentiated-type early gastric cancer treated with endoscopic submucosal dissection (ESD) between August 2013 and March 2017, the study included 59 lesions that were detected after successful H. pylori eradication. The result of ME-MBI findings are summarized in the table. Gastric cancer was successfully delineated in 98.3% (58/59) of the lesions in the marginal area with the least irregular findings.

Conclusion: The accuracy of ME with NBI in delineating gastric cancer detected after H. pylori eradication was 98.3%, which was higher than the values reported previously. In addition, the MVP as visualized by ME appeared to be a more reliable parameter for delineation. These results indicate that meticulous observation of the MVP under maximal magnification is crucial for the delineation of gastric cancer detected after eradication of H. pylori.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0582 ENDOSCOPIC SMALL CAPACITY FORCEPS INCREASE THE PATHOLOGICAL DIAGNOSIS OF GASTRIC INDEFINITE NEOPLASIA

1St. Marianna University School of Medicine, Kawasaki/Japan
2Gastroenterology And Hepatology, St. Marianna Medical University, Kawasaki/Japan
3Pathology, St. Marianna Medical University, Kawasaki/Japan

Contact E-mail Address: yayamusa_matsuo@marianna-u.ac.jp

Introduction: Endoscopic forceps biopsy (EFB) is the gold standard for gastric epithelial tumor diagnosis. However, definitive diagnosis is often difficult, and some cases are diagnosed as gastric indefinite neoplasia (GIN), which corresponds to category 2 in the revised Vienna classification. GIN lesions require short periods of follow-up. The most appropriate forceps size for gastric biopsy has yet to be determined. In the Japanese Classification of Gastric Cancer, diagnoses of GIN are attributed, at least partly, to the full size of biopsy specimens. Since specimens yielded by small biopsy forceps are small, the use of small biopsy forceps is expected to increase the rate of GIN diagnoses.

Aims & Methods: The relationship between forceps size and the frequency of GIN was investigated. The patients in this cohort were divided into two historical groups. The first group comprised patients evaluated during the period when standard biopsy forceps (SIF) were used (April 2010–March 2011), and the second comprised patients evaluated during the period when small biopsy forceps (SmF) were used (April 2011–March 2013). Standard caliber endoscopy was used for all esophagogastroduodenoscopy(EGD). We count the number of GIN and gastric carcinoma lesions. Patient characteristics, lesion characteristics (e.g., size, macroscopic appearance, and color tone), endoscopist experience level, biopsy sample size, and groups diagnosis were investigated. The clinical courses of GIN cases were followed for 3 years, and the timing of EGD after the GIN diagnosis and the final pathological result were investigated.

Results: Among the 5420 patients who underwent EGD in the first period, 2, 584 (30.7%) underwent gastric biopsy with SIF. Among the 15,986 patients who underwent EGD in the second period, 4204 (26.3%) underwent gastric biopsy with SmF. Gastric carcinoma was diagnosed in 7.93% (205/2584) and 7.54% (317/4204) of the SIF and SmF groups, respectively (P = 0.556). GIN was diagnosed in 30.7% (2584/8420) of the SIF and SmF groups diagnosis, respectively (P = 0.088). The clinical courses of GIN cases were followed for 3 years, and the timing of EGD after the GIN diagnosis and the final pathological result were investigated.

Conclusion: The only factor that had a significant impact on the GIN diagnosis rate was the forceps size used during biopsy. The forceps size use should be avoided with a standard caliber endoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0583 THE ROLE OF STRESS AND NITROSAMINES IN THE DEVELOPMENT OF GASTRIC CANCER: A NEW MODEL OF ADENOCARCINOMA FORMATION WITH METASTASES IN RATS

A. Khorovodov1, I. Agronovich2, N. Shushunova2, N. Novolokin2, A. Telegein2, A. Shnitkenkova1, M. Sagatova1, I. Trishkina1, M. Ulanova1, E. Borisova1, O. Semyachkina-Glushkovskaya1
1Biological, Saratov State University, Saratov/Russian Federation
2Biology, Saratov State University, Saratov/Russian Federation
3Anatomy, Saratov Medical University, Saratov/Russian Federation
4Institute of Electronics, Bulgarian Academy of Sciences, Sofia/Bulgaria

Contact E-mail Address: khorovodov2012@yandex.ru

Introduction: Stomach cancer is a leading cause of cancer-related deaths in the world. It well known that stress play an important role in the cancer. However, the research of the role of stress in cancer initiation is contradicted and debatable. Other natural factors such as nitrates, which are widely presented in daily food, are actively discussed as carcinogenic to humans. But, there is no clinical and epidemiological evidences that nitrosamines itself can induce the stomach cancer.

Aims & Methods: For the better understanding of carcinogenic effects of daily stress and nitrates in development of stomach cancer, here we studied the role of these factors in adenocarcinoma in stomach of rats. The experiments were carried out with male adult rats (n = 200). To examine the role of stress and nitrosamines in gastric mucosal injuries we used: 1) the model of chronic social stress (overpopulation during 9 months); 2) the daily using of toulidine (2 g/kg) in food and water with nitrates (2 g/l); 3) the combined effects of stress + nitrosamines. The

<table>
<thead>
<tr>
<th>Forceps Size</th>
<th>Regular MVP</th>
<th>Irregular MVP</th>
<th>Absent MVP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular MVP</td>
<td>1(1.6%)</td>
<td>16(27.1%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Irregular MVP</td>
<td>0(0%)</td>
<td>37(62.7%)</td>
<td>3(5%)</td>
</tr>
<tr>
<td>Absent MVP</td>
<td>0(0%)</td>
<td>2(3.3%)</td>
<td>0(0%)</td>
</tr>
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</table>
upper endoscopy was performed using our in-house custom-made multichannel endoscopy system. Histological assay performed to analyze the changes in the gastric tissues.

Results: Using upper gastroscopy, we studied the stomach tissues during 9 months of lining of rats in chronic stress. There were no changes in the gastric mucosa during the first 3 months. In the third month 35% (7 of 20) of animals demonstrated small partial peptic ulcer (n = 11). These changes progressed during other time of observation. 9 months of experiment. So, this time all rats showed peptic ulcers both types with significant increase in the number of ulcers (n < 21 and large, n < 9). Thus, this series of experiments clearly showed that chronic stress plays provoking role in the peptic ulcer formation in the stomach of rats. The deleterious effects of nitrosamines on the gastric mucosa observed 4 months after the beginning of daily using of toluidine and nitrites in 75% of rats (15 of 20). These rats showed symptoms of atrophic gastritis and ulcerative atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (131 of 160). Tumor lesions was accompanied by the low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. Using similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis.

Conclusion: Thus, this series of experiments markedly showed that effect of long-term eating low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. A similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (131 of 160). Tumor lesions was accompanied by the low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. Using similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (131 of 160). Tumor lesions was accompanied by the low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. Using similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (131 of 160). Tumor lesions was accompanied by the low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. Using similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis.
together with lower levels of phosphoserine, ethanolamine phosphate and urea (Table 1). The 14 GJFAAs revealed diagnostic values with AUC from 0.666 to 0.868, and the combined AUC of them reached to 0.902 (95% CI, 0.846–0.959) for the diagnosis of GC. Importantly, their AUCs were from 0.649 to 0.857, and the combined AUC reached to 0.880 (95% CI, 0.792–0.969) for the diagnosis of early GC. Particularly, leucine, threonine and serine are the most altered three GJFAAs between the two groups, whose fold change more than 2 and AUC value greater than 0.8. Moreover, the combined AUC of the 3 non-AAAs was 0.869 (95% CI, 0.805–0.934) for the diagnosis of GC. It was slightly higher than the combination with 3 AAAs 0.841 (95% CI, 0.773–0.908). Additionally, the pathway of aminoacyl-tRNA biosynthesis metabolism was excessively activated, which significantly responsible for the above alteration alternatives in GC.

<table>
<thead>
<tr>
<th>Number</th>
<th>Abbreviation</th>
<th>GC Median</th>
<th>GNG Median</th>
<th>P-value</th>
<th>VIP</th>
<th>AUC</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>Pser</td>
<td>0.028</td>
<td>0.037</td>
<td>0.002</td>
<td>1.054</td>
<td>0.766</td>
<td>0.561–0.771</td>
</tr>
<tr>
<td>A02</td>
<td>Pser</td>
<td>0.078</td>
<td>0.018</td>
<td>&lt;0.001</td>
<td>1.028</td>
<td>0.606</td>
<td>0.715–0.820</td>
</tr>
<tr>
<td>A03</td>
<td>Pser</td>
<td>0.176</td>
<td>0.064</td>
<td>&lt;0.001</td>
<td>1.058</td>
<td>0.484</td>
<td>0.729–0.880</td>
</tr>
<tr>
<td>A04</td>
<td>Pser</td>
<td>0.022</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.489</td>
<td>2.431</td>
<td>0.835–0.907</td>
</tr>
<tr>
<td>A05</td>
<td>Pser</td>
<td>0.166</td>
<td>0.016</td>
<td>&lt;0.001</td>
<td>1.420</td>
<td>2.671</td>
<td>0.831–0.903</td>
</tr>
<tr>
<td>A06</td>
<td>Pser</td>
<td>0.033</td>
<td>0.016</td>
<td>&lt;0.001</td>
<td>1.238</td>
<td>1.973</td>
<td>0.783–0.865</td>
</tr>
<tr>
<td>A07</td>
<td>Pser</td>
<td>0.025</td>
<td>0.013</td>
<td>&lt;0.001</td>
<td>1.025</td>
<td>1.763</td>
<td>0.715–0.814</td>
</tr>
<tr>
<td>A08</td>
<td>Pser</td>
<td>0.017</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.117</td>
<td>1.276</td>
<td>0.797–0.877</td>
</tr>
<tr>
<td>A09</td>
<td>Pser</td>
<td>0.026</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.344</td>
<td>2.674</td>
<td>0.812–0.887</td>
</tr>
<tr>
<td>A10</td>
<td>Pser</td>
<td>0.075</td>
<td>0.020</td>
<td>&lt;0.001</td>
<td>1.626</td>
<td>2.697</td>
<td>0.868–0.933</td>
</tr>
<tr>
<td>A11</td>
<td>Pser</td>
<td>0.066</td>
<td>0.026</td>
<td>&lt;0.001</td>
<td>1.580</td>
<td>2.962</td>
<td>0.835–0.902</td>
</tr>
<tr>
<td>A12</td>
<td>Pser</td>
<td>0.060</td>
<td>0.032</td>
<td>&lt;0.001</td>
<td>1.785</td>
<td>1.954</td>
<td>0.780–0.883</td>
</tr>
<tr>
<td>A13</td>
<td>Pser</td>
<td>0.044</td>
<td>0.015</td>
<td>&lt;0.001</td>
<td>1.091</td>
<td>2.321</td>
<td>0.884–0.923</td>
</tr>
<tr>
<td>A14</td>
<td>Pser</td>
<td>0.036</td>
<td>0.008</td>
<td>&lt;0.001</td>
<td>1.332</td>
<td>2.722</td>
<td>0.772–0.866</td>
</tr>
</tbody>
</table>

P-value, Statistically significant difference using Mann-Whitney U test; VIP, variable importance in the projection; FC, Fold Change; AUC, area under the ROC curve; 95% CI, 95% confidence interval.

Conclusion: GJFAA profiles may be helpful for improving GC diagnosis even in the early stage and for providing more information about its metabolism. Leucine, threonine and serine, three non-AAAs, warrant further validation as alternative metabolic biomarkers for GC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0958 MIRRORING OF GASTRIC CANCER DURING UPPER GASTROINTESTINAL ENDOSCOPY AND INFLUENCE ON THE NATURAL HISTORY OF THE DISEASE
R. Salmoral1, J. Rodríguez-Sánchez2, F. Martín Dávila3, B. López Viedma3, P. Olivencia Palomar3, E. De La Santa Belda3, J. Olmedo Camacho3
1Gastroenterology, Hospital General Universitario Ciudad Real, Ciudad Real, Spain
2Hospital General Universitario de Ciudad Real, Ciudad Real, Spain
3Endoscopy Unit, Hospital General Universitario de Ciudad Real, Spain

Contact E-mail Address: salmoral72@gmail.com

Introduction: Gastric cancer (GC) is the fourth most common type of cancer and the second leading cause of cancer related death. The gold standard for diagnosis is the esophagogastroduodenoscopy (EGD) with targeted biopsies. Aim & Methods: Retrospective observational and descriptive study in patients diagnosed of gastric cancer from January 2013 to December 2016 in the area of Ciudad Real (Spain). Missing rate of gastric cancer was defined as the percentage patients who had a negative EGD three years before the diagnosis of GC. A survival analysis was performed with Kaplan Meier curves, mainly focussing on the influence of missing rate for gastric cancer. We studied the features related to EGD that could lead this issue.

Results: 162 patients were included, 65% male with a mean age at diagnosis of 72 years. Intestinal type was the most common histology (76%). A rate of 6.8% missing of gastric cancer was detected with an average of 20 months in delay of diagnosis. However, the survival rate was similar between patients with and without a previous EGD (7.08 vs 5.05 months p = 0.60). Among the patients who passed away, a longer delay period was observed comparing to patients who were still alive (6 months vs. 25 months; p = 0.006). In the aforementioned subgroup, biopsias were taken in 72% with gastric atrophy in all these cases. Helicobacter pylori infection was detected in 50% of them. 35.6% of the EGDs were carried out without sedation. At no point chromoendoscopy was performed, pictures were taken and withdrawal times were not reflected.

Conclusion: Despite the fact that EGD is by far the most effective method to diagnose gastric cancer, 1 out of 10 cancers or premalignant lesions are not found. Therefore, it is most important to put in place quality protocol tools in EGD that may help to increase the diagnosis of early gastric cancer, and by this way, improve the survival rate of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P0589 INTERFERENCE OF PG2 TATA BOX REGION WITH THE SERUM PG2 LEVEL IN GASTRIC CANCER**

V. De Re1, R. Magri2, M. De Zorzi1, S. Maiero3, L. Cagiani1, M. Fornasarig2, O. Repeti1, E. Buscarini1, F. Di Maro4, R. Cannizzaro2

1Sos Bioimmunoterapia Dei Tumori Umani/immunoproteomics Facility, Centro di Riferimento Oncologico di Aviano, Aviano/Italy
2Oncological Gastroenterology, Centro di Riferimento Oncologico di Aviano S.O.C. di Gastroenterologia, Aviano/Italy
3Dept. Of Gastroenterology, Gastroenterology Dept Maggiorehospital, Crema/Italy
4University Of Parma, Department of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy

Contact E-mail Address: rccannizzaro@oro.it

**Introduction:** Several studies have demonstrated serum PGII level as a marker of the functional gastric mucosa, and a marker of some tumor including the gastric cancer. However, the modulation of the protein and its role in cancer is not fully understood. The aim of this study was to analyse the polymorphisms in the TATA BOX region, which provides a binding site for the transcription factor for the PG2 gene, in association with the PG2 circulating level and clinical parameters in population at risk for GC and in GC patients.

**Aims & Methods:** Gastric function of 180 patients (67 GC, 71 first-degree relatives of GC patients (FDR-GC) and 42 autoimmune chronic AG (ACAG)) was assessed by gastropanel test. We investigated the PG2 TATA BOX polymorphism frequencies in relation to serum PG2 (sPG2) expression level, HP positivity and risk for GC. TATA BOX DNA fragments were amplified by PCR and analyzed by the capillary-electrophoresis (GeneMapper software). Association among clinical data and PG2 polymorphisms were estimated by Receiver operating characteristic (ROC) curve and linear regression analyses.

**Results:** After ROC curve analysis, the sensitivity to discriminate GC at 15 ng/mL was 75% (95% CI: 65–82). A positive correlation between the increase of PG2 sized fragments and the sPG2 level was found in the GC group (linear regression y = 14, 4381 + 2, 4846 x, p = 0.02).

**Conclusion:** In the literature, we confirm sPG2 level as a marker discriminating between GC and individuals at risk for GC (i.e ACAG and FDR). Accordantly to the literature, we confirm sPG2 level as a marker of some tumor including the gastric cancer. However, the modulation of the protein and its role in cancer is not fully understood to deeper understand the physiopathological PG2 role in GC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**MONDAY, OCTOBER 30, 2017 09:00-17:00**

**H. PYLORI I - HALL 7**

**P0590 HELICOBACTER PYLORI INFECTION ASSOCIATED WITH NONALCOHOLIC FATTY LIVER DISEASE: A LARGE-SCALE COHORT STUDY**

T. Kim, T.J. Kim, H. Lee, J.J. Kim

Department Of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul/Korea, Republic of Korea

Contact E-mail Address: attack86@naver.com

**Introduction:** Previous studies suggested a link between Helicobacter pylori (H. pylori) infection and nonalcoholic fatty liver disease (NAFLD), yet large-scale longitudinal studies are lacking to elucidate this association.

**Aims & Methods:** A cohort study of 17,028 adults without NAFLD at baseline, who participated in a repeated health screening examination including an H. pylori-specific immunoglobulin G antibody test, was conducted to evaluate the association between H. pylori and NAFLD development. Fatty liver was diagnosed by ultrasonography.

**Results:** During the 83-130 person-years follow-up, participants with H. pylori infection had a higher rate of incident NAFLD than those who were uninfected. In a multivariable model adjusted for age, sex, body mass index, smoking status, alcohol intake, regular exercise, year of screening exam, and education level, the hazard ratio (HR) for NAFLD development in participants with H. pylori-infection compared to those without infection was 1.21 (95% confidence interval [CI], 1.10–1.34). The association persisted after further adjustment for metabolic variables, inflammatory marker, and liver enzymes. The association between H. pylori and NAFLD was still evident in an analysis using fatty liver index as a surrogate marker of NAFLD. In addition, the association between H. pylori infection and incident NAFLD did not differ across clinically relevant subgroups evaluated.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Table 1: Development of nonalcoholic fatty liver disease (NAFLD) by H. pylori status**

<table>
<thead>
<tr>
<th>Person-years</th>
<th>Number of Incident cases</th>
<th>Incidence density (per 1,000 person-years)</th>
<th>Age- and sex-adjusted HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. pylori (+)</td>
<td>48,169.7</td>
<td>2030</td>
<td>43.2</td>
</tr>
<tr>
<td>H. pylori (-)</td>
<td>34,960.7</td>
<td>1300</td>
<td>37.2</td>
</tr>
</tbody>
</table>

*pEstimated from Cox proportional hazard models adjusted for age, sex, body mass index, year of screening exam, smoking status, alcohol intake, regular exercise, and education level. H. pylori, helicobacter pylori; HR, hazard ratio; CI, confidence intervals.

**Conclusion:** H. pylori infection was significantly associated with the development of NAFLD, independent of metabolic and inflammatory risk factors. H. pylori infection may play a pathophysiological role in NAFLD development, indicating that H. pylori eradication might play a role in reducing risk of NAFLD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: Helicobacter Pylori (H. Pylori) has been implicated in worsening outcomes in patients with hepatic encephalopathy. This is believed to be the result of its urease enzyme that increases the production of ammonia. Small studies so far have yielded contradictory results on whether the presence of H. pylori worsens treatment outcomes in hepatic encephalopathy. Therefore, the aim of this study was to assess the impact of H. pylori on mortality, morbidity and resource utilization among patients with hepatic encephalopathy using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publically available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of hepatic encephalopathy were included. There were no exclusion criteria. Patients positive for H. pylori were identified using the appropriate ICD-9CM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization as measured by use of abdominal imaging (CT scan and ultrasound of the abdomen), length of hospital stay (LOS), total hospitalization charges and costs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
PO595 RANDOMIZED CONTROLLED STUDY OF A NOVEL TRIPLE THERAPY USING A NO-ANTIBIOTICS (NZT) CONTAINING, NON-ANTIBIOTIC THERAPEUTIC REGIMEN VERSUS THE TRADITIONAL REGIMEN FOR ERADICATION OF HELICOBACTER PYLORI INFECTION

S. Abd-Esalam1, M. A.H. Shehata1, H. Elmesseri2, R. Talawi1
1Tropical Medicine Department, Tanta university, Tanta/Egypt
2Microbiology Department, Tanta university, Tanta/Egypt

Contact E-mail Address: sherif_tropical@yahoo.com

Introduction: Helicobacter pylori infection has become more and more resistant to conventional first-line treatment regimens. So, there is a considerable interest in evaluating new antibiotic combinations and regimens. Nitazoxanide is an anti-infective drug with demonstrated activity against protozoa and anaerobic bacteria including Helicobacter pylori.

Aims & Methods: This work is designed to evaluate the efficacy and safety of a unique triple Nitazoxanide containing regimen as a treatment regimen in Egyptian patients with Helicobacter pylori infection.

Methods: Two hundred and twenty four patients with upper Gastro-intestinal tract (GIT) dyspeptic symptoms in whom Helicobacter pylori induced GIT disease were confirmed were included in the study. They have been randomized to receive either Nitazoxanide 500mg bid, Clarithromycin 500mg bid and Omeprazole 40mg twice daily for 14 days or Metronidazole 500mg bid, Clarithromycin 500mg bid and Omeprazole 40mg twice daily for 14 days.

Results: Laboratory evaluation for Helicobacter pylori antigen within the stool was done 6 weeks after cessation of Helicobacter pylori treatment regimens to assess the response.

Results:
- The response to treatment was significantly higher in group 1 of Nitazoxanide treatment regimen than group 2 of traditional treatment regimen. Group 1 showed 94.6% cure while group 2 showed 80.6%.
- The regimen was well tolerated by all the patients enrolled in the study.

Conclusion: Nitazoxanide-containing triple therapy is a promising therapy for the first-line eradication of Helicobacter pylori. (ClinicalTrials.gov Identifier: NCT0222706)

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO596 PREVIOUS INTAKE OF MACROLIDES PREDICTS FAILURE TO ERADICATE HELICOBACTER PYLORI WITH CLARITHROMYCIN-CONTAINING REGIMENS

P. Muñoz-Gómez1, A. Jordan-Castro1, M. Abanades-Tercero1, J. Blanco-González1, J. Valle-Muñoz2
1Gastroenterology, Complejo Hospitalario de Toledo, Toledo/Spain
2Gastroenterology, Hospital del Bierzo, Ponferrada/Spain

Contact E-mail Address: julio@sescam.jccm.es

Introduction: There is some evidence that prior use of macrolides is a useful predictor of the likelihood of standard triple therapy failure in H. pylori eradication (Lim SG, et al. Dig Liver Dis 2016). The goal of this study is to evaluate whether previous intake of various macrolide antibiotics can predict failure to eradicate H. pylori using first-line clarithromycin-containing regimens.

Aims & Methods: Between February 2014 and June 2016 a total of 250 patients with H. pylori infection were prospectively included in a study whose goal was to assess eradication rates in patients with and without previous intake of macrolides.

Results: 219 patients (40.6%) had received at least one treatment with macrolides during the previous 12 years. H. pylori eradication rates with the two treatment regimens are shown in Table 1.

Table 1: H. pylori eradication rates in patients with and without previous intake of macrolides.

<table>
<thead>
<tr>
<th>Group</th>
<th>Previous use of Macrolides</th>
<th>No previous use of Macrolides</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>24/45 (53, 3%)</td>
<td>65/68 (95, 5%)</td>
<td>&lt;0, 0001</td>
</tr>
<tr>
<td>B</td>
<td>37/44 (84, 1%)</td>
<td>61/62 (98, 4%)</td>
<td>0, 0085</td>
</tr>
</tbody>
</table>

Total (n=219) 61/89 (68, 5%) 126/130 (96, 9%) <0, 0001

Conclusion: Previous use of macrolide antibiotics predicts a low response to triple therapy and to concomitant clarithromycin-containing regimens. In addition, our study shows that in patients without previous use of macrolides triple therapy achieves per-protocol eradication rates over 90%.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO597 EFFICACY OF THREE-IN-ONE CAPSULE BISMUTH QUADRUPLE THERAPY FOR HELICOBACTER PYLORI INFECTION IN CLINICAL PRACTICE IN A MULTINATIONAL PATIENT POPULATION

S. Mielcke1, D. Frederking1, T. Guenther2, E. Glocker2, B. Eisele2, V. Andreesen1, S. Schroeder2, A. Morgner2
1Center for Digestive Diseases, Internal Medicine Center Eppendorf, Hamburg/Germany
2Institute of Pathology, Lademannbogen, Hamburg/Germany
3Institute of Laboratory Medicine, Brandenburg Hospital, Brandenburg Medical School, Brandenburg/Germany
4Department of Medical Microbiology and Hygiene, University Hospital, Freiburg/Germany
5Dept. of Medicine, Israelitic Hospital, Hamburg/Germany
6University Cancer Center, University Hospital Eppendorf, Hamburg/Germany

Contact E-mail Address: prof.mielcke@mdz-hamburg.de

Introduction: Due to increasing prevalences of clarithromycin resistance in H. pylori infection, current guidelines recommend quadruple therapies as first-line therapy. 1-2. Bismuth quadruple therapy (BQT) has been proven superior to standard triple therapy in clinical trials, however little is known about the efficacy of BQT in clinical routine practice.

Aims & Methods: In a prospective single center cohort study we analyzed consecutive patients in whom three-in-one capsule BQT (Pylera® + omeprazole) has been prescribed between 1/2013 and 12/2016. All patients were instructed in a standardized fashion and a prospective follow-up was planned. In a subgroup of patients, genotypic susceptibility testing for clarithromycin and levofloxacin by PCR was carried out on gastric biopsies before treatment. Treatment outcome was assessed by 13C urea breath test or by histology not earlier than 4 weeks after end of treatment.

Results: Three-in-one capsule BQT has been prescribed in 322 patients (mean age 41 years (18–80), 65% female, 26% active smoker). 71% of patients had a migrational background or the number of previous treatment failures.

Results:
- 289/322 patients (90%) completed the study protocol. The electronic medical records of the patients, which contain information regarding all the medication prescribed to the patient during the previous 12 years, were reviewed and the intake of macrolides (clarithromycin, azithromycin and erythromycin) was registered.

References
**P0598** **ERADICATION OF HELICOBACTER PYLORI INFECTION WITH A GALLENIC FORMULATION OF BISMUTH, METRONIDAZOLE AND TETRACYCLINE WITH ESOMEPRAZOLE: A REAL-LIFE STUDY**

E. Pérez Arelano1, M.I. Rodríguez García2, A.B. Galera3, E. De La Morena9
1Digestive, Hospital, Madrid/Spain
2Digestivo, Hospital Zarzuela, Madridmail.com/Spain
3Digestivo, Hospital Zarzuela, Madrid/Spain
4Hospital Zarzuela, Madrid/Spain

Contact Email Address: epererezarleno@telefonica.net

**Introduction:** Background: Eradication of Helicobacter pylori (H. pylori) infection represents a clinical challenge. The current requirements demand eradication rates for Helicobacter pylori infection that has made that the use of triple treatment including clarithromycin or metronidazole had been given up on those countries, such as Spain, with high resistance rates. Quadruple therapy with a proton pump inhibitor (PPI) plus a single three-in-one capsule containing bismuth subcitrate potassium, metronidazole, and tetracycline (BMT) have shown high eradication rates in clinical trials.

**Aims & Methods:** We aimed to evaluate the efficacy and safety of a PPI-bismuth based quadruple therapy in patients diagnosed of H pylori infection in a clinical setting of a Private Hospital, located at the North of Madrid (Spain). A prospective and real-life study was conducted, between March 2016 to February 2017, on consecutive patients with confirmed H pylori infection eradication indication. Patients were treated for ten days with a galenic preparation containing bismuth subcitrate potassium 140mg, metronidazole 125mg, and tetracycline 125mg, three capsules four times daily, and esomeprazole 40mg twice daily and proton pump inhibitor during 30 days. The primary endpoint was H. pylori eradication rate measured by urea breath test performed, at least 28 days, after the end of treatment. Intent-to-treat (ITT) efficacy analyses included all patients who received study medication and took at least one dose of study medication; patients without an observed outcome were considered as treatment failures. Patients were followed up until 12 months, which excluded patients who did not complete the study or who had major protocol violations, were also conducted to confirm the ITT results.

**Results:** A total of 100 patients, 60 (60.0%) women and 40 (40.0%) men, who fulfilled the respective demands of the inclusion and exclusion criteria, were enrolled consecutively. Five of these were lost to follow-up. Mean (standard deviation) [95% confidence interval] age was 47.1 (15.4) [40.0 to 52.0] years. Twenty-five (25.0%) patients had a prior history of using medications to treat H. pylori infection or sometimes clarithromycin, amoxicillin, and PPI. In the ITT population, the eradication rates were 90.7% (68/75) and 80.0% (20/25) depending on whether the PPI-BMT treatment was administered as first-line or as rescue therapy, respectively. In the PP population, the eradication rates were the 98.6% (65/66) and 95.2% (21/22) in those patients treated with PPI-BMT as first-line or as rescue therapy, respectively. Eighteen (18.0%) patients reported at least one adverse event.

**Conclusion:** In patients with confirmed H pylori infection, 10 days of treatment with a regimen of bismuth, metronidazole and tetracycline plus esomeprazole provides high eradication rates not only as first-line but also as rescue therapy, with an acceptable safety profile.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0600** **A SEVEN-DAY TRIPLE THERAPY CONTAINING A POTASSIUM-COMPETITIVE ACID BLOCKER COMPARED WITH PROTON PUMP INHIBITORS, AMOXICILLIN AND CLARITHROMYCIN FOR FIRST-LINE HELICOBACTER PYLORI ERADICATION IN JAPAN: A SINGLE-CLINIC RETROSPECTIVE STUDY**

S. Yojiri
Sadamoto GI Clinic, Kitakyushu/Japan

Contact Email Address: sadamotoyo@yahoo.co.jp

**Introduction:** This study was evaluated the effectiveness and safety of Vonoprazan, a potassium-competitive acid blocker (P-CAB) compared with proton pump inhibitors (PPI) for a first-line Helicobacter Pylori (H. pylori) eradication.

**Aims & Methods:** We retrospectively analyzed data from first-line H. pylori eradication treatment (vonoprazan or PPIs with 400 mg clarithromycin and 1500 mg amoxicillin) in 400 patients (vonoprazan n = 218, rabeprazole n = 182) during the period from 1st March 2008 to 28 February 2017 at Sadamoto GI clinic, Japan. Patients who received 7-day P-CAB therapy (vonoprazan 20 mg twice daily; n = 498) were compared with those who received 7-day PPI therapy (lansoprazole 30mg n=216, rabeprazole 15mg n=282) during the period from 1st March 2008 to 28 February 2017.

**Results:** ITT and PP analysis of the first-line H. pylori eradication for vonoprazan, lansoprazole, rabeprazole, and esomeprazole were 75.5%/86.8%, 63.9%/76.2%, 68.0%/79.5%, and 63.2/70.8%, respectively. The vonoprazan eradication rates were significantly higher than those of the PPIs (P < 0.05), respectively. There was no significant difference in the adverse events between the two therapies. In the first-line triple therapy in patients with HP infection. Three hundred and forty-nine Japanese patients with HP infection diagnosed using a rapid urease test were enrolled between June 2015 and October 2016. The patients were randomly allocated to VPZ group (VPZ 40mg/day, ABPC 1500mg/day, CAM 400mg/day) or EPZ group (EPZ 40mg/day, ABPC 1500mg/day, CAM 400mg/day) with stratification according to endoscopic findings of gastric/duodenal ulcer/scar and CAM resistance determined via a microbial sensitivity test.

**Conclusion:** The eradication rates were calculated using the urea breath test 8 to 12 weeks after cessation of therapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0599** **COST EFFECTIVENESS OF HELICOBACTER PYLORI POPULATION SCREENING: ECONOMIC EVALUATION ALONGSIDE A RANDOMIZED CONTROLLED TRIAL WITH 13-YEARS FOLLOW-UP (THE HEP-FYN STUDY)**

M. Bomme1, C. Kronborg2, J.H. Hansen3, M. Wildner-Christensen1, J. Hallas4, O.B. Schaffalitzky De Muckadell5
1Dept. Of Gastroenterology, Odense University Hospital, Odense/Denmark
2Centre Of Health Economic Research, University of Southern Denmark, Odense/M Denmark
3Institute Of Clinical Pharmacology, University Of Southern Denmark, Odense M/Denmark

Contact Email Address: maria_bomme@hotmail.com

**Introduction:** Most Helicobacter pylori (Hp) infections are asymptomatic but 15% of those infected with Hp will eventually experience dyspepsia symptoms or ulcer.

**Aims & Methods:** We aimed to evaluate the cost effectiveness of population screening and eradication for Helicobacter pylori (Hp). This was a cost effectiveness analysis and cost utility analysis alongside randomized controlled trial with 13-year follow-up, with a random sample of the general population from the county of Funen, Denmark. 20,011 individuals aged 40-65 were randomized and invited in 1998-99; 12,530 were enrolled and of these 8658 individuals have been successfully followed up at 1, 5, and 13 years after intervention. Questionnaires included Gastrointestinal Symptom Rating Scale and the quality of life instrument SF-36. From SF-36 responses an SF-6D score was derived and used for calculation of quality adjusted life years (QALY). EQ-5D-5L was incorporated in the last follow-up. The intervention was an invitation to Hp screening by in-office Gastric Urea Breath test. Three hundred and forty-nine patients with a positive 13C-Urea Breath test received eradication therapy. The Hp prevalence was 17.5%. Main outcome measure was incremental cost per quality adjusted life year (QALY) and life-years gained. The evaluation has a National Health Sector perspective.

**Results:** There was no significant difference in index scores and in mean QALY between groups. Hp population screening and eradication with 13-years follow-up was not effective in regards to quality of life and the cost of screening was higher than not screening (14,327DKK (95% CI: 4155–24,499)). The probability of being cost-effective was lower than that in the patients with low eGFR (87.2% [82/94] versus 84.6% [77/91] in the VPZ and EPZ groups, respectively. [P = 0.60]), although the eradication rate was significantly higher among patients with CAM-resistant HP in the VPZ group than that in the EPZ group (73.6% [30/41] vs. 55.6% [35/63], [P = 0.044]). The first-line eradication rate in the patient with high estimated glomerular filtration rate (eGFR ≥ 100 ml/min/1.73m²) was significantly lower than that in the patients with low eGFR (r < 60ml/min/1.73m²; 86.4% [32/37] in...
the patients with low eGFR, 65.3% [34/53] in the patients with high eGFR [P = 0.034]), it was significantly higher in the VPZ group than that in the EPZ group (79.3% [23/29] versus 50% [11/13], respectively, [P = 0.025]). The first-line eradication rate in continuous smokers was significantly lower than that in non-smokers (81.0% [187/231] in non-smokers vs. 64.3% [27/42] in continuous smokers [P = 0.016]). However, there were no significant differences between the VPZ and EPZ groups in non-smokers (84.2% [96/114] versus 77.8% [91/117], respectively, [P = 0.21]) and in continuous smokers (84.2% [12/16] versus 57.7% [15/26], respectively, [P = 0.33]). Furthermore, the first-line eradication rates in both groups were not influenced by age, sex, body mass index, drinking habit, and the endoscopic findings of gastric/duodenal ulcers/scar. There were no significant differences with regard to adverse effects between the two groups.

Conclusion: In contrast to the previous reports, the first-line eradication rate of VPZ-based triple therapy with 400 mg/day CAM and 1500 mg/day ABPC was similar to that of EPZ-based triple therapy in all groups except in patients with CAM-resistant HP and high eGFR. It is necessary to determine the most appropriate conditions that will maximize the therapeutic effect of VPZ-based triple therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Vonoprazan, a novel potassium-competitive acid blocker, as a component of appropriate conditions that will maximize the therapeutic effect of VPZ-based triple therapy.

Contact E-mail Address: yvlenis.petekiveicus@gmail.com

Introduction: Previous genome-wide association studies showed that genetic polymorphisms in toll-like receptor (TLR) 1 and protein kinase AMP-activated alpha 1 (PRKAA1) gene were associated with gastric cancer (GC) or increased Helicobacter pylori (H. pylori) infection susceptibility. The aim of this study was to evaluate associations between TLR1 and PRKAA1 genes polymorphisms and H. pylori infection, atrophic gastritis (AG) or GC in European population. Single-nucleotide polymorphisms (SNPs) were analyzed in 1178 subjects (511 controls, 340 AG patients and 327 GC patients) from 3 gastroenterology centers in Germany, Lithuania and Latvia. Patients with AG and controls were from the out-patient departments, who underwent upper endoscopy because of dyspeptic symptoms and had no history of malignancy. GC patients had histopathological verification of gastric adenocarcinoma and were recruited from out-patient and stationary departments. Genomic DNA was extracted from peripheral blood mononuclear cells (PBMCs). TLR1 C > T (rs4833095) and PRKAA1 C > T (rs13361707) were genotyped by the real-time polymerase chain reaction. H. pylori status was determined by testing for anti- H. pylori IgG antibodies in sera. Associations between SNPs and presence of H. pylori infection were evaluated using logistic regression analysis. There was no association with adjustment for sex, age and H. pylori infection status was used for evaluation of associations between gene polymorphisms and AG or GC. The Bonferroni-corrected alpha level was set at 0.025 (0.05/2 SNPs).

Results: A similar distribution of TLR1 and PRKAA1 genotypes in H. pylori positive and negative cases. Moreover, no significant differences in the frequencies of all polymorphisms between AG patients and controls were found. TLR1 genotype of TLR1 gene was more prevalent in GC patients compared to controls (22.3% and 26%, respectively, P = 0.038). Logistic regression analysis revealed that polymorphism in TLR1 gene was associated with increased risk of GC. Carriers of TC genotype had higher odds of GC when compared to TT genotype (OR = 1.89, 95% PI 1.26–2.83, P = 0.002). Similar association was observed in a dominant model for PRKAA1 gene, where carriers of homozygous CC and TC vs TT genotypes showed an increased risk of GC (OR = 1.86, 95% PI 1.26–2.75, P = 0.002). No association between genetic polymorphism in PRKAA1 gene and GC was observed.

Conclusion: TLR1 rs4833095 SNP is associated with increased risk of GC in population of European descent, while polymorphism in PRKAA1 gene is not linked with the presence of GC. Both genetic polymorphisms showed no associations with H. pylori infection susceptibility and risk of AG.

Disclosure of Interest: All authors have declared no conflicts of interest.
Celiac disease (CD) is a gluten-sensitive enteropathy that resolves secondary to inflammation and carcinogenesis. Mucin synthesis, expression and secretion may be a primary event or may be associated with CD in 5.8% (n=19). This diagnosis was retained after a negative etiological assessment of Hp infection is suggested to be related to the invasion depth of CD. High prevalence of HP infection was noted in 66.7% of cases. Specific management of hepatic cirrhosis has been established with ligation of esophageal varices in 2 patients after bleeding esophageal varices until eradication of varices. A treatment with β blockers was prescribed in primary prophylaxis of digestive bleeding by rupture of esophageal varices in 4 patients. Diuretic therapy and aspiration of the ascites fluid are performed in cirrhotic patients with ascites. A GFD is established in addition to the specific management of liver cirrhosis. Liver tests were standardized in 100% of patients with cryptogenic transaminasemia following a GFD. The chronic liver disease was often decompensated and the hepatic signs for cirrhosis were in the foreground masking the response to GFD. It is recommended to look for hepatic abnormalities during CD and even to think of the diagnosis of CD in front of liver cytolysis syndrome without other enterology and in the presence of a chronic cryptogenic or dysimmune liver diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this study we investigated the TLRs 2, 4, 7, 9 genes expression in the human intestine with celiac disease compared with healthy control. Blood samples from 120 CD patients diagnosed according to the Iranian Society for Gastroenterology were collected and 120 healthy individuals were served as a control group during 2016. Also, among them, 20 duodenal biopsy specimens were collected randomly. Total RNA for both blood samples and biopsy specimens was isolated using a standard commercial kit. The mRNA expression of TLRs were quantified by relative qPCR with B2M as a reference gene.

Results: Significantly higher expression of TLR4 and TLR9 mRNA was observed in blood samples of CD patients compared to the healthy controls (P < 0.05); but there were no significant differences between expression of TLR2 and TLR7 mRNA compared to the controls. Furthermore, TLR4 and TLR2 expression level was increased in CD biopsy specimens compared to controls, whereas expression of TLR19 mRNA was decreased in CD patients. No significant differences in expression of TLR7 was observed in biopsy specimens.

Conclusion: The result of this study show that the alteration of TLR4 and TLR9 genes expression in intestinal mucosa of CD can be detected in PBMs in peripheral blood. This finding supports the implication of innate immune system in the pathomechanism of celiac disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference:
1. Atna Al, Strugala V, Allen A, et al. The associated gastrointestinal mucus gel layer, the first line of defence against mechanical, chemical, or microbiological aggressions arising from the luminal contents1. Among all different cell types of the intestinal epithelium, the goblet cells are specialised in the secretion of mucus constituent¹. As an example of failing barrier function, patients with coeliac disease (CD) have been reported to have altered intestinal barrier². Human colonic mucus-secreting cells HT-29-16E: are valuable tools to explore the effect of a specific treatment on permeability and mucus production by the human intestinal epithelium.

Aims & Methods: We investigated the new and innovative gluten detoxification bread (GFB; patent PCT/IB2013/000797) effects on mucus production by means of Alcian blue staining in comparison to the control bread (CB). In addition, MUC2 and MUC3 were quantified by ELISA and the permeability of the intestinal epithelium monolayer was determined by trans-epithelial resistance (TEER) measurement. The statistical analysis was conducted by one-way ANOVA followed by a Bonferroni post-hoc t-test.

Results: Mucin production by Alcian blue staining was expressed as % black pixels, which was increased in GFB compared with CB. Higher MUC2 concentrations expressed as ng/ml were found on cells treated with GFB (10.82 ± 1.35; P = 0.01) compared to control (9.94 ± 0.67; P = 0.05). Additionally, greater TEER values, expressed as a percentage of initial TEER, were observed after 24 hours of incubation with GFB in comparison to the control (163.2 ± 33.8; P = 0.01) which was not observed or CB (139.4 ± 28.8, P = 0.05).

Conclusion: It could be concluded that GFB has a potential of inducing MUC2 secretion by intestinal epithelial cells and improving intestinal epithelium permeability in vitro. Such observed potential may effectively contribute to consequent benefits such as higher gut barrier defence, decreased susceptibility to infections and better absorption regulation, thus ameliorating such alterations in coeliac patients.

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P0612 FUNCTIONAL DYSPEPSIA SYMPTOMS ARE STRONGLY ASSOCIATED WITH COELIAC DISEASE: RESULTS FROM A POPULATION-BASED STUDY

M. Potter1, M. M. Walker2, M. P. Jones1, N. Koloski1, G. Brogan3, S. Keely1, N.J. Talley1
1Faculty Of Health And Medicine And Priority Research Center For Digestive Health And Neurogastroenterology, The University of Newcastle Australia, Callaghan/Australia/NSW
2Anatomy Pathology, University of Newcastle, Newcastle/Australia/NSW
3Psychology, Macquarie University Psychology, North Ryde/Australia

Contact E-mail Address: Michael. Potter@hnehealth.nsw.gov.au

Introduction: Coeliac disease (CD) is estimated to affect up to 1 in 100 Australians (1). Although CD has a wide range of clinical manifestations, patients frequently present with gastrointestinal (GI) symptoms which overlap with functional GI disorders, particularly irritable bowel syndrome (IBS) and functional dyspepsia (FD); the prevalence of biopsy proven CD is higher in IBS (2) and in dyspepsia (3). Patients with CD have been shown to experience persistent GI symptoms despite long term treatment with a gluten-free diet (4).

Aims & Methods: The aim of this study was to define GI symptoms reported in an Australian cohort with a doctor diagnosis of CD and compare with those not reporting CD. A total of 3825 people (mean age 58.4 years, age range 18-100 years and 47.5% males) randomly selected from the Australian population returned a mail survey (Digestive Health & Wellbeing Survey, response rate = 45%) which contained questions on whether the participant had ever been told by a physician that they had CD, and questions regarding GI symptoms to establish whether they had co-existent functional GI disorders. Adherence to a gluten-free diet was not assessed. Prevalence of CD, FD and IBS are reported with 95% exact confidence intervals. The difference between symptoms in those with CD compared with the unaffected population was tested for significance by the Pearson chi-square test.

Results: The prevalence of doctor-diagnosed CD was 1.2% (95% CI 0.84-1.59) in this cohort. Subjects with CD reported significantly higher levels of GI symptoms than unaffected individuals, including abdominal pain associated with abnormal bowel habit, diarrhoea, bloating, distention, epigastric burning and early satiety (see Table). There was no significant difference observed in symptoms of post-prandial fullness, nausea, abnormal stool consistency, or straining with defecation. The prevalence of FD as defined by Rome III criteria in the CD cohort was 37.5% (95% CI 22.7-54.2) compared to 13.9% (95% CI 12.8-15.1) in the non-affected population (OR 2.7, 95% CI 1.9-7.1, p < 0.001). There was no significant difference in the prevalence of IBS in the affected compared with the non-affected cohort (30.8% versus 22.2%, p = 0.2).

Table: Gastrointestinal symptoms reported by patients with and without self reported coeliac disease (CD). Items reported as greater than one day per week (%) or greater than or equal to “often” (%)

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>CD - Yes</th>
<th>CD - No</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain associated with low bowel motions **</td>
<td>16/37 43.2%</td>
<td>600/3234 18.6%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>More bowel motions associated with pain **</td>
<td>13/38 34.2%</td>
<td>504/3248 15.5%</td>
<td>&lt; 0.002</td>
</tr>
<tr>
<td>Bloating *</td>
<td>13/40 32.5%</td>
<td>436/3381 12.9%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Distention *</td>
<td>12/40 30%</td>
<td>395/3371 11.7%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Abdominal pain *</td>
<td>9/39 23.1%</td>
<td>362/3378 10.7%</td>
<td>&lt; 0.014</td>
</tr>
<tr>
<td>&gt;3 bowel motions per day **</td>
<td>7/40 17.5%</td>
<td>740/315 17.5%</td>
<td>0.046</td>
</tr>
<tr>
<td>Epigastric burning *</td>
<td>8/40 20%</td>
<td>165/3380 4.9%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Early satiety *</td>
<td>8/40 20%</td>
<td>230/3378 6.8%</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Conclusion: The prevalence of gastrointestinal symptoms and in particular functional dyspepsia symptoms are significantly higher in patients with a doctor diagnosis of CD than amongst the unaffected population. Studies of the biopsy proven coeliac disease in IBS is higher in IBS cohorts than healthy controls (2) and the value of screening with duodenal biopsy testing for CD in FD is concluded to be useful (3), this study supports these views.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0613 MALE GENDER AND UNDERWEIGHT ARE ASSOCIATED WITH OSTEOPOROSIS IN PATIENTS WITH NEW DIAGNOSIS OF COELIAC DISEASE

Department Of Medical-surgical Sciences And Translational Medicine, Sant’Andrea Hospital, University Sapienza, Rome, Italy

Contact E-mail Address: gloria.galli5@gmail.com

Introduction: Osteoporosis is a systemic skeletal disorder characterized by low bone density and micro-architectural deterioration with increase of bone fragility and consequent fracture risk. About 50–75% of patients (pts) with untreated coeliac disease (CD) suffer from bone mass loss (osteoopenia or osteoporosis). Despite this strong correlation, guidelines do not express with certainty on the need to undergo a dual-energy X-ray absorptiometry (DEXA) scan in every patient with new diagnosis of CD. Recently, the DEXA screening was suggested for CD peri-post menopausal females, males over 55 yrs, pts with overt malabsorption or with a history of fragility fractures. Studies on bone mineral density (BMD) in CD pts led to discrepant results, probably due to heterogeneous designs.

Aims & Methods: The aim of this study was to evaluate, in a cohort of consecutively newly diagnosed CD adults, the prevalence of BMD alterations at diagnosis time and to evaluate associated clinical features. From January 2004 to December 2016, 258 consecutive pts (F = 72.4%) were diagnosed with CD. All pts were adults (median age 38, range 18–72 yrs), had atrophic disease and were invited to undergo a DEXA within 3 months from diagnosis to screen for osteoporosis (T-score < -2.5) or osteopenia (T-score <-1 and ≥ -2.5). A total of 214 (82.9%) pts underwent the DEXA scan and were included in the study (F = 71.5%, median age 38, range 18–72 yrs). On the basis of DEXA results (cutoffs according to WHO classification) pts were divided into 3 groups: pts with normal BMD, with osteopenia, and with osteoporosis. For each patient, reported risk factors for low BMD (underweight, alcohol intake, drugs, menopause, smoke) and serological PTH values were assessed. The signs/symptoms leading to CD and their duration before diagnosis, autoimmune/not-autoimmune comorbidities, familiarity for CD, previous fractures and serological assays (specific antibodies for CD, ferritin, cholesterol, triglycerides, and albumin) were also assessed. All the variables described were analyzed and compared between the 3 groups. Logistic regression was performed including into the model those independent variables which showed a significant difference at univariate analysis.

Results: At the DEXA scan, 85 (39.7%) and 129 (60.3%) pts had normal or low BMD, respectively. Among pts with low BMD, 91 (42.5%) had osteopenia and 38 (17.8%) osteoporosis. At logistic regression, clinical features significantly associated with osteoporosis were male gender (OR 4.7; 95%CI 1.3 to 17.4), underweight (OR 8.1; 95%CI 1.8 to 35.3) and increased PTH values (OR 5.1; 95%CI 1.4 to 18.8), while age, sex, years and gastrointestinal symptoms at diagnosis time, menopause, alcohol intake and previous fractures were not associated. Clinical features significantly associated with osteopenia were underweight (OR 4.0, 95% CI 1.4 to 11.2) and increased PTH values (OR 2.6, 95%CI 1.1 to 6.4).

Conclusion: In newly diagnosed coeliac pts, the overall prevalence of BMD alterations was more than 60%, with osteoporosis in nearly 1/5. Osteoporosis was significantly associated with male gender, underweight and increased PTH. This study suggests that at CD diagnosis, DEXA scan might be of benefit, in particular in male underweight pts.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0614 SELF-REPORTED WHEAT SENSITIVITY IN AN AUSTRALIAN POPULATION STUDY

M. Potter1, M. M. Walker2, M. P. Jones1, N. Koloski1, G. Brogan3, S. Keely3, N.J. Talley1
1Faculty Of Health And Medicine And Priority Research Center For Digestive Health And Neurogastroenterology, The University of Newcastle Australia, Callaghan/Australia/NSW
2Dept. Of Anatomical Pathology, University of Newcastle Dept. of Anatomical Pathology, Newcastle/Australia
3Psychology, Macquarie University Psychology, North Ryde/Australia

Contact E-mail Address: Michael.Potter@hnehealth.nsw.gov.au

Introduction: Coeliac disease (CD) affects 0.6–1% of the population worldwide (1). Wheat avoidance in the absence of CD is common, and studies report a population prevalence of self-reported wheat or gluten sensitivity (SRWS) of...
up to 13% (2, 3). SRWS is defined as gastrointestinal (GI) or extra intestinal symptoms on ingestion of wheat or gluten-containing food (2, 3).

**Aims & Methods:** The aim of this study was to determine the prevalence of SRWS in an Australian population, define associated GI symptoms, and relate the diagnosis to demographic, lifestyle and medical factors. A total of 3825 people (mean age 58.4 years, age range 18–80 years and 47.5% males) randomly selected from the Australian population returned a mail survey (Digestive Health & Wellbeing Survey, response rate = 45%) which contained questions on wheat avoidance. GI symptoms, demographic, medical and lifestyle factors. We defined SRWS as people who reported gastrointestinal symptoms on ingestion of wheat based foods, but did not suffer from doctor diagnosed coeliac disease, inflammatory bowel disease or bowel cancer. Prevalence of SRWS is reported with 95% exact confidence intervals. The association between SRWS prevalence and potential risk factors was reported using unconditional logistic regression. The degree of differentiation of SRWS from health was evaluated through the area under the receiver-operator-characteristic curve.

**Results:** The prevalence of SRWS in this cohort was 13.5% (455/3331, 95% CI 12.5–14.9%). Only 11% (50/455) of these subjects had received a doctor diagnosis of wheat intolerance (SRWS). In this multivariate model, factors with no association with SRWS were age, sex, smoking, diabetes and recent antibiotic use. The model provided useful although imperfect differentiation of SRWS from health (AUC = 0.76).

**Introduction:** Epidemiological studies estimate a worldwide prevalence of CD of approximately 1:100 individuals, with a considerable proportion of patients remaining undiagnosed and untreated. According to a study performed by the National Health and Nutrition Examination Survey in the United States, the prevalence of self-prescribed GFD in an unselected population of subjects aged 6 years or older was 0.5%. Epidemiological studies report a prevalence of WA in American population of around 0.4% until 0.6%.

**Aims & Methods:** We visited in our unit of celiac disease and gluten-related conditions during 2016 423 (M:312, 111) new patients with clinical suspicion of CD. Of these 133 they were new celiac but were investigated suspected non celiac gluten sensitivity. After in vitro tests for the exclusion of celiac disease, to verify the real prevalence of food allergy particularly to wheat protein, in non celiac patient referred our unit for symptoms after gluten ingestion, all these patients underwent allergologic workup consists on: skin prick tests (SPT), in vitro Specific Immunoglobulin E (sIgE) assays and functional assays. SPTs and sIgE in vitro assays are the first-level diagnostics for WA. However, they are affected by a low predictive value. In particular, their low sensitivity can be explained by the fact that the commercial test reagents are mixtures of water/salt-soluble wheat proteins that lack allergens from the insoluble gluten fraction. The association between food allergy and celiac disease (CD) is still to be clarified. Gluten-related disorders are an epidemiologically relevant phenomenon with a global prevalence that is estimated around 5%, drawing the attention of the scientific community.

**Results:** The diagnosis of WA is classically based on skin prick tests (SPT), in vitro Specific Immunoglobulin E (sIgE) assays and functional assays. SPTs and sIgE in vitro assays are the first-level diagnostics for WA. However, they are affected by a low predictive value. In particular, their low sensitivity can be explained by the fact that the commercial test reagents are mixtures of water/salt-soluble wheat proteins that lack allergens from the insoluble gluten fraction. The association between food allergy and celiac disease (CD) is still to be clarified. Gluten-related disorders are an epidemiologically relevant phenomenon with a global prevalence that is estimated around 5%, drawing the attention of the scientific community.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0615 INSUFFICIENCY OF THE SMALL INTESTINAL ENZYMES MAY BE ONE OF THE CAUSES OF FUNCTIONAL BOWEL DISEASE**

**O. Akhmadullina1, A. Parfenov1, N. Belostotskaya2, E. Sabelnikova1, S. Bykova1, S. Kheimerki1**

1Small Intestines, Moscow Clinical Scientific Center, Moscow/Russian Federation
2Moscow Clinical Scientific Center, Moscow/Russian Federation

**Contact E-mail Address:** olgaach@mbox.ru

**Introduction:** Insufficiency of functional bowel disease is usually associated with disorders of visceral sensitivity and intestinal motility, which result from a dysfunction of the central nervous system, intestinal microflora and immune system.

**Aims & Methods:** We aimed to highlight importance of intestinal enzymes (glucoamylase, maltase, sucrase and lactase) in the etiology and pathogenesis of functional bowel disease. 74 patients with functional bowel diseases in age from 18 to 50 years (36 men and 38 women) were examined. According to Rome IV criteria (2016), 21 had irritable bowel syndrome (IBS) with predominance of diarrhea, 33 - functional constipation, 6 - IBS with predominant constipation, 4 - functional constipation and 10 - mixed type of IBS. Activity of the mucosa enzymes of the small intestine was determined by Dahlquist-Trinder method in duodenal biopsies obtained during esophagogastroduodenoscopy.

**Results:** Lactase deficiency was identified in 87.8% of patients, maltase deficiency - in 48.6%, sucrase deficiency - in 51.3%, the glucoamylase deficiency - in 85.1%. The activity of all investigated enzymes was reduced in 23 (31.1%) patients with functional bowel diseases, failure of 1 to 3 enzymes detected in 47 (63.5%). Normal activity of enzymes was observed in 4 (5.4%) patients.

**Conclusion:** In 70 of 74 (94.5%) patients with functional bowel disease and a disorder of the stool, abdominal pain and flatulence, there was a decrease in the activity of intestinal enzymes, which may be a cause of intestinal symptoms.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0617 A QUESTIONNAIRE-BASED SYMPTOM EVALUATION STUDY IN 381 PATIENTS DIAGNOSED WITH BILE ACID MALABSORPTION BY SEHCAT FROM 2003 TO 2016**

**C. Caruso1, V. Gerardi1, A. Armuzzi1, V. Gerardi1, A. Papa2, E. Cannarsa1, V. Gerardi1, A. Papa3, S. Ennas1, A. Romano1, G. Rapacchini2, L. Di Viti3**

1Allergology, A.Gemelli Foundation, Rome/Italy
2Complesso Integrato Columbus, Internal Medicine and Gastroenterology - Complesso Integrato Columbus Catholic University, Rome/Italy
3Gastroenterology & Internal Medicine-celiac Disease Unit, A.Gemelli Foundation, Catholic University of Sacred Heart, Rome/Italy

**Contact E-mail Address:** italodervit@tin.it

**Introduction:** Epidemiological studies estimate a worldwide prevalence of CD of approximately 1:100 individuals, with a considerable proportion of patients remaining undiagnosed and untreated. According to a study performed by the National Health and Nutrition Examination Survey in the United States, the prevalence of self-prescribed GFD in an unselected population of subjects aged 6 years or older was 0.5%. Epidemiological studies report a prevalence of WA in American population of around 0.4% until 0.6%.

**Aims & Methods:** We visited in our unit of celiac disease and gluten-related conditions during 2014 423 (M:312, 111) new patients with clinical suspicion of CD. Of these 133 they were new celiac but were investigated suspected non celiac gluten sensitivity. After in vitro tests for the exclusion of celiac disease, to verify the real prevalence of food allergy particularly to wheat protein, in non celiac patient referred our unit for symptoms after gluten ingestion, all these patients underwent allergologic workup consists on: skin prick tests (SPT), in vitro Specific Immunoglobulin E (sIgE) assays and functional assays. SPTs and sIgE in vitro assays are the first-level diagnostics for WA. However, they are affected by a low predictive value. In particular, their low sensitivity can be explained by the fact that the commercial test reagents are mixtures of water/salt-soluble wheat proteins that lack allergens from the insoluble gluten fraction. The association between food allergy and celiac disease (CD) is still to be clarified. Gluten-related disorders are an epidemiologically relevant phenomenon with a global prevalence that is estimated around 5%, drawing the attention of the scientific community.

**References**


**Contact E-mail Address:** heleneraskclausen@studmed.au.dk
as colchicine. Short-term outcome of having BAD is well-described, but long-term effects remain unclear. The aim of the present study was to describe long-term symptoms, adherence to treatment and quality of life in a well-defined group of patients with BAD.

**Aims & Methods:** Between 2003 and 2016, 559 patients referred to our hospital for diagnosis had abnormal small bowel transit. The prevalence of chronic idiopathic diseases was excluded in all of them. After an overnight fast and at the same time in the morning, all the subjects underwent evaluation of post-prandial modifications of serum levels of pro-inflammatory cytokines (IL-1β, IL-6, TNFα), endogenous antioxidant system (uric acid), glucose, insulin and lipopolysaccharide (LPS), measured as putative factors responsible for inflammatory response. Serum samples were collected at fasting and every 30 minutes for a 4-hour period after an oral gluten load of 2 gr (in 10 HV) or 20 gr (in the other 10 HV). The presence and severity of symptoms such as epigastric pain, epigastric burning, fullness, early satiety, abdominal pain, abdominal distention, bloating, flatulence, nausea, vomiting, belching, heartburn, regurgitation, diarrhea, and headache, were evaluated by visuo-analog scale at fasting and every 30 minutes in the post-prandial period.

**Results:** In comparison with mean fasting values, none of the measured parameters showed a significant increase in the post-prandial period after the ingestion of 2 gr of gluten. On the contrary, after the ingestion of 20 gr of gluten mean post-prandial values of TNFα and IL-6 showed a significant increase (2.45 ± 1.75 pg/mL and 0.65 ± 0.31 pg/mL) as compared to mean fasting values (1.17 ± 1.49 pg/mL and 0.29 ± 0.15 pg/mL; p < 0.05). Mean post-prandial values of uric acid were also significantly higher (74.98 ± 1.02 mmol/L vs fasting values 45.34 ± 10.08 mmol/L; p < 0.05). No significant differences were detected in IL-6, glucose, insulin and LPS d after the ingestion of the 20 gr gluten oral load. Symptoms were absent after both oral loads.

**Conclusion:** The ingestion of gluten even if not a low, oral load of gluten induces a significant post-prandial inflammatory response causing the activation of the main endogenous anti-oxidant system. In HV, these activations are not accompanied by a symptomatic response. Further studies are needed to investigate the inflammatory and anti-oxidant post-prandial response in patients with gluten-related disorders.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Results: A total of 224 patients entered the study. Of these, 81.3% (182) were women. During the use of IGB, patients lost an average of 15% of their body weight during follow-up, but without significant difference among groups: 2 years 10% to 19% of weight lost during treatment. The mean weight regain increased 1.5 times. No follow-up with a nutritionist after the procedure and who completed a whole year follow-up after device removal. The protocol was approved by the local ethic committee.

Contact E-mail Address: brunosander@hotmail.com

Introduction: Obesity is a global disease and its management includes pharmacological, psychological, and surgical therapies. Intra-gastic Balloon (IGB): Any form of therapy, including surgery, is flawed by weight regain in the long-term. IGB has gained popularity recently; however, there is a lack of studies addressing the use of IGB and its effect on weight control in the long-term. This study aimed to assess the weight regain in a large cohort of patients treated with IGB, with a time span from two to five years after the removal of the device.

Aims & Methods: All obese patients treated with IGB in a specialized obesity center, and that underwent balloon removal from June 2009 to June 2013 were included. Patients who agreed to participate were interviewed by a trained investigator in person and answered a questionnaire survey and had their body weight measured. Interviews started on July 2015 and ended on July 2016. Medical records of recruited patients were reviewed and the body weight at the moment of IGB implantation was registered. Patients included were stratified by BMI at the beginning of treatment and date of balloon removal and date interval (2, 3, 4 and 5 years) and all intervening factors related to weight control, as well as behavior habits were analyzed and compared with logistic multivariate analysis.

Results: A total of 224 patients entered the study, 10 of which completed a whole year follow-up after device removal. Of these, 81.3% (182) were women. During the use of IGB, patients lost an average of 15% of their body weight; representing a mean loss of 66% of excessive weight. Between 2 and 5 years after removal of IGB, 67% (150) of the subjects had regained weight; the mean weight regain was 4 kg during this period. Most patients (62%) regained 10% to 19% of weight lost during treatment. The mean weight regain increased during follow-up, but without significant difference among groups: 2 years [n = 10]: 4.66 ± 4.91 kg; 3 years [n = 83]: 8.66 ± 6.96 kg; 4 years [n = 54]: 9.99 ± 8.44 kg and 5 years [n = 3]: 19.96 ± 12.24; (p = 0.51). The lower the BMI at the beginning of treatment, the greater the weight regain after the IGB withdrawal. This correlation was inverse (r = -0.20) and significant (p < 0.01). The correlation was stronger and more significant with patients who had withdrawn the balloon at two years (r = -0.59, p < 0.01). Although patients who regrew in 2 years were stratified by BMI from 0 to 2.3 kg/m², 2.4 kg/m², 4.0 kg/m², 5.0 kg/m² at the end of a year follow-up, both parameters remained significantly lower than the baseline (P < 0.05). HbA1c was reduced during the treatment from 7.6 ± 1.6% to 6.6 ± 1.2% (P = 0.02) and increased to 6.8 ± 1.0% after 12 months follow-up (P = NS). Among 15 insulin-dependent patients (42%), insulin average dose was reduced by 65% (p = 0.05), but the dose was doubled after a year follow-up. Interestingly, the glycemic control in this insulin-dependent population was difficult to maintain as the coefficient of variation (CV) increased 1.9 times after the device removal (CV 0.23, p = 0.01). The lower the CV of adverse events, 47% of which were categorized as severe ones (two major bleedings and 2 hepatic absceses).

Conclusion: IGB is an effective tool for weight reduction glycemic control among insulin and non-insulin dependent diabetic patients. Moreover, substan-tial metabolic achievements were maintained at least a year after device removal. Since IGB bears a considerable amount of side effects, strategies to mitigate them are warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

% of weight regained * 2 years 3 years 4 years 5 years
<10% 20% (2) 15.6% (13) 18.5% (10) 33.3% (1)
Between 10 and 19% 70% (7) 62.7% (52) 59.3% (32) 66.7% (2)
Between 20 and 29% 10% (1) 14.5% (12) 14.8% (8) 0
Between 30 and 39% 0 2.4% (2) 1.9% (1) 0
Between 40 and 49% 0 1.2% (1) 5.6% (3) 0
Between 50 and 59% 0 2.4% (2) 0 0
Between 90 and 99% 0 1.2% (1) 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling during and after IGB treatment. A multidisciplinary approach is of the utmost importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0623 SYNBIOTIC (INULIN, LACTOBACILLUS, BIFIDOBACTERIUM AND SACCHAROMYCES BOULARDI) IMPROVES FATTY LIVER DISEASE BY VIRTUE OF ITS ACTION ON BIOMARKERS, BIOMARKERS

T. M. Falalyeyeva1, N. Kobyliak2, O. Tsyryuk3, L. Prybytko3, T. Beregovaya4, L. Ostapchenko5

1Taras Shevchenko National University of Kyiv, Kyiv/Ukraine
2National Bohomolets Medical University, Kyiv, Ukraine

Contact E-mail Address: nazariy.kobyliak@gmail.com

Introduction: NAFLD is the most important cause of chronic liver disease and is considered the hepatic manifestation of the metabolic syndrome associated with type 2 diabetes. The prevalence of NAFLD in the general population ranges 15–20% and it goes up to 70 to 90% in the obese population. The search of new non-toxic drugs for preventing the development of obesity is the most important challenge of modern science. The question about impact of probiotics and prebiotics on fat metabolism and obesity is being actively debated in the scientific literature. So the aim of the study was to investigate the effect of synbiotic (S) on development of experimental obesity in rats with NAFLD.

Aims & Methods: The study was carried out on 60 white rats, that were divided into 6 groups (I–III – males, IV–VI – females). I and IV groups were intact control (4-month old). Newborn rats of groups II and III x.c. in volume 8 µl were administered a saline or monosodium glutamate (MSG) (4 mg/g) at 2–10 days of life. Since the age of 1 month, rats of III and V group had been injected with water, rats III and VI groups - S (Inulin, Lactobacillus, Bifidobacterium and Saccharomyces boulardii) ("Opefera" World Medicine) in a dose of 1,94 mg/inulin. Introduction of the current study is to assess weight and glycemic control changes resulted from the device implantation and a year after the device removal. Between February 2013 and September 2016, 51 diabetic patients were treated with DBL in our center. This prospective observational study included 145 patients in 4 months of active treatment. However, adverse events and early removals were analyzed for the whole cohort. Blood tests, body weight and medications data were collected during scheduled visits and phone interviews. The primary end points were body weight and glycemic control changes a year after end points were the same parameters after device removal. The protocol was approved by the local ethic committee.

Results: Thirty-six patients (52.8% male) were treated for at least 9 months with the device, 10 of which completed a whole year follow-up after device removal. At the end of 12 months post implantation, the average body weight and BMI dropped from 109.5 ± 19.1 kg and 37.4 ± 5.0 kg/m² to 93.7 ± 20.4 kg and 33.3 ± 5.0 kg/m² at the end of a year follow-up, both parameters remained significantly lower than the baseline (P < 0.05). HbA1c was reduced during the treatment from 7.6 ± 1.6% to 6.6 ± 1.2% (P = 0.02) and increased to 6.8 ± 1.0% after 12 months follow-up (P = NS). Among 15 insulin-dependent patients (42%), insulin average dose was reduced by 65% (P = 0.05), but the dose was doubled after a year follow-up. Interestingly, the glycemic control in this insulin-dependent population was difficult to maintain as the coefficient of variation (CV) increased 1.9 times after the device removal (CV 0.23, p = 0.01). The lower the CV of adverse events, 47% of which were categorized as severe ones (two major bleedings and 2 hepatic absceses).

Conclusion: DBL is an effective tool for weight reduction glycemic control among insulin and non-insulin dependent diabetic patients. Moreover, substantial metabolic achievements were maintained at least a year after device removal. Since DBL bears a considerable amount of side effects, strategies to mitigate them are warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

% of weight regained * 2 years 3 years 4 years 5 years
<10% 20% (2) 15.6% (13) 18.5% (10) 33.3% (1)
Between 10 and 19% 70% (7) 62.7% (52) 59.3% (32) 66.7% (2)
Between 20 and 29% 10% (1) 14.5% (12) 14.8% (8) 0
Between 30 and 39% 0 2.4% (2) 1.9% (1) 0
Between 40 and 49% 0 1.2% (1) 5.6% (3) 0
Between 50 and 59% 0 2.4% (2) 0 0
Between 90 and 99% 0 1.2% (1) 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling during treatment. A multidisciplinary approach is of the utmost importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.
Also consumption of S led to reduction of pro-inflammatory cytokines and leptin and increased anti-inflammatory cytokines and adiponectin.

Conclusion: Thus, the introduction of S reduced the obesity, that shows the effectiveness of therapy for the prevention of obesity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Body weight, BMI and HbA1c changes at different timepoints

<table>
<thead>
<tr>
<th>Timepoint (months)</th>
<th>Mean weight in kg (±SD, range)</th>
<th>Mean BMI (±SD, range)</th>
<th>Mean HbA1c in % (±SD, range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115.8 (45.4; 88–196)</td>
<td>40.9 (10.3; 35.3–59.2)</td>
<td>9.1 (1.3; 8–10.7)</td>
</tr>
<tr>
<td>6</td>
<td>97.4 (39.8; 72–164)</td>
<td>29.9 (2.2; 26.4–51.2)</td>
<td>7.0 (0.6; 6.6–8.3)</td>
</tr>
<tr>
<td>12</td>
<td>95.0 (38.8; 72–164)</td>
<td>33.5 (9.0; 29.549.5)</td>
<td>6.7 (0.9; 5.9–7.8)</td>
</tr>
<tr>
<td>16 (0)</td>
<td>91.7 (37.8; 75–164)</td>
<td>34.3 (8.6; 29.3–49.5)</td>
<td>7.7 (1.6; 6.2–9.9)</td>
</tr>
<tr>
<td>22 (6)</td>
<td>93.2 (40.6; 63–164)</td>
<td>32.8 (9.7; 24.6–49.5)</td>
<td>7.0 (1.0; 5.7–7.7)</td>
</tr>
<tr>
<td>28 (12)</td>
<td>92.5 (43.6; 61–160)</td>
<td>31.5 (9.1; 23.8–48.6)</td>
<td>7.0 (0.7; 6.3–7.7)</td>
</tr>
</tbody>
</table>

Conclusion: The results of this observational study show that re-implantation of the DJBL is viable and safe even only 4 months after explantation. After re-implantation, weight and HbA1c levels decreased once more.

Disclosure of Interest: J. Stein has received speakers’ honoraria from GI Dynamics. All other authors have declared no conflicts of interest.

P0626 THE COMPARATIVE EFFICACY OF OBESITY TREATMENTS IN YOUNG PEOPLE - A SYSTEMATIC REVIEW AND META-ANALYSIS

S. S. Selvendran, Penney, N. Aggarwal, A. Darzi, S. Purkayastha
Surgery And Cancer, Imperial College London, London/United Kingdom

Contact E-mail Address: ss9621@ic.ac.uk

Introduction: Obesity in the young population is becoming increasingly prevalent. It is associated with short- and long-term consequences. Early and effective interventions are paramount. Current treatment options include: lifestyle modifications, pharmacological therapies, endoscopic treatments and bariatric surgery. However, the relative effectiveness of these treatments in this cohort remains unclear.

Aims & Methods: To systematically identify and meta-analyse studies evaluating treatments that reduce body mass index (BMI) in overweight and obese young people. A systematic literature review of EMBASE and MEDLINE databases was conducted. Studies were included/excluded based on pre-specified eligibility criteria. Included patients were 21 years or younger. Lifestyle modification and pharmacological therapy searches were restricted to randomised control trials.

Results: 16,372 studies were identified with 80 studies complete with sufficient data for meta-analysis. Bariatric surgery caused the most weight loss in the short- and medium-term [pooled estimate of mean BMI loss: 13.77 kg/m²]. Lifestyle modifications and pharmacological therapy had a more modest impact on weight [pooled estimate of mean BMI loss: 0.99 kg/m² and 0.94 kg/m² respectively]. Individual studies demonstrated that endoscopic treatment results in short-term BMI reduction, however insufficient data prevented meta-analysis.

Conclusion: This is the first systematic review and meta-analysis to comprehensively summarise and quantify the comparative efficacy of BMI reducing treatment options in the obese, young population. Currently, bariatric surgery is rarely considered in this young cohort. However, due to its high efficacy, physicians and patients should have a lower threshold for considering bariatric surgery when lifestyle and pharmacological interventions have failed. Total or partial surgical interventions provide smaller but statistically significant impacts on BMI reduction. There should be effective communication discussing the relative efficacy of all treatment options and their associated complications between those involved. This knowledge will assist clinicians in determining a holistic, patient-centred treatment programme for obese, young patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0627 FOOD-DERIVED MICRORNA AND INFLUENCE ON THE FECAL MICRORNA EXPRESSION

J. Link1, C. Langner1, A. Canbay1, P. Malfertheiner1, A. Link1
1 Department Of Gastroenterology, Hepatology And Infections Diseases, Otto-von-Guericke University, Magdeburg/Germany

Contact E-mail Address: alinkmail@gmail.com

Introduction: Tumor development is a multistep process, which involves genetic and environmental factors. Diet is among the most important contributing factors and processed and red meat has been classified as carcinogenic for colorectal cancer. MicroRNAs (miRNAs) are functional, ubiquitously present molecules with great impact on tumor initiation and progression. Exogenous microRNA or xenomiR have been identified in sera from different species suggesting an active cross-kingdom trespassing through biological barriers during digestive process.

Aims & Methods: In the present work, we evaluated whether miRNAs are present in various foods, and if miRNAs may be degraded through cooking and other forms of food processing. Furthermore, we tested if short-term vegetarian or meat-rich diet may influence human or plant-derived miRNA in feces and blood. For this purpose, six healthy subjects were asked to adhere to vegetarian or meat rich diet for 5 to 7 days and fecal and blood specimens were obtained at different time points. Plant-miRNAs were further investigated in gastric and colon mucosa. To evaluate the presence of miRNA in food, we selected several common foods prior and after cooking/processing. Quantitative real-time PCR was performed using TaqMan Assay.
Results: All analyzed microRNAs were present in all studied foods with highest expression measured by miR-16 and miR-155. Especially, hash, beef and salmon showed the highest miRNA expression, while lowest expression was found in cheese and milk. Food processing led to only marginal changes (max. 1.5-fold) in miRNA expression and thus demonstrating its stability against degradation. Short-term changes in diet (from usual to vegetarian and to meat-rich diet) in healthy subjects was not associated with variation in miR-21, miR-155 and miR-16 expression. Interestingly, in comparison to several previous reports, we repeatedly failed to detect any plant miR-168 in sera. However, when evaluated with a significant decrease in miR-168 level in feaces (up to 8-fold), while meat-rich diet was associated with slight decrease if compared to the starting time point (mean±SD 0.031±0.002 vs no diet vs 0.025±0.042 for vegetarian vs. 0.0016±0.00096 for meat-rich. p<0.03 Kruskal-Wallis test, with p<0.05 for Dunns multiple comparison test for vegetarian vs meat-rich).

Conclusion: The results of this study show that various foods provide a great source of microRNAs, which remains stable despite processing. We further demonstrated that short-term changes in diet do not impact on the miRNA expression pattern in feaces and blood supporting its value as biomarkers. A functional role of diet-induced increase in plant-derived miRNA expression needs further evaluation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0628 NEUROMedin U BLOCKS GASTRIC EMPTYING THROUGH VAGAL-DEPENDENT MECHANISMS AND IMPROVES ORAL GLUCOSE TOLERANCE

A. Jarry1, N. Merah1, M. Fiamma2, L. Bodineau1, A. Bado3, J. Le Beye1, M. Le Gall4

1INSERM U1149, Paris/France
2INSERM U1158, Paris/France

Contact E-mail Address: annecharlottejarry@hotmail.fr

Introduction: The gut and brain peptide neuromedin U (NMU) is reported to decrease food intake and body weight, and to improve oral glucose tolerance suggesting that NMU exerts an incretin effect in the gut. NMU is thus considered as a promising candidate for the treatment of obesity and diabetes. However, and in contradiction with previous observations, NMU was recently presented as a contradiction with previous observations, NMU was recently presented as a promising candidate for the treatment of obesity and diabetes. However, and in contradiction with previous observations, NMU was recently presented as a 'decretin' hormone able to decrease insulin secretion. The pathways through which NMU controls glycemia are thus uncertain and we sought to clarify some of NMU mechanisms of action on glucose homeostasis.

Aims & Methods: Oral (OGTT) and intraperitoneal (IPGTT) glucose tolerance tests were performed after an intraperitoneal injection of NMU or PBS in C57Bl6 mice after laparotomy or a transduodenal laparoscopy in the same mice group. During OGTT, blood was sampled to measure insulin secretion. [14C]-Glucose uptake was assessed in isolated intestinal loops in presence or absence of NMU. Gastric retention of a phenol red gavage and total intestinal transit time were evaluated after an intraperitoneal injection of NMU or PBS. Activation of vagus nerve neurons by intraperitoneal injection of NMU was assessed by cFos immunohistochemistry in the nucleus of the solitary tract (NTS) and the dorsal nucleus of the vagus (DMV). Direct impact of NMU on pylorus contraction was examined ex vivo in isolated pyloruses. Results: A single intraperitoneal injection of NMU in C57Bl6 mice prevented the rise of glycemia following an oral but not an intraperitoneal load of glucose (OGTT versus IPGTT). Unexpectedly, during the OGTT, NMU injection prevented food intake and only slightly improved peripheral insulin sensitivity. Furthermore intravenous [14C]-glucose uptake in isolated intestinal loops was barely reduced by NMU addition (~17% P<0.05 vs PBS). Actually NMU injection blocked gastric emptying (gastric retention of a phenol red gavage at 30min: +285% P<0.001 vs PBS). This effect was partly prevented in vagotomized mice. In addition, injection of NMU induced c-fos expression in the nucleus of the solitary tract (NTS) of control but not vagotomized mice. In isometric chambers, NMU directly induced pyloric contracture in a dose dependent manner (basal contraction +21%, 7% at 10-6 M).

Conclusion: These data demonstrate that a single intraperitoneal injection of NMU blocks gastric emptying directly by inducing pyloric contraction and indirectly via afferent vagal fiber activation. Through the blockade of gastric emptying, NMU reduces intestinal nutrient absorption and thus improves oral glucose tolerance. The gastric emptying blockade induced by NMU could also contribute to its anorexigenic effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0629 LOW FODMAP DIET & PREBIOTIC GALACTOOLIGOSACCHARIDES IMPROVE IRRTABLE BOWEL SYNDROME SYMPTOMS AND RESPONSE TO LOW FODMAP DIET IS PREDICTED BY URINE METABOLOME, STOOL SHORT-CHAIN FATTY ACIDS AND VOLATILE ORGANIC COMPOUNDS: A RANDOMISED CONTROLLED TRIAL


1King’s College London, London/United Kingdom
2University of Liverpool, Liverpool/United Kingdom
3Barts Health NHS Trust, London/United Kingdom
4Guy’s and St Thomas’ NHS Foundation Trust, London/United Kingdom
5Guys and St Thomas Hospital Dept. of Gastroenterology - London/United Kingdom

Contact E-mail Address: bridgettewilson@kcl.ac.uk

Introduction: Dietary restriction of fermentable carbohydrates (low FODMAP diet, LFD) is effective at managing symptoms in 50-80 percent of patients with irritable bowel syndrome (IBS). Prebiotic B-galacto-oligosaccharide (B-GOS; HOST-G004) also reduce symptoms in IBS however the combination of the two therapies has not been investigated. We investigated that differentiates those who respond to the LFD from those who do not is unclear.

Aims & Methods: This randomised controlled trial aimed to investigate whether: 1) addition of prebiotic B-GOS could improve symptoms of IBS alongside the LFD and 2) if urinary metabolites, faecal short-chain fatty acids (SCFA) or volatile organic compounds (VOC) could identify factors at baseline that predict response. Sixty-nine adults fulfilling Rome criteria for IBS were recruited to a 3-arm RCT: control (sham diet/placebo), LFD (LFD/placebo) or LFD plus B-GOS (LFD/B-GOS) for four weeks.

Validated questionnaires (Global symptom question and gastrointestinal symptom rating scale) assessed GI symptoms (response) and urine and stool samples were collected for analysis at baseline and week 4. To examine the relationship between responders and non-responders, urine metabolomics (700 MHz 1H-NMR), stool SCFA (gas liquid chromatography (GLC)) and stool VOC (GC-mass spectrometry) were analysed on samples at baseline and 4-weeks. Urine metabolomics spectra and VOC profiles were analysed using unsupervised principal component analysis (PCA) and supervised pattern recognition methods (orthogonal partial least square discrim- minant analysis (OPLS-DA)) or PLS-DA respectively. Stool SCFA were compared using t-tests, models of prediction were tested using receiver operator characteristic (ROC) curves.

Results: There was a significant difference in response rates (adequate relief) between control (30%), LFD (50%) and LFD/B-GOS (67%) (p = 0.046), with post-hoc differences specifically between control and LFD/B-GOS (p = 0.015). Interestingly IBS symptoms improved markedly in the LFD/B-GOS group compared to control. In the LFD group only, there was a significant difference in the urine metabolome between responders and non-responders at both baseline (Q2 = 0.296 vs randomised = 0.175) and at 4-weeks (Q2 = 0.485 vs randomised = 0.203). At baseline, there were significant greater stool isobutyrate between responders (51.4mg/100g) and non-responders (31.9mg/100g; p = 0.04), with ROC curves supporting this as a predictor of response (AUC = 0.747, p = 0.063). Finally, there was a significant difference in VOC profiles between responders and non-responders to the LFD at baseline (p = 0.04) VOC profiles, modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks (p = 0.02).

Conclusion: Addition of B-GOS to the LFD improves symptoms in IBS. Urine metabolomics, stool SCFA and VOC profiling are relatively low-cost and non-invasive techniques that may predict response to the LFD as well as helping to further understand the underlying mechanisms. Prospective clinical trials to test these algorithms are warranted and may lead to personalised therapy for patients with IBS.

Disclosure of Interest: B. Wilson: BW is funded by a PhD studentship provided by Claudioso Biosciences

All other authors have declared no conflicts of interest.
Introduction:
Patients suffering from chronic radiation-induced small bowel disease (RISBD) after cancer treatment have similar symptoms as patients with IBS (irritable bowel syndrome), despite dissimilar pathological origin. RISBD is a common late effect after pelvic radiation therapy for gastrointestinal (GI), gynecological and urological cancer. The delayed development of ischemia, fibrosis, dysmotility and malabsorption in GI tissue, leads to IBS-like symptoms like abdominal pain, diarrhea, constipation and bloating. The low FODMAP diet (fermentable oligo-, di-, mono-saccharides and polyols) diet (LFD) is a widespread management strategy for IBS. The aim of the conducted study was to investigate the effects of LFD on symptoms and health related quality of life (HRQOL) for patients with chronic RISBD.

Aims & Methods:
In an open pilot study, 11 patients (mean age 46 years) with RISBD related IBS symptoms were instructed to follow LFD throughout a 4-week intervention period. The Severity Scoring System (IBS-SSS) and IBS Symptom Questionnaire (IBS-SQ) were used to assess symptoms. An Ad hoc questionnaire measured grade of tissue damage and typical RISBD complaints (focal incontinence, rectal mucus and rectal bleeding). Short Form Nepean Dyspepsia Index (SF-NDI) and 12-item Short Form Health Survey (SF-12) were used to evaluate HRQOL. A 3-day food record was used to estimate baseline intake of FODMAPs, to reveal dietary changes and to assess adherence to the diet. All schemes were completed at baseline and at 4 weeks. The study included no control group.

Results: FODMAP intake was successfully reduced, and main additional changes in the diet were reduced intake of energy, carbohydrates and fiber. The adherence to the diet was high (mean 94.8%). IBS symptoms improved significantly based on mean total score of IBS-SSS and IBS-SQ, which changed from 310.2 ± 4.1 to 15.7 ± 10.1 (p = 0.002), respectively. The severity of abdominal pain, abdominal distension, belching/flatus, constipation, diarrhea, early satiety, dissatisfaction with bowel habits and interference with life in general, improved significantly. Tendencies of improvement were also measured in comorbidity complaints (nausea, headache, backache, fatigue and muscle pain) and typical RISBD complaints. HRQOL improved based on SF-NDI total score, which changed from 30.5 ± 9.4 to 18.3 ± 8.2 (p = 0.001) and based on mental (p = 0.047) and physical (p = 0.134) component summary score of SF-12.

Conclusion: The low FODMAP diet seems effective in alleviating IBS symptoms, and improving HRQOL in patients with RISBD. High compliance to LFD is possible with adequate diet counseling and continuous guidance. Further controlled studies with larger sample size should be conducted to verify our results and hopefully enable the implementation of LFD as a future management strategy for chronic RISBD.

Disclosure of Interest: All authors have declared no conflicts of interest.
is similar to the oral glucose-stimulated secretion of glucagon-like peptide 1 (GLP-1) via a secretin hormone secreted by the enteroendocrine L cells (EEC) from the distal gut. GLP-1 and glucagon, both originate from the same proglucagon precursor, differently processed by proglucagon convertase 2 (PC2) into glucagon in pancreatic α cells and by prohormone convertase 1/3 (PC1/3) into GLP-1 in pancreatic L cells.

Aims & Methods: We hypothesized that, after pancreatectomy, proglucagon can also be processed into glucagon in EEC. We developed a 75% subtotal pancreaticectomy model in C57Bl6 mice. Control (Ct) mice underwent a laparotomy. Post-surgery, blood plasma was measured and oral glucose tolerance tests (OGTT) were performed after 1 week. Insulinemia and glucagonemia were also measured in fed and fasted mice and during OGTT. After 2 weeks, animals were sacrificed and the remnant pancreas was sampled for glucagon and insulin immunohistochemistry (IHC) and alpha- versus beta-cell mass quantification. Proximal and distal intestinal segments were sampled for morphometric analyses as well as measurement of prococonvertase and proglucagon mRNA levels. Colonic segments were incubated in a glucose-enriched medium for one hour and glucose-induced secretion of glucagon and glucose-mediated lysosomal enzyme release were measured in the supernatant.

Results: As soon as one day post-surgery, pancreatectomized (Px) mice developed a hyperglycemia that maintained for over a week (351 mg/dl in Ct mice, P < 0.05, 5 days post-surgery). This hyperglycemic state was accompanied by an oral glucose intolerance (area under the curve >278% in Px mice, P < 0.05 vs Ct mice, 1 week post-surgery). During OGTT, intestinal glucose absorption increased (slope between 0 and 15 min=69.9% in Px mice P < 0.01 vs Ct mice, 1 week post-surgery). Glucagonemia increased in fasted pancreatectomized mice (+146.6% in Px mice P < 0.01 vs Ct mice 1 week post-surgery). After sacrifice, alpha cell mass was decreased in the remaining pancreas (~79.25% in Px mice P < 0.05 vs Ct mice, 2 weeks post-surgery). Hyperplasia of the proximal colon to secrete glucagon and/or vasoactive intestinal polypeptide was observed (+290.6% in Px mice P < 0.05 vs Ct mice, 2 weeks post-surgery). In pancreatectomized mice, an hypothyroidism of the duodenum was associated with an increase in crypt depth (+77.7%, in Px mice P < 0.05 vs control mice, 2 weeks post-surgery) and villus height (+53.8% in Px mice P < 0.05 vs control mice, 2 weeks post-surgery).

Conclusion: These data establish an ability of the whole gut to adapt in response to pancreatectomy. The upper intestine (duodenum) become hyperplastic and more resembled small intestinal enzyme response to absorptive glucose. The distal intestine (colon) is able to produce glucagon and may participate to the development of the reported hyperglucagonemia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0635 USE OF ALTERNATIVE LIPID EMULSION IN NON-CRITICALLY ILL PATIENTS IN ACUTE HOSPITAL SETTING

E. Salazar1, P. Ghosh1, V. Tan¹, T. Pang¹, B. Y. Poh¹, L. B. Tan¹, K. L. Loy¹, J. N. C. Chong¹, D. H. L. Ng¹, K. L. Ling¹, Y. T. Wang¹
1Gastroenterology And Hepatology, Singapore General hospital, Singapore
2Centre For Quantitative Medicine, Duke-National University of Singapore Medical School, Singapore/
3Gastroenterology And Hepatology, Tan Tock Seng Hospital, Singapore

Contact E-mail Address: ennaliza.salazar@sgh.com.sg

Introduction: Soybean oil intravenous lipid emulsion (IVLE) is also known as conventional lipid is rich in linoleic acid (ω-6 PUFA). α 6 PUFA may exaggerate inflammatory response and indirectly detrimental in the critically ill patients. To overcome this, the use of alternative IVLEs such as medium chain triglycerides (MCT), fish oil and olive oil alone or in combination with soybean oil IVLE have been used to lower the content of ω-6 PUFA. Most studies on alternative IVLEs have been conducted in the critically ill patients, elective surgical patients and cancer patients. No previous studies have evaluated the clinical outcomes of several different IVLEs in non-critically ill patients in acute hospital setting.

Aims & Methods: The purpose of this study is to determine whether there is a difference in clinical outcome amongst patient who received conventional soybean oil IVLE versus alternative IVLEs in non-critically ill patients in acute hospital setting. All patients on parenteral nutrition (PN) were identified in a prospective compilation database from July 2007 to September 2010 and were analysed retrospectively. Patients were assessed based on the IVLE received, namely soybean oil based (Lipofundin-N 20%, type 1), MCT oil based (Lipofundin-MCT 20%, type 2), olive oil based (ClinOleic, type 3) and fish oil containing (Lipemid, type 4). Patients must receive PN for at least 5 days, have no central surgical ward or high dependency unit not requiring invasive/non-invasive ventilator support or inotropes support. Exclusion criteria included patients who received less than 5 days of PN, intensive care unit (ICU) patients, PN started in ICU and continue in general ward or HDU, PN restarted in less than 3 days after readmission and in patients on invasive/non-invasive ventilator support or inotropes support and home PN patients.

Results: 537 patients were started on PN and 388 patients were included in the study. 90 patients were on type 1 (soybean based) IVLE, 60 patients were on type 2 (MCT based) IVLE, 141 patients were on type 3 (olive oil based) IVLE and 97 patients were on type 4 (fish oil) IVLE. Baseline characteristic were similar in four groups of IVLEs. Majority of PN were initiated in patients admitted under surgical team. There were no difference in terms of mortality, readmission and infection rate between conventional and alternative IVLE as a group, odd ratio (OR) was 0.66 (CI 0.36–1.24; p = 0.16), 1.71 (CI 0.84–3.73; p = 0.15) and 0.90 (CI 0.55–1.49; p = 0.73) respectively (as shown in table 1). The length of stay in log-scale was significantly lower in alternative IVFE as a group (p = 0.03). There were no difference in terms of mortality, readmission and infection rate between conventional IVLE versus each of the alternative IVLE.

Table 1: Clinical outcomes of IVLE versus alternative IVLE as a group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Conventional IVLE (n)</th>
<th>Alternative IVLE (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Yes (N) No (N)</td>
<td>21 (70) 49 (248)</td>
<td>66 (0.36–1.24) 0.16</td>
</tr>
<tr>
<td>Readmission Yes (N) No (N)</td>
<td>12 (58) 65 (183)</td>
<td>1.71 (0.84–3.73) 0.15</td>
</tr>
<tr>
<td>Infection Yes (N) No (N)</td>
<td>41 (77) 116 (204)</td>
<td>0.90 (0.55–1.49) 0.73</td>
</tr>
<tr>
<td>Length of stay (Mean) (SD) log-scale</td>
<td>3.58 (0.59) 3.43 (0.37)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Conclusion: Length of stay was significantly lower in alternative IVLE compared with conventional IVLE. However, there were no clinical difference in terms of mortality, readmission and infection between conventional and alternative IVLE in non critically ill patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: Few prospective studies have been published on small number of patients. Data on complications and mortality rates are generally retrospective and only method of choice for medium- and long-term enteral feeding and is nowadays the mortality of patients after PEG insertion or PEG replacement. This is a multicenter prospective study.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

References
National Patient Safety Agency Report 2003/PSA05 Reducing the harm caused by misplacnon gastrostic feeding tubes 2005
Lee S and Mason E. Competence in confirming correct placement of nasogastric tube. BMJ 2005. In 2011 the NPSA made this a ‘never event’. The only acceptable methods of checking the position of an NG tube are: pH < 5.5 on aspirate or confirmation on CXR (CXR) by competent medical staff. Reporting a CXR for NG tube position is a frequent request particularly for junior doctors out of hours. Pracise varies across the UK - some trusts require NG checking to be done only by senior clinicians (medical registrars or consultants) and some only allow reporting by a consultant radiologist. We assessed documentation of NG position on CXR by medical registrars from the region to find out if documentation was adequate, as would be expected of senior clinicians. NPSA guidance suggests four points should be documented in the medical notes to confirm NG position: 1. Does the tube follow the contours of the oesophagus and avoid those of the bronchi? 2. Does the tube clearly bisect the carina or the bronchi? 3. Does it cross the diaphragm in the midline? 4. Is the tip clearly visible below the left hemidiaphragm? All four criteria were met in only 17.6% of responses and answers were considered incorrect in 20.5%. An aide-memoir sticker with an abbreviated version of the above four points, time, date, doctor signature and whether tube is safe to use or not with Yes/No answers, is used on some wards in Southampton and we assessed whether its use would improve quality of reporting both a correctly placed and misplaced NG tube.

Aims & Methods: Medical registrars from first to final year of specialist training and from various specialties were presented with a CXR showing a correctly sited NG tube and were asked to complete a sticker answering yes or no, to check position and whether it was safe to use. Following this they were presented with an incorrect CXR showing an incorrectly sited NG tube and asked to use the sticker to check position. The CXR was projected and anonymous responses collected after sufficient time for the group to complete both stickers.

Results: 31 complete responses were obtained for the correctly sited tube with 58% stating that it should be used and 42% that they would not use the tube without further review. 10 incomplete responses were obtained and therefore 86% of responses met NPSA guidance for reporting CXR for NG position. 28 complete responses were obtained for the incorrectly sited tube and 100% stated that the sticker should not be used.

Conclusion: Use of the sticker increased compliance with NPSA guidance for reporting NG tube position from 17.6% to 86%. The misplaced tube was correctly reported and not used in 100% of responses. The correctly sited tube was reported as safe to use in 58%. The CXR used was of an anonymous real patient and was slightly rotated to reflect a real-life scenario which meant the tube was slightly off the midline. In this real-life scenario some trainees would be happy to make a judgement considering these factors and others may be cautious and follow the sticker's examples. We assessed documentation of NG tube position on CXR by medical registrars from the region to find out if documentation was adequate, as would be expected of senior clinicians. NPSA guidance suggests four points should be documented in the medical notes to confirm NG position: 1. Does the tube follow the contours of the oesophagus and avoid those of the bronchi? 2. Does the tube clearly bisect the carina or the bronchi? 3. Does it cross the diaphragm in the midline? 4. Is the tip clearly visible below the left hemidiaphragm? All four criteria were met in only 17.6% of responses and answers were considered incorrect in 20.5%. An aide-memoir sticker with an abbreviated version of the above four points, time, date, doctor signature and whether tube is safe to use or not with Yes/No answers, is used on some wards in Southampton and we assessed whether its use would improve quality of reporting both a correctly placed and misplaced NG tube.

Disclosure of Interest: All authors have declared no conflicts of interest.
**M. Tierney, L. Bakewell, E. Buse, C. Rutter, C. Pither, T. Smith**

**Nutrition, University Hospitals Southampton, Southampton/United Kingdom**

**Contact E-mail Address:** meave.tierney@nhs.net

**Introduction:** Intestinal failure patients by definition have reduced ability to absorb fluid and macronutrients through the gastrointestinal tract. Type two intestinal failure patients require months of intravenous nutrition (parenteral nutrition) for weeks or months either in hospital or at home. Type three intestinal failure patients generally require long-term parenteral nutrition (PN), which is given at home (HPN) and may be life-long. In addition to a reduction in the ability to absorb macronutrients, patients on long-term PN have a reduction in absorption of micronutrients (copper, zinc, selenium and manganese) and vitamins (A, B12, D and E) which are required for metabolism and enzymatic reactions at a cellular level. PN is routinely supplemented with micronutrients and should ideally be able to occur at high levels and deficiency can cause a variety of symptoms. ESPEN guidelines recommend that serum vitamin and trace element levels be checked at baseline and at least once per year. NICE guidelines specify more frequent monitoring for in-patients and that selenium, manganese and vitamin D should be checked three to six monthly in HPN patients. Some trace elements (copper and zinc in particular) are affected by acute illness. Current local practice is to avoid checking levels until there is evidence that inflammation or infection has resolved.

**Aims & Methods:** Our aim was to audit the frequency of micronutrient screening in our cohort of HPN patients. All type two and three intestinal failure out-patients were included. Current in-patients were excluded due to the effect of acute illness on micronutrient levels. Patients on parenteral fluid rather than nutrition were excluded as current guidelines give recommendations for HPN patients and do not specify recommendations if fluid alone is required. A search of the blood results system was performed for all micronutrient results from one full year to the date of the search. Results were recorded in spreadsheet format and analysed. Many patients live out of the region; however, many local trusts do not have the laboratory facilities to check micronutrient levels so they tend to be done in Southampton. If no results were available on the Southampton system then the local hospital was contacted for local results if available.

**Results:** 57 home parental nutrition patients were identified. 51 (89.5%) of these patients had micronutrients checked at some point during their care. 44 of 49 (89.7%) had micronutrients checked within one year (two of the 51 had only recently so did not have results within a year). 32 (61.5%) of those who had micronutrients checked had them done within the last six months. 6 patients had never had micronutrients checked. One had them requested just prior to the time of audit but results were not yet available. Two were out of area and had not been seen within the last year. One of these commenced PN in 2015 and found it difficult to attend clinic. The other had not been seen in clinic due to an administrative error and has now been seen with micronutrients requested. Two further patients had never had micronutrients checked due to a persistently raised CRP.

**Conclusion:** Despite a lack of clarity between guidelines about the frequency of monitoring of micronutrients, it is recommended that HPN patients receiving long-term intravenous nutrition should have regular monitoring to reduce risk of deficiency or toxicity. The majority of our cohort of HPN patients had micronutrients checked annually and over half were checked six monthly. This is compliant with ESPEN guidelines; however, we need to aim for 100%. We have introduced a template to use in clinic to trigger review of results and request micronutrients when required. Alongside this we have introduced a virtual ward round to remotely review all out-patients regularly and plan ahead to request blood tests when required. Following the introduction of these measures we will repeat the audit to find out if the situation has improved.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition NICE Clinical guideline [CG32] Published date: February 2006

**P0639 CLINICAL NUTRITION - ARE WE IGNORANT OR NEGLIGENT?**

T.M.A. Gan, R. Asokkumar, E. Salazar

Gastroenterology And Hepatology, Singapore General Hospital, Singapore

**Contact E-mail Address:** aaron.gan2@molhm.com.sg

**Introduction:** Early recognition and delivery of nutritional care by physicians has been shown to improve outcomes in malnourished hospitalized patients. However, physicians encounter multiple barriers in providing appropriate nutrition to hospitalized patients. Comprehensive nutrition assessment and nutritional training in medical education have been introduced to overcome these barriers, there appears to be a discrepancy in practice amongst physicians despite the availability of these resources.

**Aims & Methods:** We aim to assess the knowledge and attitudes of physicians towards clinical nutrition in a large tertiary teaching hospital in Singapore. An anonymous questionnaire comprising 15 multiple-choice questions from standard nutrition textbooks was administered. The questionnaire was designed to assess (a) recognition of nutritional needs of hospitalized patients, (b) knowledge on the role of clinical nutrition, and (c) application of nutritional intervention in common clinical practice. We included consultants, fellows and residents working in units where nutritional problems were common. Finally, we conducted a separate 5-question opinion survey to assess each participant’s nutritional training and exposure, based on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”.

**Results:** A total of 305 physicians volunteered to participate in this study. Forty (15%) did not reveal their specialty or staff grade and were excluded from analysis. The remaining 265 responders comprised 77 (29%) consultants, 58 (22%) fellows, and 130 (49%) residents. Amongst them, 232 (87%) were from medical disciplines and 33 (13%) from surgical disciplines. The median aggregate score (out of a maximum score of 15) obtained by consultants, fellows and residents was 6.0±2.2 (range 2–12), 7.0±1.8 (range 3–11) and 7.0±1.8 (range 1–10) respectively. All 3 grades of physicians achieved less than 50% of the maximum possible score. No significant difference in median aggregate score was observed between physicians from medical disciplines (6.5±1.9) and those from surgical disciplines (7.0±1.8). However, gastroenterologists performed significantly better than non-gastroenterologists (median aggregate score 9.0±2.2 vs 6.0±1.8, p < 0.001). In the opinion survey, a majority of physicians (63%) believed that nutrition-related teaching was inadequate during residency training and 44% felt that clinical nutrition was accorded insufficient attention during ward rounds. Only 33% of responders reported that they performed nutritional screening on admission, and a mere 10% were confident in providing nutrition counselling to malnourished patients. Interestingly, their overall performance was not different from that of other participants (see Table 1).

**Table 1:** Median aggregate scores by grade, specialty and response in opinion survey

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Median aggregate score ±SD</th>
<th>Range</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Grade</td>
<td>Consultant (n = 77)</td>
<td>6.0±2.2</td>
<td>2.0–12.0</td>
</tr>
<tr>
<td></td>
<td>Fellows (n = 58)</td>
<td>7.0±1.8</td>
<td>3.0–11.0</td>
</tr>
<tr>
<td></td>
<td>Residents (n = 130)</td>
<td>7.0±1.8</td>
<td>1.0–11.0</td>
</tr>
<tr>
<td>Specialty</td>
<td>Medical disciplines (n = 232)</td>
<td>6.5±1.9</td>
<td>1.0–12.0</td>
</tr>
<tr>
<td></td>
<td>Surgical disciplines (n = 33)</td>
<td>7.0±1.8</td>
<td>2.0–10.0</td>
</tr>
<tr>
<td></td>
<td>Gastroenterologists (n = 25)</td>
<td>9.0±2.2</td>
<td>3.0–12.0</td>
</tr>
<tr>
<td></td>
<td>Non-gastroenterologists (n = 240)</td>
<td>6.0±1.8</td>
<td>1.0–11.0</td>
</tr>
<tr>
<td>Performance screening on admission</td>
<td>Agreed (n = 81)</td>
<td>7.0±2.0</td>
<td>1.0–12.0</td>
</tr>
<tr>
<td></td>
<td>Disagreed (n = 99)</td>
<td>7.0±2.2</td>
<td>2.0–11.0</td>
</tr>
<tr>
<td>Confident in providing nutrition counselling</td>
<td>Agreed (n = 23)</td>
<td>7.0±2.0</td>
<td>3.0–10.0</td>
</tr>
<tr>
<td></td>
<td>Disagreed (n = 137)</td>
<td>7.0±2.0</td>
<td>2.0–11.0</td>
</tr>
</tbody>
</table>

**Conclusion:** Our study highlights that knowledge on nutrition and its clinical application to hospitalized patients remains inadequate across all physician grades, especially amongst non-gastroenterologists. The current state of clinical nutrition-related teaching during residency training falls short of achieving its goals, and may need re-examination.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
GASTRODUODENAL DISEASE RESISTANCE IN ARMENIAN CHILDREN WITH 

median follow up of 504 days (30–1290) clinical success was noticed in 29 children out of 47 children were excluded from the study due to both histology and culture cultured on 5% sheep blood Columbia agar and selective Hp media. Antibiotic resistance to doxycycline also was seen, despite limited use of this antibiotic in therapy antibiotics: metronidazole (83.3%) and clarithromycin (33%). All strains were susceptible (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and/or duodenitis in 28 (70%), atrophic gastritis in 5 (12.5%), gastric glandular dysplasia in 2 (5%), gastric metaplasia of duodenal mucosa in 3 (7.5%), normal mucosa in 2 (5%). Hp was positive in 38 (95%) and negative in 2 (5%). Cultures were positive for Hp in 14 of 40 patients (35%). Susceptibility test was possible in 12 Hp strains from available14: all but 2 were resistant to metronidazole (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to amoxicillin and levofloxacin (100%), 6 strains were tested and found susceptible to nitazoxanide. 

References


P0641 HIGH RATE OF HELICOBACTER PYLORI ANTIBIOTIC RESISTANCE IN ARMENIAN CHILDREN WITH GASTRODUODENAL DISEASE

T. Shahnian1, G. Amaryan2, M. Hovsepyan2, C. Braegger3
1Chair of Pediatrics 2, Yerevan State Medical University, Yerevan/Armenia
2Pediatrics, Arabkir Joint Medical Center, Yerevan/Armenia
3Division Of Gastroenterology And Nutrition, University Children’s Hospital Zurich, Zurich/Switzerland

Introduction: Because of high prevalence of gastric malignancies in the adult population, high Helicobacter pylori (Hp) prevalence in Armenia is suspected. Rising antibiotic resistance of Hp both in children and adults lead to decrease of effectiveness of standard eradication therapy [1, 2]. The aim of this study is to determine frequency of Hp antibiotic resistance in Armenian children.

Aims & Methods: 47 children with suspected gastroduodenal disease (GDD), hospitalized in Arabkir MC, were selected from April to December 2016 (23 boys and 24 girls, average age 8.98 ± 4.10). Hp-associated GDD were diagnosed according to clinical, endoscopic and histological criteria. Antral biopsy was cultured on 5% sheep blood Columbia agar and selective Hp media.

Results: Hp-associated GDD was diagnosed in 40 patients out of 47: 37 (92.5%) had gastritis and/or duodenitis, 3 (7.5%) had peptic ulcer disease (PUD). Seven out of 47 children were excluded from the study due to both histology and culture negative for Hp. Thirty-four (85%) were treatment-naive patients and 6 (15%) had received eradication therapy previously. Main clinical symptoms were recurrent epigastric pain 34 (85%), nausea 28 (70%) and vomiting 13 (32.5%). By endoscopy, gastritis was seen in 46 (100%), and/or duodenitis was seen in 18 (45%), non-erosive gastritis in 16 (40%), PUD in 3 (7.5%), normal mucosa in 3 (7.5%). Rapid urease test was positive in all antral biopsies (100%). Histology showed chronic gastritis and/or duodenitis in 28 (70%), atrophic gastritis in 5 (12.5%), gastric glandular dysplasia in 2 (5%), gastric metaplasia of duodenal mucosa in 3 (7.5%), normal mucosa in 2 (5%). Hp was positive in 38 (95%) and negative in 2 (5%). Cultures were positive for Hp in 14 of 40 patients (35%). Susceptibility test was possible in 12 Hp strains from available14: all but 2 were resistant to metronidazole (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to amoxicillin and levofloxacin (100%), 6 strains were tested and found susceptible to nitazoxanide.

Conclusion: The data indicate a high rate of resistance to conventional triple therapy antibiotics: metronidazole (83.3%) and clarithromycin (33%). High resistance to doxycycline also was seen, despite limited use of this antibiotic in Armenian paediatric practice. High susceptibility to nitazoxanide might be useful for follow up examination of specific eradication schemes for Armenia. High frequency of both erosive and non-erosive gastritis as well as high rate of gastric atrophy and dysplasia in these patients was noticed.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Recent Insights into Antibiotic Resistance in Helicobacter pylori Eradication. Gastroenterology Research and Practice; Volume 2012, Article ID 723183, 8 pages

P0642 GASTRIC MICROBIOTA OF CHILDREN WITH CHRONIC GASTRITIS

E. Kornienko, N. Parolova, P. Zykov
St. Petersburg State Paediatric Medical University, St. Petersburg/Russian Federation

Contact E-mail Address: da@amedru.md

Introduction: Children’s gastric microbiota in the presence or absence of H. pylori (HP) has not been studied well.

Aims & Methods: We aimed to study the composition of the microbiota in the biopsy material of the antral part of the stomach, according to the 16S-rRNA sequencing, of children with chronic gastritis, in the presence or absence of HP, and also to compare it with the histological data. Biopsy materials of mucous tissue from antral part of the stomach were taken from 16 children aged 10–17 with chronic gastritis and after the preliminary extraction the biopsy materials were examined using the method of sequencing with a pair of oligonucleotide primers, which are specific for the conservative regions of the 16S-rRNA gene, on the Life Technologies Ion Torrent sequencer using the 318v2 chip. Bioinformatic processing was conducted using the QIIME package. The results were compared with the data from the histological examination of the biopsy materials from the same part of the stomach as well as with the results of diagnosis using rapid urease test AMR RUT Expert with digital Reader.

Results: 8 out of 16 patients were identified as HP(+)+ positive, 2 of them had HP in small amounts, 6 of them – in significant amounts. The dominant types of bacteria in the stomach of all children were Bacteroidetes, Firmicutes; in a lesser extent - Actinobacteria, Cyanobacteria, Fusobacteria. 64.1% of HP(+) patients’ microbiome was constituted of HP, among Proteobacteria it reached 75–99%, the amount of other bacteria herewith shor- tened, and the microbiota decreased. Non-helicobacter microbiota of children with small amount of HP was almost identical in composition as HP(-) patients’, the amount of other microbes was more numerous and diverse, also within Proteobacteria. The signs of inflammation in mucous coat of the stomach in case of HP presence were more pronounced than in HP absence, they corre- lated with the amount of HP.

Conclusion: Microbiome of the children’s stomach is diverse, it is similar to adults’. The infection from HP inhibits another microbiota and it is accompanied with the signs of mucous coat inflammation, which correlates with the amount of HP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0643 FEATURES OF CHRONIC GASTRITIS CAUSED BY CO- INFECTION OF HELICOBACTER PYLORI AND EBstadt BARR VIRUS IN PEDIATRIC PATIENTS

E. Spivak, R. Levi
Pediatric, Medical State University, Yaroslavl/Russian Federation

Contact E-mail Address: spivak58@mail.ru

Introduction: It is known that co-infection of the gastric mucosa with highly pathogenic Hp strains and the Epstein-Barr virus is a risk factor for the development of severe gastritis and gastric adenocarcinoma. However, the characteristics of such co-infection in children are not sufficiently studied.

Aims & Methods: The aim of this study is to estimate the role co-infection of highly pathogenic strains of Helicobacter pylori and Epstein-Barr virus in pediatric patients with chronic gastritis. Patients and methods. 190 children aged 8–17 with chronic Hp-associated gastritis were studied. Antral biopsies were taken and inflammation graded according to the Sydney system. Polymerase chain reaction (PCR) was used to detect the presence of Epstein-Barr virus (EBV), Helicobacter pylori (Hp) and its highly pathogenic strains in the gastric mucosa of the patients.

Results: Persistent EBV infection was found in 83 children (43.7%) with chronic gastritis of the antral and (or) gastric body areas. Helicobacter pylori strains that possess the virulence factors (cytotoxin-associated gen A (CagA), vacuolating cytotoxin gen A (VacA), induced by contact with epithelium (IceA), and blood group antigen-binding adhesion (BabA)) were detected in 49 patients (25.8%). In most cases, the association of two or more virulence factors in one patient was observed. It was found that 39 pediatric patients had co-infection of the highly pathogenic strains of Hp and EBV. The study revealed no significant effect of the variant of the gastric mucosa infection on the clinical manifestations of gastritis - the nature of intoxication, abdominal and dyspeptic syndromes. At the same time, the endoscopic and morphological data analysis has revealed a severe gastritis with the development of pangastritis and signs of gastric mucosa atrophy observed mainly in the antral region, in patients with co-infection (highly patho- genic strains of Hp + VEBA). In addition, by correlation analysis, we found that the increase and development of the inflammatory process in the gastric mucosa was mostly influenced by the presence of CagA-positive strains of H. pylori in combination with EBV. We found that children infected by EBV without highly pathogenic Hp strains had mild mononuclear and polymorphonuclear cell infiltration without atrophy.

Conclusion: Co-infection with highly pathogenic Hp strains and the Epstein-Barr virus in pediatric patients is significantly associated with severe gastritis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: da@amedru.md
**P064 HELICOBACTER PYLORI INFECTION AND SPECIFIC IMMUNOGLOBULIN E ANTI-BODIES TO FOOD ALLERGENS IN SYMPTOMATIC CHILDREN ADMITTED IN A DIGESTIVE ENDOSCOPY UNIT**

V. Hurduc, B. Luiza, P. Doina  
Pediatric Gastroenterology, Victor Gomoiu Clinical Children Hospital, "Carol Davila" University of Medicine and Pharmacy, Bucharest/Romania

Contact E-mail Address: v_hurduc@yahoo.com

**Introduction:** Treat the association between Helicobacter pylori infection and specific immunoglobulin E (IgE) antibodies to food allergens in symptomatic children. We conducted a prospective study of 394 symptomatic children (249 girls, age range 6 months-18 years), mostly with uninvestigated dyspepsia requiring endoscopy in our unit, from January 2015 to December 2016. All patients were evaluated for H pylori infection by at least two standard invasive tests and for specific immunoglobulin E antibodies to major food allergens (R-Biopharm, Germany). The nutritional status of patients was assessed in all cases by the new World Health Organization (WHO, 2007) growth charts. EPI-INFO version 7 was used for statistical analysis. A two sided p-value less than 0.05 was considered statistically significant.

**Results:** Active H pylori infection was documented in 246 (62.3%) cases. The allergic sensitization at least one of the food allergens identified in 134 of 394 patients (34%). The majority of IgE positive children (109 of 134 cases; 81.3%) were positive for cow's milk followed by egg (17.9%), wheat (7.4%), peanut (6.7%), soybean (3.7%). The allergic sensitization to food allergens was associated with abnormal levels of specific IgE antibodies to common inhalatory allergens in 55 of 134 cases (41.0%). Regarding the association of H pylori infection with an elevated serum IgE level to at least one of the food allergens tested, there was a significant positive correlation (p = 0.14). 173 of 344 (51.3%) patients positive for food specific IgE antibodies were H pylori infected and 57 of them (35.5%) were H pylori negative (Fisher exact test = 0.08). The assessment of the patients nutritional profile in relationship with H pylori infection and food allergy not significantly different between the two groups of the poor nutritional status (undernutrition and overweight).  

**Conclusion:** The recent decline of H pylori infection is not evident in our study. There was no association between H pylori infection and IgE mediated food allergy. Undernutrition and overweight were not associated with the H pylori infection and food allergy in our patients.  

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0646 GUT MICROBIOTA CHANGES UNDER OLIGOFRUCTOSE-ENRICHED INULIN ADMINISTRATION IN PAEDIATRIC COELIAC DISEASE PATIENTS ON A GLUTEN-FREE DIET: A RANDOMIZED CONTROLLED TRIAL**

U. Krupa-Kozak, N. Drabinski, L. H. Markiewicz, E. Jarocka-Cyrra  
1Department Of Chemistry And Biodynamics Of Food, Instituto de Animal Reproduction and Food Research, Polish Academy of Sciences, Olzytni,Poland  
2Department Of Immunology And Food Microbiology, Institute of Animal Reproduction and Food Research, Polish Academy of Sciences, Olzytni,Poland  
3Faculty Of Medical Science, Department Of Clinical Pediatrics, University of Warmia & Mazury, Olsztyn,Poland

Contact E-mail Address: u.krupa-kozak@pan.olsztyn.pl

**Introduction:** Imbalanced gut microbiota is suggested to be involved in the pathogenesis of coeliac disease (CD). In many CD patients, despite a long-term treatment with a gluten-free diet (GFD), the intestinal dysbiosis is not completely restored. Prebiotics, substances of the unique ability to shape intestinal microbiota, have been recommended, low-risk GFD supplement to remedy the intestinal dysbiosis in CD patients.

**Aims & Methods:** The aim of the present study was to assess the effect of prebiotic oligofructose-enriched inulin (OEI) administration on the quantitative gut microbiota characteristics of CD children following a strict GFD for ≥ 1 year. A randomized, placebo-controlled 12-weeks dietary intervention was conducted on 34 CD children (62.7% female, mean age 10 years) on GFD who were randomly assigned to prebiotic (OEI: 10 g/day) or placebo group (maltodextrin; 7 g/day). Before (baseline) and after the intervention, the anthropometric (weight, height) and biochemical blood parameters (C-reactive protein, creatinine, aspartate aminotransferase, alanine aminotransferase), quantitative gut microbiota characteristics (by real-time PCR) and concentration of short-chain fatty acids (by gas chromatography with a flame ionization detector) were assessed.

**Results:** Thirty CD patients completed the study. After 12-weeks intervention, the biochemical blood parameters remained normative in all CD patients, and the gut microbiota counts within eachexperimental group did not differ from their counts at baseline. However, in comparison with placebo group, Bifidobacterium counts was significantly (p = 0.01) higher in CD children consuming OEI-supplemented GFD. Moreover, the counts of Clostridium leptum group in children of prebiotic group did not show the decreasing tendency along the time of GFD, observed in placebo group. The changes were reflected inotol bacterial number after the intervention that was constant in prebiotic group but tended to fall in placebo group. Microbiota counts corresponded well with microbial metabolic activity. In comparison with placebo group, there was concentration of short-chain fatty acids in prebiotic group (50.27 vs. 69.95 µmol/g, p < 0.05), mainly due to a significantly higher acetate formation (28.82 vs. 44.06 µmol/g, p < 0.05).

**Conclusion:** The bile acids of GFD are promising, low-risk GFD supplement to remedy the intestinal dysbiosis in CD patients. Microbiota characteristics of CD children following a strict GFD administered OEI was not associated with restoration of gut microbiota.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0648 EVALUATING GLUTEN IMMUNOCOMPLEX PEPTIDES AS NON-INVASIVE MARKER OF GLUTEN-FREE DIET ADHERENCE IN PAEDIATRIC CELIAC DISEASE**

1Gastroenterology And Nutrition, Instituto Hispano-Pediatric, Seville/Spain  
2Departamento de Microbiologia y Parasitologia, Facultad de Farmacia, Universidad de Sevilla, Sevilla/Spain  
3Servicio De Analisis Clinicos., Hospital Universitario INGEA de Ceuta, Ceuta/Spain  
4Biomedal, Sevilla/Spain

Contact E-mail Address: aflonsorodriguez@shippedia.com

**Introduction:** Treatment for celiac disease (CD) is a lifelong gluten-free diet (GFD). Patients should be followed-up with dietary interviews and serology as CD markers to ensure adherence to the diet. However, none of these methods
offer an accurate measure of dietary compliance. Presence of gluten related sub- stances in faeces after one week that transit through gastrointestinal tract happened and confirms gluten ingestion.

**Aims & Methods:** Detection of gluten immunogenic peptides (GIP) in stools as a marker of GF adherence in CD paediatric patients was evaluated and compared against traditional methods of GFD monitoring. A prospective, non-randomized, multi-centre follow-up study, 2 years long, including 64 CD patients started on GFD when diagnosed was conducted (age range 0–18 years).

Fecal GIP was quantified by enzyme-linked immunosorbent assay (ELISA). Anti-tissue transglutaminase (anti-TG) IgA and anti-deamidated gliadin peptide (anti-DGP) IgA antibodies were measured simultaneously, during basal and follow-up visits at 0, 6, 12 and 24 months. Correlations between fecal GIP and serum antibodies were established by Cochran’s and Friedman tests.

**Results:** 62 patients (97%) had detectable GIP levels in stools, during basal visit, before initiation of the GFD, whereas 20.3% of the patients were found to have positive GIP after treated with a GFD. Dietary transgressions were more frequent in children over 8 years of age-46% of them showed more than one detected transgression. Anti-TG IgA remained in high concentrations in 48, 34, and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP was positive in 13, 4.5 and 0% of cases when tested at 6, 12 and 24 months follow-up. Both serological methods did not correlate with GIP in stools (p < 0.05).

**Conclusion:** The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of compliance to traditional serological methods to verify GF compliance in CD paediatric patients. The antibodies can be measured several days or even years to decrease after initiation of the GFD and reduction (but incomplete suppression) of gluten intake. The antibody is sufficient to detect and quantify antibodies in sera. Fecal GIP is a useful tool: 1) on the diagnosis of CD, to ensure that a sufficient amount of gluten has been ingested to allow a correct CD diagnosis. 2) on treatment, for monitoring of short-term and long-term GF compliance. 3) on the differential diagnosis of CD versus other non-compliance.

**Disclosure of Interest:** A. Rodríguez-Herrera: Co-author Gluten detection in human body fluids. Spain P21040569 A. Cebolla: Co-author Gluten detection in human body fluids. Spain P21040569 C. Sousa: Co-author Gluten detection in human body fluids. Spain P21040569 All other authors have declared no conflicts of interest.

**References**


**P0651 META-ANALYSIS: PROTON PUMP INHIBITORS MODERATELY INCREASE THE RISK OF SMALL INTESTINAL BACTERIAL OVERGROWTH**

**T. Su, S. Chen** Department Of Gastroenterology, Sir Run Run Shaw Hospital, Zhejiang University, Institute of Gastroenterology, Zhejiang University, Hangzhou/China

**Contact E-mail Address:** 1877085122@163.com

**Introduction:** PPIs have become one of the most commonly prescribed classes of medication. Although PPIs are generally well tolerated, accumulating evidence suggests that PPIs have long-term risks. One potential risk of PPI use is development of small intestinal bacterial overgrowth (SIBO), which is defined as >105 bacteria colony-forming units (CFU) per mL upon culturing upper gut aspirates. However, this is controversial due to conflicting results from prior studies.

**Aims & Methods:** The aim of this meta-analysis was to evaluate the association between use of PPIs and the risk of SIBO. We systematically searched the online PubMed, Embase, Cochrane Library databases and Web of Science for relevant articles before November 2016. Two researchers identified and extracted data independently. The pooled analysis was performed using generic inverse-variance random-effects model. Subgroup and sensitivity analysis were conducted to assess the stability and heterogeneity of the pooled results. The risk of publication bias was evaluated by examining funnel plot asymmetry, Egger’s test and Begg’s test. All statistical analyses were performed using Stata software version 13.

**Results:** A total of nineteen articles met the eligibility criteria for the meta-analysis. The pooled odds ratio (OR) showed a statistically significant association between increased risk of SIBO and PPI use (OR = 1.95 95% CI 1.20–2.43). No statistically significant publication bias was found based on the Egger’s test (p = 0.11) or Begg’s test (p = 0.147). Our meta-analysis has demonstrated an association between SIBO and PPI use in studies that employed small bowel aspirates culture and glucose hydrogen breath tests (GHBT) as diagnostic tests for SIBO. However, when the pooled analysis was limited to studies recruiting individuals with irritable bowel syndrome (IBS) population, no statistically significant association between PPI use and SIBO was observed, which suggests that PPI use does not affect the risk of SIBO among IBS patients.

**Conclusion:** Our meta-analysis shows that the use of PPIs moderately increases the risk of SIBO, which highlights the need for appropriate prescription of PPIs.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


P0652 CLINICAL SIGNIFICANCE OF TRANSFORMING GROWTH FACTOR - ß1 AND TUMOR NECROSIS FACTOR - ß IN CHILDREN WITH FOOD PROTEIN INDUCED ENTEROCOLITIS SYNDROME

O. T. Kamilova1, A. N. Aripov2, S. S. Sultankhodjaeva1, S. I. Geller1, D. X. Dustumaxedova1, Z. S. Xudoyorova1, M. Rustamoiva1

1Gastroenterology, Republican Specialized Scientific-Practical Medical Center of Pediatrics, Tashkent/Uzbekistan
2Laboratory, Republican Specialized Scientific-Practical Medical Center of Pediatrics, Tashkent/Uzbekistan

Contact E-mail Address: okamilova@mail.ru

Introduction: Nowadays food allergy continues to increase, especially in westernized countries and it is now recognized as a worldwide problem. Transforming growth factor-ß1 (TGF-ß1) is a profibrotic cytokine, which plays an important role in promoting the structural changes in food allergy. Also for patients with food protein - induced enterocolitis syndrome TNF-ß appears to have an important role.

Aims & Methods: The aim was to determine the significance of the Transforming Growth Factor - ß1 and Tumor Necrosis Factor - ß in children with food protein induced enterocolitis syndrome. It was examined 38 patients with FFIES at the age from 4 months to 3 years, the average age was 19 ± 4 months. The control group consisted of 11 healthy children of the same age. The determination of TGF-ß1 and TNF-ß in serum was performed by an enzyme immunoassay kit from Bender MedSystem (Austria).

Results: The level of TGF-ß1 in patients with FFIES exceeded the norm and was respectively 33.5 ± 1.6 ng/ml at norm 20.2 ± 2.1 ng/ml, p < 0.001. The indices of TNF-ß were also increased and amounted to 8.8 ± 1.3 ng/ml in comparison with the control group, p < 0.001. For TNF-ß2 it was characterized by an increase in specific antibodies IgE to cow’s milk in 18 (47.3%) children. In these observations, an increase in its values was established, especially in the group of children with high specific IgE levels to cow’s milk. It is likely that an increase in TGF-ß1 stimulates the release of TNF-ß, which supports chronic inflammation in allergic diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0653 THE ROLE OF GSTI & GSTM1 GENE POLYMORPHISMS IN NEWBORN'S OBESITY RISK

C.O. Marginean1, C. Marginean2, L.E. Melti1, C. Banescu3, M.O. Marginean3

1Pediatrics I, University of Medicine and Pharmacy Tirgu Mures, Targu Mures/Romania
2Obstetrics & Gynecology, University of Medicine and Pharmacy Tirgu Mures, Targu Mures/Romania
3Genetics, University of Medicine and Pharmacy Tirgu Mures, Targu Mures/Romania

Contact E-mail Address: marginean.oana@gmail.com

Introduction: Newborns’ birth weight is influenced by maternal factors (mother’s weight at the onset of pregnancy, gestational weight gain - GWG), genetic, obstetrical and environmental factors, but also socio-economical ones. Excessive GWG, mother’s increased BMI and the adipose tissue mass determine a bigger birth weight and increase the risk of newborns’ obesity. Glutathione S-transferases (GSTs) is an oxidative stress-related gene which is associated with and ist complications.

Aims & Methods: The aim of the study was to investigate the role of mother-child GSTI & GSTM1 polymorphisms as independent risk factors for newborn’s weight, but also to establish correlations between these polymorphisms and anthropometrical parameters, and bioimpedance (BIA) ones, respectively. We assessed the anthropometrical parameters in both mothers and their newborns (BMI, body mass index, MUAC – medium upper arm circumference, TST – tricipital skin thickness, weight – W), BIA parameters in mothers, but we also determined the clinical, paraclinical and genetic parameters in both mothers and newborns.

Methods: We performed a cross-sectional study on 202 mothers and their newborns in a Clinic of neonatology & Gynecology and Obstetrics from Romania.

Results: We noticed that in newborns with W > 3000 gr there was a significant statistical correlation between weight and mother’s GSTI polymorphism (p = 0.046), birth at term (p < 0.001), with mother’s percentage of fat mass assessed by BIA (p < 0.001), and multi parity, respectively (p < 0.001). We obtained a tendency towards correlations between W > 3000 gr and basal metabolism rate (p = 0.083), and GWG seemed to be a protective factor for this W (p = 0.072). We also found that GSTM1 in newborns was a risk factor with tendency towards statistical significance in newborns with increased birth weight. We did not find any interaction effect between newborns’ and mothers’ GSTI and GSTM1 polymorphisms and anthropometrical parameters (p = 0.545 for M1 and p = 0.548 for M2 gene polymorphisms).

Conclusion: Mother’s GSTM1 is an independent risk factor for newborns’ W > 3000 gr, while mother’s GWG seems to be a protective factor for W > 3000 gr. Further studies are needed in order to determine the clear role of these polymorphisms in newborns’ obesity risk. This research was supported by the Research Grants of the University of Medicine and Pharmacy Tirgu Mures, Romania - “The role of genetic determination of the mother in child’s obesity correlated with measurements of bioimpedance and anthropometry” no.275/4.11.2017.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0655 GENETIC PREDISPOSITION TO PRIMARY LACTOSE INTOLERANCE AND ITS INFLUENCE ON CHILDREN'S QUALITY OF LIFE AND DAIRY INTAKE

C. Pienar1, E. Seclaman2, M. Lazarescu3, R. Costachescu4, S.A. Popescu5, I. Sprecu6, L. Pop7,7, L. Pop7,7
1Pediatrics Department, "Victor Babes" University of Medicine and Pharmacy, Timisoara/Romania
2Biochemistry, "Victor Babes" University of Medicine and Pharmacy, Timisoara/Romania
3Gastroenterology And Hepatology, "Victor Babes" University of Medicine and Pharmacy, Timisoara/Romania
4Gastroenterology And Hepatology, "Victor Babes" University of Medicine and Pharmacy Timisoara, Timisoara/Romania

Contact E-mail Address: cpienar@gmail.com

Introduction: Primary lactose intolerance (PLI) is a frequent condition caused by a genetically programmed and progressive loss of lactase expression. It is considered that PLI is the ancestral variant, while lactase persistence is caused by 2 polymorphisms: the dominant C/T13910 and G/A22018. Homozygotes (CC or GG) have detectable lactase levels. In clinical practice only half of people with PLI have symptoms. However, some studies showed that PLI subjects have lower dairy intake.

Aim & Methods: To investigate whether genetic predisposition to PLI influences the quality of life and dairy intake in a group of Romanian children. We conducted a prospective study, recruiting consecutive children evaluated in our unit in May-August 2016. Our study population included 87 children aged 6–17 years.

Results: Genotyping revealed 15 (17.2%) subjects had a CC genotype, 41 (47.1%) subjects had a CG genotype, 31 (35.6%) subjects had a GG genotype. Our results were consistent with Hardy-Weinberg equilibrium. We identified quality of life questionnaire and a dairy intake questionnaire. We used strip genotyping to assess the correlation between IPL and quality of life and dairy intake.

Conclusion: In our group genetic predisposition to IPL followed European standards. We did not find correlation between genetic predisposition to IPL and quality of life and dairy intake.

Disclosure of Interest: C. Pienar: This work was supported by an internal grant of "Victor Babes" University of Medicine and Pharmacy, PIH-C4-TC-2016-08

All authors have declared no conflicts of interest.

P0657 HEPATIC FIBROBLAST GROWTH FACTOR-21 AND OMENTIN-1 mRNA LEVELS IN MORbidly OBese WOMEN WITH NON-ALCOHOLIC FATTY LIVER DISEASE

M. Kulka1, M. Waluga1, M. Żerniak2, M. Kajzer1, L. Liszka1, M. Dyaczyński3, G. Kowalski3, R.J. Buldak1, M. Hartl1
1Medical University of Silesia, Katowice/Poland
2Department Of Gastroenterology And Hepatology, Medical University of Silesia, Katowice/Poland
3Medical University of Silesia, Bytom/Poland

Contact E-mail Address: mwaluga@poczta.onet.pl

Introduction: Fibroblast growth factor-21 (FGF21) and omentin-1 have been recognized as potent antiadipogenic agents, with potential hepatoprotective activity.

Aims & Methods: The aim of this study was to evaluate hepatic FGF21 and omentin-1 mRNA expression, and their serum levels as predictive markers of liver injury and insulin resistance in morbidly obese women with NAFLD. The study included 56 severely obese women who underwent intraoperative wedge liver biopsy during the bariatric surgery. Hepatic FGF21 and omentin-1 mRNA was assessed by quantitative real-time PCR, while their serum concentration with commercially available enzyme-linked immunosorbent assays.

Results: FGF21 serum level was significantly higher in patients with more extent steatosis (grade 2 and 3) compared to those without or with mild steatosis (grade 0 and 1) (p = 0.049). However, ROC analysis showed poor discriminant power for FGF21 serum level in differentiation between more and less extensive steatosis with AUC = 0.666. There was evident tendency to higher levels of hepatic FGF21 mRNA in patients with lobular inflammation and fibrosis, and to lower levels in the case of ballooning degeneration and steatosis. There was positive mutual correlation between hepatic FGF21 and omentin-1 mRNA levels (r = 0.73, p = 0.001). Fibrosis stage was associated with serum glucose and HOMA-IR (p = 0.03 and p = 0.02, respectively). Serum omentin was not associated with histopathological features. Hepatic omentin-1 mRNA levels exerted the tendency to be lower in patients with advanced steatosis and hepatocyte ballooning.

Conclusion: In conclusion our study, which focused on hepatic FGF21 and omentin-1 mRNA expression, confirmed a marked expression of both molecules in liver of morbidly obese patients with NAFLD. mRNA levels were affected by clinical and biological abnormalities. In patients with more extent steatosis was associated with evident change in serum FGF21 concentration in morbidly obese women with NAFLD. The vast amount of fat, both visceral and subcutaneous in severely obese patients may affect FGF21 and omentin-1 serum levels.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

TUESDAY, OCTOBER 31, 2017 09:00-17:00

LIVER & BILIARY II - HALL 7

P0656 HYPOXIA CAUSES HEPATIC STELLATE CELLS ACTIVATION IN THE ABSENCE OF CXUI

E. Becker1, P. Di Fazio2, J. Hänzi2, T.M. Gress3, D. Bartsch1, T. Wawroski1
1Department Of Thoracic Vascular And Surgical Pathology, University Hospital Marburg, Marburg/Germany
2Department Of Urology And Pediatric Urology, University Hospital Marburg, Marburg/Germany
3Klinik Für Gastroenterologie, Endokrinologie, Stoffwechsel Und Infektiologie, Philippus Universität Marburg, Marburg/Germany

Contact E-mail Address: eva-mareike.becker@t-online.de

Introduction: CXUI (CUTL1) is a transcription factor belonging to homeobox proteins. It is responsible for driving the transcription of genes deemed to many cellular functions like proliferation, differentiation and cell death. It has been shown that its role can change and drive tumorigenesis. Up to now, its role is unknown in hepatic stellate cells. W

Aims & Methods: We focused on CXUI activity in hepatic stellate cells under hypoxic stress. LX-2 cells were treated with 100 ng/ml CoCl2 or kept at 37 °C at oxygen (-0.5%). Expression of hypoxia markers and activation markers was performed by RT-qPCR. Western blotting was performed to analyze the protein level of CXUI and HIF-1alpha. Transfection with plasmid containing a promoter sequence for HIF1alpha was performed simultaneously with CXUI knock-down.

Results: LX-2 cells treated for 6 hours with CoCl2 or low oxygen showed an over-expression or a restoration of COL1A1 and ACTA2 after knock down of CXUI. Additionally, CDKN1A, CDKN1B, VEGFA and HIF1alpha were up-regulated in LX-2 cells previously transfected with siCXUI. Protein level of CXUI was significantly down-regulated, whereas HIF1alpha protein was strongly up-regulated by hypoxia condition. Transcriptional activity of HIF1alpha is not correlated with CXUI expression.

Conclusion: CXUI controls the activation of hepatic stellate cells. Its knock down promotes the hypoxia response. CXUI could represent a key factor for controlling liver fibrogenesis. Its role in a liver fibrosis scenario needs to be further investigated.

P0658 LOUREIRIN B INHIBITS THE PROLIFERATION OF HEPATIC STELLATE CELLS VIA DOWN-REGULATING FRizzLED-7 A2

Z. Dept. Of Gastroenterology, First Peoples Hospital, Kunming/China

Contact E-mail Address: song715@163.com

Introduction: Liver fibrosis is the result of repeated healing repair and interstitial reconstruction after chronic liver injury. Activation of hepatic stellate cells represents a critical event in fibrosis because these cells become the primary source of extracellular matrix in liver upon injury. Inhibiting HSC’s activation, proliferation, extracellular matrix production and promoting HSC’s apoptosis are the important therapeutic approaches of liver fibrosis.

Aims & Methods: We aimed to investigate the anti-liver fibrosis ability of lourerin B and the molecular mechanisms involved it. After hepatic stellate cells
(HSCs), which were separated from Sprague-Dawley rat, were treated with differ- entially treated lutein B. MTT was employed to determine HSCs proliferation, western blot was used to test the expressions of Frizzled-4 receptor protein and α-SMA. In addition, enzyme-linked immunosorbent assay (ELISA) was performed to measure the content of α-SMA, TGF-β1 and VEGF in the conditioned HSCs supernatant, and reverse-transcription PCR (RT-PCR) were utilized to detect the expressions of Frizzled-4 and α-SMA genes.

**Results:** MTT test showed that the proliferation of HSCs was inhibited significantly with a time and dose dependent relationship by the treatment of lutein B. The IC50 concentrations of 11.83μg/ml (IC50 = 0.180μg/ml). Western blot analysis showed that the expressions of Wnt receptor Frizzled-4 protein and α-SMA were obviously lower in the group of lutein B treatment than that in the control group. Moreover, the Lutein B administration inhibited the proliferation of fibroblasts by -0.05% secretion in the cultured HSCs supernatant in different degree by the ELISA assay, and RT-PCR results revealed that Lutein B down-regulated the expressions of Frizzled-4 and α-SMA genes in the level of mRNA.

**Conclusion & Outcomes:** The Lutein B mediated anti-hepatic fibrosis by inhibiting the proliferation of HSCs through restraining the Wnt signaling pathway.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0659**

**MACROPHAGE CONTRIBUTES TO STEATOHEPATITIS THROUGH MEDIATING INFLAMMATORY CYTOKINES, AUTOIMMUNITY AND THE CROSSTALK WITH HEPATOCYTES**

**J.K.C. Lau 1, X. Zhang 2, E.S. Chiu 3, J. Yu 4**

1. Faculty Of Medicine, Shioho College, the Chinese University of Hong Kong, Hong Kong, China 2, 3, 4. The Chinese University Of Hong Kong, Hong Kong PRC

**Contact E-mail Address:** jennie.lau@outlook.com

**Introduction:** Macrophages play a pivotal role in the pathogenesis of non-alcoholic steatohepatitis (NASH) and are a major component of inflammatory cells infiltrated in NASH. However, the precise mechanism of how macrophages contribute to the pathogenesis of NASH remains unexplored.

**Aims & Methods:** We aimed to characterize the role and molecular regulators of macrophages in NASH and the therapeutic effects of macrophage depletion on NASH. C57BL/6 wildtype (WT) mice and transgenic LysM-Cre/DTR mice were fed a high-fat diet (HFD) to develop NASH.

**Results:** Hepatic macrophage marker CD68 expression was significantly higher in rats with NASH compared to control rats. Hepatic mRNA expression of pro-inflammatory cytokines, chemokines and their receptors was significantly upregulated in NASH compared to control rats.

**Conclusion:** In conclusion, we identified novel BA derivatives that directly modulate liver nuclear receptors, such as FXR and LXR, thus protecting liver cells from cellular toxicity and inflammation. These new molecules may be used as scaffolds for the development of targeted therapies for NASH.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0660**

**NEWLY SYNTHESIZED ACID BILE DERIVATIVES PREVENT LIVER STEATOSIS IN VITRO THROUGH TARGETING OF NRI SUBFAMILY NUCLEAR RECEPTORS**

**H.M.D.S. Brito 1, M. Batista 2, M. Silva 3, J. Salvador 1, R. E. Castro 1, C.M.P. Rodrigues 1**

1. Research Institute for Medicines (Med.U.Lisboa); Faculty of Pharmacy, Universidade de Lisboa, Lisboa/Portugal
2. Faculty of Pharmacy, University of Coimbra, Coimbra/Portugal
3. Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra/Portugal

**Contact E-mail Address:** hugobrito1@gmail.com

**Introduction:** Non-alcoholic fatty liver disease (NAFLD) is considered the hepatic manifestation of metabolic syndrome, with simple liver steatosis being capable of gradually progressing to inflammation, fibrosis, cirrhosis and even hepatocellular carcinoma. Still, disease pathogenesis is complex and no targeted therapies have yet been approved for NAFLD. Bile acids (BAs) constitute a wide class of steroid molecules with pleiotropic functions, contributing to the homeostasis of lipids and glucose. In the liver, they specifically modulate nuclear receptors from the NRI subfamily, such as Farnesoid X Receptor (FXR) and Liver X Receptor (LXR), thus tightly regulating bile acid synthesis and oxidation and storage of triglycerides.

**Aims & Methods:** Our aim was to screen BA derivatives for their potential to selectively activate FXR, thus protecting liver cells against free fatty acid (FFA)-induced lipid accumulation and lipotoxicity. Nineteen novel BA derivatives were assessed in silico molecular docking studies for FXR and LXR binding, and further evaluated in human cells using a FXR reporter assay. Assessment of FXR-dependent gene and protein expression was analyzed upon incubation of primary human hepatocytes and HepG2 cells with selected BA derivatives. In parallel, BA derivatives were co-incubated with oleic and palmitic acids (2:1) to assess the compound cell cytotoxicity and intracellular lipid accumulation.

**Results:** From the compound library, five BA derivatives showed stronger activation of FXR, compared with their natural precursors. Incubation of HepG2 cells with FAs led to a ~25% reduction in cell viability and ~55% increase in cell death, with a dose-dependent accumulation of lipid droplets. Pre-incubation of cells with selected derivatives efficiently prevented FFA-induced cell death and lipid accumulation. Finally, incubation of both HepG2 cells and primary mouse hepatocytes with BA derivatives strongly induced FXR, RXR, SHP, BSEP, PXR, FGF19 and VLDLR mRNA levels, and repressed SREBP1-c and CYP7a1 mRNA expression. Molecular docking studies and FXR reporter assays confirmed ligand affinity to FXR. Furthermore, chemodendocholic acid (C5a)-based derivatives were found to be potent activators of FXR at lower concentrations than the parent compound.

**Conclusion:** In conclusion, we identified novel BA derivatives that directly modulate liver nuclear receptors, such as FXR and LXR, thus protecting liver cells from cellular toxicity and inflammation. These new molecules may be used as scaffolds for the development of targeted therapies for NAFLD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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Scholars Program 2015).

Conclusion:

Disclosure of Interest:

All authors have declared no conflicts of interest.

References


4. Gaia S, Olivero A, Smedile A, Ruella M, Abate ML, Fadda M, et al. Autophagy mechanism is significantly activated in FLS-ob/ob mice, and its phosphorylated form resulted unvaried. Interestingly, Caffeine treatment caused a stronger reduction of autophagy markers level. FBS treated mice developed NASH-like features, including a reduction in hepG2 protein expression, which is not readily available in the country, and even if available in the near future, needs at least some months for planning and preparation and is costly. G-CSF (Granulocyte Colony Stimulating Factor) has shown both morbidity and mortality benefit in some studies in these groups of patients. By comparing the outcomes in our patients and not receiving G-CSF, we can suggest G-CSF therapy to reduce mortality and morbidity in these patients. Although most of the studies done in the role of G-CSF in ALCF (Acute-on-Chronic Liver Failure) and decompensated CLD (Chronic Liver Disease) have used a fixed dose of G-CSF (C21), our study has used a fixed dosage of 300mg of G-CSF subcutaneously twice a day for a total of 3 days (6 doses).

Aim and Methods: We aimed to study the role of G-CSF in the treatment of alcoholic hepatitis. Decompensated CLD and ALCF. From January 2016 to December 26, a total 49 patients with alcoholic hepatitis, decompensated chronic liver disease and acute-on-chronic liver failure admitted in TUTH (Tribhuvan University Teaching Hospital) were studied. Patients were randomized (in a 1:1 ratio) to either the ‘GCSF + SMT’ (Standard Medical Therapy) group (cases) or the ‘SMT-alone’ (control) group according to computer-generated random numbers. Patients in G-CSF group received G-CSF 300mg twice daily for 3 days (total 6 doses) and CTP (Child Tarcot Pugh) and MELD (Model for End Stage Liver Disease) scores at enrollment and at Day 30 were compared in the two groups.

Results: A total of 49 patients (median age: 49 (range: 27–73) years, 70% males) were included in the study. 24 of them received G-CSF along with SMT and 25 received SMT alone. Baseline characteristics were similar in both the groups. The 3-day G-CSF therapy did not lead to any significant adverse effects. At one month, in GCSF+SMT group, 4 had died whereas in SMT alone group 15 had died. The survival rate in GCSF group whereas only 40% survived in control group (P = 0.002). Also significant improvement in CTP and MELD scores was seen in the group treated with GCSF at one month after therapy. Also, there were fewer complications of sepsis, hepatic encephalopathy and renal impairment in patients in the G-CSF group compared to the SMT alone group.

Conclusion: GCSF therapy improves survival and clinical outcome in patients with alcoholic hepatitis, decompensated chronic liver disease and acute-on-chronic liver failure. It may be useful in patients who do not have access to transplant services and also to the patients awaiting transplantation to prevent worsening during the waiting period. Further studies are needed to explore whether lower doses (total 6 doses) of GCSF are as effective as higher doses (total 10 doses).

Disclose of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest: All authors have declared no conflicts of interest.

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mononuclear layer containing stem cells is a novel approach for regeneration of liver. This therapeutic option is not complex and requires repeated PBMC transplantation.

**Aims & Methods:** To determine the outcome after intrasplenic or intraperitoneal injection of autologous bone marrow stem cells (ABMSC) transplantation in patients with liver cell failure secondary to chronic hepatitis C infection. Sixty chronic hepatitis C patients with liver cell failure were prospectively enrolled. They were classified into 3 groups; group I: 20 patients underwent (ABMSC) injection intrasplenic. Group II: consisted of 20 patients underwent (ABMSC) injected intra hepatic (right portal branch). Group III: (Control Group); consisted of 20 patients received traditional supportive treatment for chronic liver failure and symptomatic treatment of ascites and bleeding abnormalities. All groups of patients were followed regularly for nine months clinically, biochemically and ultrasonographically. Fatigue was assessed by the modified fatigue impact scale questionnaire before, during and at end of the study.

**Results:** Our study showed that proposed treatment was safe and effective. A total of 41,258 adults who underwent routine comprehensive health evaluations, including abdominal ultrasonography, were selected. We calculated the adjusted prevalence ratios (PRs) for components of MetS (high blood pressure (BP), impaired fasting glucose, low high-density lipoprotein cholesterol (HDL-C), and high triglycerides) according to NAFLD. Results: NAFLD was found in 13.8% of non-obese subjects and 52.3% of obese subjects. NAFLD was associated with both incident GO and CO. Inadequate physical activity was not associated with either. 2137 (72%) males and 2458 (78%) females (p < 0.001) were significantly associated with prevalent GO and CO (p < 0.001; 2.81, p < 0.001). Females gender (OR-1.78, p < 0.001) and low-educational level (p < 0.001), diabetes (p < 0.001), NAFLD (p < 0.001), and low household income (p < 0.001) were significantly associated with prevalent GO and CO. Talal (2012) found that obese patients with NAFLD had high triglycerides (TG) levels and decreased HDL-C levels compared to non-obese patients. In obese patients, the prevalence of NAFLD and MetS was significantly higher than in non-obese patients. Therefore, assessment for concurrent MetS among NAFLD patients is considered to be necessary. Disclosure of Interest: All authors have declared no conflicts of interest.

**Reference**


**P0665** **PERIPHERAL BLOOD MONONUCLEAR CELL TRANSPLANTATION STIMULATES HEPATOCYTES PROLIFERATION IN PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS**

G.R. Burganova1, S.R. Abdulkhakov1, I. M. Gazizov1, A. A. Gumerova1, M. A. Titova1, R. Deev1, A. P. Kiyasov1

1Department Of Morphology And General Pathology, Kazan Federal University, Kazan/Russian Federation
2Department Of Normal Human Anatomy, Kazan State Medical University, Kazan/Russian Federation
3Department Of Pathological Anatomy With Course Of Forensic Medicine, Ryazan State Medical University, Ryazan/Russian Federation

**Contact E-mail Address:** guzel.burganova@gmail.com

**Introduction:** It is well known that severe liver disease requires a liver transplant to be treated. But liver transplantation is not available in many countries. A possible option can be a transplantation of autologous bone marrow mononuclear layer containing stem cells which can stimulate liver regeneration. Proliferating cell nuclear antigen (PCNA) shows nuclei of dividing cells and may be useful for calculating proliferation index.

**Aims & Methods:** The aim of this study was to evaluate changes of proliferation intensity of liver cells in patients with alcoholic liver cirrhosis after autologous peripheral blood mononuclear cell (PBMC) transplantation. This uncontrolled open-labeled clinical trial was approved by Ethical committee of Ministry of Health of the Republic of Tatarstan, Russia. Eleven patients took part in the study, they received granulocyte colony-stimulating factor injections for 5 days for PBMC mobilization. On the 6th day PBMCs were collected and injected into the celiac trunk. Liver biopsies were obtained three times from each person on third and six month before and after transplantation of PBMCs into the celiac trunk (initial), third, and twelve months after the procedure. Liver biopsy specimens were embedded in paraffin and stained immunohistochemically with antibodies against PCNA. The PCNA labeling index was calculated as the number of PCNA-labeled nuclei for 1000 hepatocyte nuclei in each specimen and the results were expressed as percentage ratios. Statistical analysis was done by Wilcoxon test. We calculated the proportion of proliferating hepatocytes significantly increased (50.2 % vs. 17.0 %) (p < 0.04). Great increase in hepatocytes proliferation intensity coincided with biochemical improvements of serum bilirubin, ALT and alkaline phosphatase.

**Conclusion:** Our study showed that proposed treatment was safe and effective. We can conclude that after transplantation of autologous PBMC’s proliferation of hepatocytes greatly contributes to the liver regeneration and improvement of blood biochemical data in patients with alcoholic liver cirrhosis. However, effect of PBMC transplantation on long-term survival is not complex and requires repeated PBMC transplantation.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**P0668 THE USE OF THE FATTY LIVER INDEX TO DETERMINE THE PREVALENCE OF FATTY LIVER DISEASE (HEPATIC STEATOSIS) IN AN IRISH POPULATION**

L. Reynolds, L. Rabbitt, C. Goulding

Acute Medical Unit, University Hospital Galway, Galway/Ireland

Contact E-mail Address: laurajreymonds@gmail.com

Introduction: Worldwide, the prevalence of fatty liver disease (FLD) is increasing, particularly in countries with rising obesity rates, such as Ireland. Studies suggest that up to 25% of those with FLD can progress to non alcoholic steatohepatitis (NASH) and be at risk of its sequelae, including cirrhosis and hepatocellular carcinoma. Indeed, NASH is now the second most common indication for liver transplantation in the US. Despite this alarming data, there is no prevalence data for Ireland in relation to FLD.

Aims & Methods: We aimed to use a simple screening tool, the Fatty Liver Index (FLI) to identify those at risk of having fatty liver disease (FLD) amongst all comers presenting to an Acute Medical Unit (AMU) and to use this data as an indicator of prevalence of FLD in Ireland.

Methods: In this prospective cohort study, all patients attending the Acute Medical Unit (AMU) were invited to take part. Their height, weight and waist circumference were measured, and triglycerides (TG) were added to their 'routine AMU blood panel', which also included measurement of gamma glutamyl transferase (GGT). Exclusion criteria were as follows: known liver disease, excess alcohol intake (>17 units per week for males, >11 units per week for females), age <18 years, pregnancy, active malignancy. The Fatty Liver Index (FLI), an algorithm for identifying patients based on FLI risk was used to stratify patients into groups based on risk of having FLD. A FLI score of >60 is highly suggestive of having FLD, a score of 30-60 is indeterminate and a score of <30 is considered low risk for FLD. Ethical approval for this research was granted by the ethics committee of UHG.

Results: Data was collected on 316 participants; 58 were excluded, the majority due to either a history of alcohol excess or known liver disease. A total of 258 participants were therefore evaluated; 50% were male. One hundred and sixteen (45%) participants were >60 on the FLI, 57.3% of which were male. Only 16% of males had a FLI <30, compared with 44% of females. Males had a significantly higher FLI than females; 60.9 vs. 43.12 (p < 0.0001). Those with a FLI >60 had a mean weight = 93.5 kg and BMI = 31.5, vs. 64.9 kg and 22.4 respectively for FLI <30 (P < 0.0001). There was a statistically significant difference in all parameters measured between all 3 groups (p < 0.0001), apart from height, although there was a trend toward lower height in the FLI <30 group, most likely due to the fact that it was 73% female. When over 65 were looked at, there was no height difference between the 3 groups. Those with a FLI >60 were older than those with FLI <30, 54.6 vs. 48 (p = 0.01).

Conclusion: In this study looking at prevalence of fatty liver in Ireland, 45% of participants were found to be at high risk, and 70% were at high or indeterminate risk. Worryingly, only 16% of males fell into the low-risk group. Apart from weight, GGT, TG and BMI this study also showed age and male sex to be significant risk factors for developing fatty liver. This group clearly needs follow up to further evaluate and manage their fatty liver.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0670 ASSESSMENT OF FATTY PANCREAS IN PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE**

T. Alempijevic1, S. Dragasevic2, Z. Zgradec3, M. Stojkovic Lalocevic4, B. Milicic4, D. Popovic4, T. Milosavljevic4

1Clinic For Gastroenterology And Hepatology, Clinical Center of Serbia, School of Medicine University of Belgrade/ Serbia
2Clinic For Gastroenterology, Clinical Center of Serbia, Belgrade/Serbia
3Gastroenterology, Clinical Center of Serbia, Belgrade/Serbia
4Institute for Medical Informatics, University of Belgrade, Faculty of Dentistry, Belgrade, Serbia, Belgrade/Serbia

Contact E-mail Address: tamara.alempijevic@med.bg.ac.rs

Introduction: The clinical implications of non-alcoholic fatty liver disease (NAFLD) are still the topic of debate in human studies. It has been shown that fatty infiltration in pancreas correlates with metabolic risk factors and may represent significant manifestation of metabolic syndrome (MeS) in association with nonalcoholic fatty liver disease (NAFLD). The aim of our study was to determine the association of fatty pancreas (FP) in NAFLD patients with features of MeSand to determine a simple new noninvasive scoring system for FP prediction in NAFLD patients.

Aims & Methods: We conducted a cross-sectional study that included 143 subjects with NAFLD classified into two groups according to the severity grade of FP as follows: patients with non fatty pancreas and grade I light FP (n = 59) and patients with grade II severely and grade III highly FP (n = 84). Patients were analyzed for diagnostic criteria of MeS, underwent sonographic examination with adiposity measurements and liver biopsy. Liver fibrosis was evaluated semi-quantitative according to the METAVIR scoring system and using non-invasive markers of hepatic fibrosis (NAFLD fibrosis score (NFS), BARD score, FIB4, APRI, NALDFibroScore). Our study cohort consisted of 14% of males; diabetes mellitus (DM) was more frequent in patients with severely FP (P = 0.02), with greater portion of patients with HOMA-IR > 3. Higher values of fasting plasma glucose, total cholesterol, serum amylase and lipase were associated with presence of highly fatty pancreas (P = 0.052, P = 0.007, P = 0.014; P = 0.024, retrospectively). Values of hemoglobin A1c (HbA1c) > 6% were significantly associated with NAFLD patients with severely FP, highlighting its impaired function in MeS (P = 0.008). While no significant difference was found in the use of statins and hypotensives, higher number of patients with severely FP did not use antidiabetic agents and association was registered among NAFLD patients with use of metformin and glimepiride and the first FP group (P = 0.035). Out of all visceral fat amounts, only measures of mesenteric fat were associated with severely FP (P = 0.013). Results of our study determined highly significant association of NAFLD and NAFPD. Neither NAFLD non-invasive markers nor histological reports of liver fibrosis showed significant association with presence of fatty pancreas in NAFLD and NAFPD. In multivariate analysis of FP predictors in our study cohort, logistic regression approach was used. Model of predicting occurrence of FP was designed from multivariate logistic regression analysis. The probability was estimated with the equation: 0.627 + 0.640 * 0.593 + glucose (fasting glucose level) – cholesterol level – HOMA-IR – triglycerides – serum lipase – ultrasonography level of liver steatosis. According to the score values for different cut off levels, best ability in the prediction of severely FP has shown the score value above 6.5.

Conclusion: Our study demonstrated that pancreatic fat infiltration due to its clinical and structural presents a new and independent risk factor that is strongly associated with MeS manifestations, affects glucose metabolism and severity of NAFPD. Interestingly, significant association was registered among NAFLD patients

**P0669 ROLE OF BISPHENOL A AS AN ENVIRONMENTAL FACTOR IN THE PROMOTION OF NON-ALCOHOLIC FATTY LIVER DISEASE: IN VITRO AND IN VIVO STUDY**

M. Dallo1, A. G. Gravina1, M. Masarone2, S. Errico2, C. Niculeseu3, R. Di Sarno1, C. Tuccillo1, D. Sgambaro1, M. Romano1, M. Persico1, N. Diana1, C. Logueri4, F. Federico1

1Department Of Clinical And Experimental Medicine, University of Campania "Luigi Vanvitelli", Naples/Italy
2Department Of Internal Medicine And Hepatology, University of Salerno, Baronissi/Italy
3Department Of Experimental Medicine, University of Campania "Luigi Vanvitelli", Naples/Italy
4Department Of Clinical And Experimental Medicine, University of Campania "Luigi Vanvitelli", Naples/Italy

Contact E-mail Address: marcello.dallo@gmail.com

Introduction: Bispheanol (A BPA) is an endocrine disrupting chemical, a heterogonous group of chemicals usually found in food packaging or insecticide residues on vegetable crops, associated with type 2 diabetes mellitus (T2DM), cardiovascular disease, and enzyme abnormalities, and in general with the whole blood glucose homeostasis.

Aims & Methods: We have evaluated BPA plasma and urine levels in non-alcoholic fatty liver disease (NAFLD) patients compared to healthy subjects and we evaluated the possibility to eliminate this environmental factor after a BPA-free diet regimen. Furthermore, we evaluated, in human HepG2 cells, the effects of exposure to different BPA concentrations on both oxidative stress induction and cell proliferation. We enrolled sixty patients with histologic diagnosis of NAFLD with or without T2DM, before a BPA-free diet, and healthy subjects, by subjecting them to evaluation of body composition using bioimpedance analysis. In vitro, the proliferation of BPA-exposed HepG2 cells at two different concentrations (0.025 and 0.055 µM) was evaluated, both at high (H-HepG2), in order to simulate human hyperglycemia, and at low (L-HepG2) glucose concentrations, for up to 48 h of post serum exposure by T2DM.

Results: BPA levels were significantly higher in 60 NAFLD subjects, both in urine and in plasma (p < 0.0001) if compared to controls and, among this group, it appeared to be higher in 30 non-alcoholic steatohepatitis (NASH) patients compared to 30 simple steatosis (NAFL) ones (p < 0.05), independently from the presence of T2DM. After following a BPA-free diet for one month, NAFLD patients showed a significant reduction of BPA circulating levels (p < 0.05) without a significant reduction of urine levels, which represents the only way to eliminate BPA amount released into circulation by the liver reservoir. In fact subjects with a higher fat percentage in body composition showed higher BPA levels in plasma and urine. In our population study, NASH patients showed a higher fat percentage in body composition in comparison with NAFL cases, while with 0.055µM increased proliferation compared to controls at 48h (p < 0.0001). Moreover, BPA increased TBARS levels at 48h in H-HepG2 cells versus controls.

Conclusion: Our study reveals a possible role of BPA as an environmental factor in the progression of NAFLD, particularly in obese and/or T2DM patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
with use of antidiabetic agents and the absence of highly fatty pancreas, indicating its potential protective role. Simple new noninvasive scoring system was designed from multivariate logistic regression analysis to estimate the occurrence of severely FP in NAFLD with best ability in the prediction in score values above 6.5.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0671 SERUM THYROID STIMULATING HORMONE IS INDEPENDENTLY ASSOCIATED WITH HEPATIC STEATOSIS AND STEATOHEPATITIS IN EUTHYROID SUBJECTS

A. Eshraghi1, S. Nikghohalian2, B. Geramizadeh3, S. Ali Malek-Hosseini2
1Gastroenterology And Hepatology, Shiraz University of Medical Sciences, Shiraz/Iran
2Transplant Research Center, Shiraz/Iran

Contact E-mail Address: eshraghianna@yahoo.com

Introduction: Non-alcoholic fatty liver disease (NAFLD) is a rapidly growing disease worldwide. The pathogenesis of NAFLD is not well recognized. Thyroid is totally involved in regulation of lipid and carbohydrate metabolism, body weight, and energy homeostasis. Therefore, the role of thyroid hormones in pathogenesis of hepatic steatosis is anticipated.

Aims & Methods: This study aimed to investigate thyroid hormone abnormalities in euthyroid subjects with hepatic steatosis. A cross sectional study was conducted between September 2012 and September 2015 at Namazi hospital, Shiraz, Iran. Study subjects were healthy individuals who had undergone liver biopsy for evaluation of liver histology as a routine pre-transplant checkup. Liver function tests, age, gender, weight, height, fasting plasma glucose, thyroid hormones, and lipid profile were recorded. Liver biopsy specimens were reviewed by an expert pathologist for steatohepatitis and steatosis. Individuals with a history of chronic liver disease, hepatitis B or C infection, hepato-biliary cancers, those with > 20 grams/day alcohol consumption, and individuals receiving medications causing hepatic steatosis were excluded from the study.

Results: A total of 210 individuals (130 women and 80 men) were included. Seventy six individuals (36.19 %) had hepatic steatosis and 19 individuals had steatohepatitis (9.04 %) in liver histology. Mean age of individuals with and without hepatic steatosis were 32.9 ± 6.69 and 31.8 ± 6.72 years respectively (P = 0.26). In univariate analysis higher weight, triglyceride, total cholesterol, alanine aminotransferase (ALT), alkaline phosphatase, fasting blood sugar (FBS) and thyroid stimulating hormone (TSH) were associated with hepatic steatosis (P < 0.05). Serum T4 and T3 were not associated with hepatic steatosis (P > 0.05). In regression analysis, higher TSH, higher alkaline phosphatase, higher ALT and higher TSH (OR = 1.36; 95 % CI: 1.02–1.80, P = 0.03) were independent predictors of hepatic steatosis. In regression analysis, higher serum TSH was independently associated with steatohepatitis compared to those without steatohepatitis (6.83 ± 6.04 mIU/L and 2.10 ± 1.27 mIU/L) (OR = 2.11; 95 % CI: 1.45–3.07, P < 0.001). A cutoff value of 3.75 mIU/L for TSH was predictor of presence of steatohepatitis in liver biopsies (sensitivity = 75%; specificity = 89%; AUC = 0.754; P = 0.004).

Conclusion: Higher serum TSH is associated with hepatic steatosis and steatohepatitis in euthyroid subjects. Thyroid hormones may have crucial role in hepatic steatosis and may be targeted for treatment of NAFLD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0673 DIFFERENCES BETWEEN BY-PASS AND SLEEVE GASTRECTOMY ON CLINICAL AND LABORATORY STATUS 6 AND 12 MONTHS AFTER INTERVENTION IN BARIATRIC SUBJECTS

M. Dacor1, S. Palumiano2, F. Masutti1, V. Lanzotti3, R. Patti2, R. M. Buonocore2, C. Tiribelli1, S. Nikeghbalian2, B. Geramizadeh2, S. Ali Malek-Hosseini2
1Clinica Patologie Del Fegato, ASUITS Ospedale Cattinara, Trieste/Italy
2Dipartimento Universitario Clinica Di Scienze Mediche Chirurgiche E Della Salute, Università degli Studi di Trieste, Trieste/Italy
3Clinica Patologica Del Fegato, ASUITS Ospedale Cattinara, Trieste/Italy

Contact E-mail Address: cpf@asuits.sanita.fvg.it

Introduction: In patients with morbid obesity, dietary treatment and physical activity are the first line of treatment, but if not responding, bariatric surgery is usually used for weight loss. The main surgical procedures are the adjustable gastric banding (GBP) and sleeve gastrectomy (SG) and gastric bypass (GBP), and they are choices in function of BMI, age and comorbidity. Both techniques have proven effective in weight loss. It is known that liver fibrosis evaluation with Point Shear Wave Elastography (pSWE) is difficult in these patients.

Aims & Methods: To study the difference between SG and GB and their impact on main clinical and laboratory hepatic metabolic indicators and scores 6 and 12 months after the intervention and pSWE at 12 months. We studied 68 obese subject candidate to bariatric surgery (45 female, 23 male). 28 underwent GBP and 40 SG. Blood tests, physical examination were assessed before surgery, after 6 months (68 patients) and after 12 months (51 patients) and pSWE after 12 months.

Results: In the comparison between GBP vs SG there was a statistically significant difference in the reduction in Fatty Liver Index (61 % vs 37%, p = 0.015), waist circumference (26 % vs 18 %, p = 0.045), BMI (34 % vs 28 %, p = 0.016), total cholesterol (23 % vs 0 %, p = 0.005), ALT (increased by 15 % in GBP, decreased by 40 % in SG, p = 0.023) while no differences were observed in the other indicators considered. Ferritin level increased (52 %) in SG and decreased (27 %) in GBP, p = 0.02). No difference was observed for pSWE.

Conclusion: This study showed some significant differences in clinical and laboratory terms between the two types of intervention, in fact GBP seems to have a more powerful effect on weight loss and all related markers: all steatosis scores (FLI, HSI, LAP), BMI, waist circumference. This can be explained by better malabsorptive effect of this intervention and by a lower BMI starting point for reasons related to the intervention technique.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
PO674 AUTOSOMAL DOMINANT POLYCYSTIC LIVER DISEASE IS NOT A RISK FACTOR FOR A LIVER VOLUME COMPARED WITH PATIENTS WITH COMBINED POLYCYSTIC LIVER DISEASE AND AUTOSOMAL POLYCYSTIC KIDNEY DISEASE: RESULTS OF THE PLD REGISTRY

R. Van Aerts1, M. De Jong1, W. Kievel1, F. Nevens2, H. Kim3, C. Ahn4, J.P. Busch1
1Gastroenterology And Hepatology, Radboudumc Nijmegen, Nijmegen/Netherlands
2UZ Leuven, Leuven/Belgium
3Seoul National University Hospital, Seoul/Korea, Republic of Korea

Introduction: Polycystic liver disease (PLD) occurs in the setting of different genetic disorders: autosomal polycystic liver disease (ADPLD) and autosomal polycystic kidney disease (ADPKD). These patients may develop hepatoesplenomegaly as a result of multiple fluid-filled cysts. It is unclear whether PLD severity differs between ADPLD and ADPKD. Height adjusted liver volume (HTLV) reflects with symptomatic disease and diminished quality of life. We assessed hepatoesplenomegaly with HTLV, as an objective parameter, in a large cohort of ADPKD and ADPLD patients.

Methods: PLD patients, defined by >10 liver cysts on radiological imaging, were included in the international PLD registry. The cases were identified from clinical records at the University Leuven (Belgium), Seoul National University Hospital (South-Korea) and Radboud University Hospital Nijmegen (the Netherlands). In a cross-sectional analysis, we selected patients when height adjusted total liver volume was measured prior to liver reducing therapy. We performed univariate and multivariate analyses to explore risk factors associated with severity of disease. Results: Out of a total 1674 patients in the PLD registry, 1222 patients (1110 ADPKD and 112 ADPLD) could be selected. In the ADPKD + PLD group height adjusted liver volume is significantly lower compared with ADPLD patients (1050 ml/m vs 1922 ml/m; p = 0.000). Females have higher HTLV than men in both ADPKD and ADPLD. Severe disease (HTLV > 3.200ml/m) is more prevalent in ADPLD. In this group, gender and age are independent predictors for severity of disease.

Conclusion: In this cohort more ADPLD patients had moderate to severe PLD compared with ADPKD. Longitudinal studies are needed to further explore the differences in the national course of PLD phenotype between ADPLD and ADPKD patients and to identify new risk factors.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO675 CARDIOVASCULAR RISK MODEL FOR THE (ATYPICAL) PATIENT WITH NON-ALCOHOLIC FATTY LIVER DISEASE

M.A. Munteanu1, G. Nagy2, M. Gordan3, S. Valean4, P. A. Mirea3
1Internal Medicine, University of Oradea, Faculty of Medicine and Pharmacy, Oradea/Romania
21st Medical Clinic, University of Medicine and Pharmacy “Iuliu Hatieganu” Cluj-Napoca, Cluj-Napoca/Romania
3The Technical University of Cluj-Napoca, Cluj-Napoca/Romania

Contact E-mail Address: mihaimunteanum@yahoo.com

Introduction: Nonalcoholic fatty liver disease (NAFLD) affects about 1 billion people worldwide. Those with non-alcoholic steatohepatitis (NASH) among NAFLD patients have increased mortality rates compared to the general population, with cardiovascular diseases being the leading cause of death. Identifying parameters associated with cardiovascular disease is of major importance, both in terms of prognosis, as well as in terms of therapeutic attitude.

Aims & Methods: Our aim was to quantify the risk of developing atherosclerosis as a main cardiovascular risk factor, in NAFLD patients and to identify a screening strategy for those patients. We included patients with NAFLD and metabolic syndrome (MS) into 2 arms: with NAFLD and MS, and with NAFLD without MS. NAFLD diagnosis was based on clinical, biological and ultrasound determinations. We used FibroMax for evaluating the hepatic modifications (presence of liver fibrosis). The Rho of CPA (Rho = 0.8, p = 0.001). CAP score correlated significantly with fibrosis and effectively diagnosed steatosis > 5% (AUROC 0.82, 95% sensitivity, 60% specificity), but could not distinguish between grades. Conclusion: We have developed an automated software, using low-resolution images to provide a rapid, easily performed, objective assessment of steatosis and fibrosis. Although several factors have been associated with the disease, the biological basis of the histological diversity of severity of NAFLD remains unknown. Several relatively noninvasive parameters have been identified as predictive for advanced fibrosis stage in patients with NAFLD, but none of them has sufficient sensitivity or specificity to replace liver biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO676 DEVELOPMENT AND VALIDATION OF AN AUTOMATED SYSTEM FOR ASSESSMENT OF LIVER STEATOSIS AND FIBROSIS IN ROUTINE HISTOLOGICAL IMAGES FROM PATIENTS WITH NAFLD

R. Forlano1, B.H. Mullish1, J. Maurice1, N. Giannakeas2, N. Angkanyukul3, J. Lloyd1, A. Tsai1, M. Tsipouras4, M. Yee3, S. Taylor-Robinson1, R.D. Goldin2, M. Thurr2, P. Manousou1
1Department Of Hepatology, Imperial College London, London/United Kingdom
2Technological Educational Institute, Epirus/Greece
3Imperial College London, Cellular Pathology, London/United Kingdom
4Department of Biomedical Engineering and Telecommunications, Macedonia/Greece
5Endocrinology, London/United Kingdom

Contact E-mail Address: r.forlano@imperial.ac.uk

Introduction: Liver biopsy is the reference standard for diagnosing and staging non-alcoholic fatty liver disease (NAFLD). Steatoasis grade and fibrosis stage are typically reported using semi-quantitative scores. Inter- and intra-observer variability in the current scoring systems may impact upon histological staging, and consequently upon the interpretation of responses to interventions in clinical trials.

Aims & Methods: We developed an automated method for steatosis and fibrosis quantification using biopsies of NAFLD patients. We further validated Liver Stiffness Measurements (LSM) and controlled attenuation parameter (CAP) in this group, using quantitative assessment as reference. 246 consecutive patients with biopsy-confirmed NAFLD and transient elastography within 3 months of the biopsy were evaluated. Biopsies were independently scored by two histopathologists and digitalised at 2x magnification. Areas of steatosis and fibrosis were annotated manually using the NDP.view2 to facilitate machine learning. Each image was then analysed by the automated software: fat percentage (%fat) and coefficient of Proportionate Area (CPA) computed by the software were compared with the manual annotation. They were also correlated with LSM and CAP.

Results: There was an excellent concordance between manual and automatic measurements, with inter-class correlation coefficient, ICC = 0.98, (95%CI = 0.96–0.99, p < 0.0001). There was good correlation between %fat and steatosis grade, but with significant overlap between groups. Results were similar between CPA and histological stage. LSM was significantly associated with CPA (Rho = 0.8, p = 0.001). CAP score correlated significantly with %fat (Rho = 0.45, p = 0.002) and effectively diagnosed steatosis > 5% (AUROC 0.82, 95% sensitivity, 60% specificity), but could not distinguish between grades. Conclusion: We have developed an automated software, using low-resolution images to provide a rapid, easily performed, objective assessment of steatosis and fibrosis in NAFLD, with excellent correlation with experts’ annotation. Objective measures would be helpful in the assessment of therapeutic response in clinical practice and in clinical trials for patients with non-alcoholic fatty liver disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO677 THE IMPORTANCE OF FIBROSIS SCORES AND TRANSIENT ELASTOGRAPHY IN NAFLD EVOLUTION

D. Neagoe1, A. Amzolini1, G. Ianoși2, M. Popescu3, A. Farmazon1, S. Ianosi1, A. Turculeană1
1Internal Medicine, University of Medicine and Pharmacy, Craiova/Romania
2Internal Medicine, Department of Medicine and Pharmacy, Craiova/Romania
3Endocrinology, University of Medicine and Pharmacy, Craiova/Romania

Contact E-mail Address: dananegao2014@gmail.com

Introduction: Today, nonalcoholic fatty liver disease (NAFLD) is the most prevalent form of liver disease and it is an increasingly frequent cause of cirrhosis. Although several factors have been associated with the disease, the biological basis of the histological diversity of severity of NAFLD remains unknown. Several relatively noninvasive parameters have been identified as predictive for advanced fibrosis stage in patients with NAFLD, but none of them has sufficient sensitivity or specificity to replace liver biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.

United European Gastroenterology Journal 5(S)
Aims & Methods: Aim of our study was to compare two non-invasive methods: fibroscan on serum markers and transient elastography (TE). We included 152 patients with NAFLD, 40 males (26.31%) and 112 females with age from 23 to 79 years.53 patients (23.02%) were overweight, 9 patients had normal weight and 24(15.79%) had severe obesity. In all patients we calculated FIB-4 scores: BARD, BIb-FS and NAFLD Fibrosis score (NAFLD-FS). Blood samples were collected to determine amionotransferases, glucose, albumin level, platelet count. The abdominal ultrasonography was performed by the same physician and steatosis was graded using a semi-quantitative scale. The same physician using conventional M probe or XL probe, with 10 valid acquisitions. We considered significant fibrosis (F2) when estimated cutoff of F2 was 7.1 kPa, severe fibrosis (F3) when cutoff value was 9.5 kPa, and cirrhosis (F4) with cutoff value >12.5 kPa.

Results: 86.84% patients had metabolic syndrome and 51.31% had diabetes mellitus.40 patients had mild steatosis, 59 had moderate and 53 had severe steatosis. After we performed TE 69.07% of patients had no significant fibrosis, 14.47% had F2, 9.86% had F3 and 7.23% had F4. The area under the receiver-operating characteristic curve (AUROC) of TE was 0.823 (95%, CI 0.74-0.9). 14.47% had F2, 9.86% had F3 and 7.23% had F4. The area under the receiver-operating characteristic curve (AUROC) of TE was 0.823 (95%, CI 0.74-0.9). Sensitivity and specificity for cutoff 7.1 kPa was 0.74 respectively 0.79 to exclude significant fibrosis. NAFLD-FS correlated stastistic significant with TE (p < 0.0001). BARD score did not correlate with TE and NAFLD-FS for significant fibrosis.FIB-4 correlated with TE for high degree fibrosis (p = 0.004).

Conclusion: NAFLD-FS, FIB-4 and TE can be used together to evaluate the progression of fibrosis in NAFLD and to select the patients for liver biopsy. In our study BARD score was not useful in detection of high degree fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


A040

United European Gastroenterology Journal 5(5S)

Disclosure of Interest:

No conflicts of interest.

P0679 EFFECT OF GRANULOCYTE COLONY-STIMULATING FACTOR (G-CSF) ON MORTALITY AND COMPLICATIONS VIZ. SEPSIS, ENCEPHALOPATHY, HEPATORENAL SYNDROME, AND GASTROINTESTINAL BLEED IN SEVERE ALCOHOLIC HEPATITIS: A RANDOMIZED CONTROLLED STUDY

A. Sharma

Gastroenterology And Hepatology, Fortis Escorts Hospital Jaipur, Jaipur/India

Contact E-mail Address: abhineet11005@yahoo.com

Introduction: Severe alcoholic hepatitis has very high short-term mortality. Compared to standard medical therapy (SMT), GCSF improves clinical and biochemical profiles, morbidity and mortality in these patients. We evaluated efficacy of G-CSF in modulating the disease course of severe alcoholic hepatitis over a period of 3 months in terms of mortality, morbidity by Discriminant function (mDF), Child–Turcotte–Pugh (CTP) and Model for End-Stage Liver Disease (MELD) score and various complications viz. sepsis, GI bleed, encephalopathy, hepatorenal syndrome (HRS) in comparison to SMT. We also studied the mobilising effect of GCSF on bone marrow stem cells measured by counting CD34+ cells from peripheral blood.

Aims & Methods: The present study was performed to evaluate the safety and efficacy of GCSF on mortality and complications viz. sepsis, encephalopathy, hepatorenal syndrome (HRS), and gastrointestinal bleed (GI Bleed) and also to investigate whether G-CSF therapy could improve the indices of severity of liver disease, such as Discriminant function (mDF), Child–Turcotte–Pugh (CTP), Model for End-Stage Liver Disease (MELD) score in patients with severe alcoholic hepatitis. 50 patients with severe alcoholic hepatitis were randomly assigned to groups A and B (25 in each). Both groups were given SMT, while in addition, patients in group A were given 5iu/kg GCSF subcutaneous (10 doses for 5 days). We assessed survival, changes in CTP, MELD and mDF scores and the development of complications till 90 days.

Results: The baseline parameters in both groups were comparable. On day 6 group A had higher mean leukocyte and CD34 counts than group B (p = 0.03). In 90 days follow up 17 patients in group A (68%) and 9 patients in group B (36%) survived (p = 0.04). Mean changes for different scores were greater in group A then group B i.e. CTP (~41.97% vs ~8.84%), MELD (~50.89% vs 10.09%) and mDF (~74% vs 18%) (p < 0.001). The percentages of patients who developed HRS, HE, or sepsis were lower in group A than in group B (28% vs 64%, 32% vs 64%, and 28% vs 68%, respectively) (p < 0.001). There was no significant difference in GI bleed in both groups.

Conclusion: In severe alcoholic hepatitis, GCSF therapy significantly improves the survival. It also significantly reduces CTP, MELD, and mDF scores and prevents the development of complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0680 ALCHEHOLIC LIVER DISEASE/NON ALCOHOLIC FATTY LIVER DISEASE INDEX (ANLI): HOW TO DISTINGUISH THE DISEASE FROM NON ALCOHOLIC LIVER DISEASE WITHOUT HISTOLOGY


1Gastroenterology, Hospital São João, Porto/Portugal
2Gastroenterology Department, Centro Hospitalar S. João, Porto, Portugal
3Centro Hospitalar S. João, Porto Medical School, Porto/Portugal
4Pathology Department Centro Hospitalar S. João, Porto/Portugal
5Centro Hospitalar São João, Porto/Portugal

Contact E-mail Address: ruilopesgaspar@gmail.com

Introduction: Steatosis/steatohepatitis is one of the most common liver diseases with increasing prevalence and results from excessive alcohol consumption (alcoholic liver disease) or nonalcoholic fatty liver disease (NAFLD). The differential diagnosis is of paramount importance as they have different management and therapeutic approaches, being liver biopsy the gold standard for establishing the diagnosis. The distinction between these two entities without biopsy is
difficult due to the unreliable history of alcohol consumption and lack of sensibility of a single marker. In order to overcome these difficulties, a C6 ANI (alcoholic liver disease/nonalcoholic fatty liver disease index) was created for a non-invasive determination of fatty liver diagnosis.

**Aims & Methods:** The aim of this study was to evaluate the reliability of ANI as a non-invasive diagnostic tool for NAFLD from ALD. A retrospective study between 2010 and 2015 in patients with definite diagnosis of NAFLD and ALD based on clinical, biochemical and histological criteria was performed. ANI scoring system in the differentiation of ALD and NAFLD was evaluated through the area under the receiver-operating curve (AUROC). ANI score was calculated through Mayo Clinic formula.

**Results:** This study was carried out in 22 patients with ALD and 120 with NAFLD, 87 men (61.3%) with a median age of 51 ± 13 years. NAFLD patients presented higher body mass index (BMI) of 28.9 ± 5.9 vs 23.9 ± 6 in ALD. ANI showed a sensitivity of 81% and specificity of 79% for the diagnosis of ALD with a cut-off value of -1.96 [AUROC 0.806 (0.715-0.898), p < 0.001]. ANI greater than -1.96 indicates a diagnosis of ALD whereas ANI less than -1.96 indicates diagnosis of NAFLD.

**Conclusion:** ANI scoring system is a non-invasive diagnostic and reliable tool that may be used to distinguish NAFLD from ALD, decreasing the need for live biopsy. ANI greater than -1.96 suggests the diagnosis of ANI and ALD lesser than -1.96 suggest NAFLD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


Iron-dependent cell death and its inhibitors can improve cell biochemical and lipid peroxidation, cytokines and mitochondrial dysfunction. Ferroptosis is an injury type that is not clear yet, and its pathogenesis is mainly related to oxidative stress, which is also increased year by year. However, the mechanism of alcohol-induced liver injury in China, alcohol consumption is growing and the incidence of alcoholic liver injury is growing public health problems. With the improvement of living standards in China, alcohol abuse and alcohol dependence have become the world’s major health problems. Alcoholism, hepatotoxic reactions were of grade I and in 2 (5%) – of grade II level, with no statistically significant changes in protein synthesis liver function. On the 56th day of treatment in 7 (15.9%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 1.8 times, AST – in 1.3 times, ALP – in 1.6 times, GGT – in 1.9 times compared to normal levels, the bilirubin and total protein levels remained in the normal range, that consistent with grade I. In group II hepatitis was detected in 26 (65%), which was characterized by the increased activity of ALT and AST in 2.6 and in 2.3 times respectively, GGT and ALP in 2.6 and 3.7 respectively, the level of total bilirubin increased in 3.6 times (p < 0.05), of which in 10 (25%) patients hepatocellular reactions were of grade I and in 16 (40%) – of grade II level.

Conclusion: The presence of the outcome results in a significant increase in the frequency and degree of hepatic reactions in patients with AL during chemotheraphy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0685 AMANITA PHALLOIDES HEPATOTOXICITY: 20-YEAR EXPERIENCE IN A GASTROENTEROLOGY INTENSIVE CARE UNIT
C. Atalaia Martins, J. Carvalheiro, P. Ferreira, P. Marques, I. Tomé Gastroenterology, Centro Hospitalar e Universitário de Coimbra, Coimbra/Portugal
Contact E-mail Address: catarinataliaamartins@gmail.com

Introduction: Ingestion of amatoxin-containing mushrooms is a rare medical emergency. Amanita toxins cause massive hepatic necrosis and acute liver failure. Liver transplantation can be life-saving but liver transplantation criteria are complex and not consensual. Mushrooms poisoning is associated with a high mortality rate.

Aims & Methods: We conducted a retrospective analysis of demographic, clinical, therapeutic and prognostic data of all patients with Amanita phalloides poisoning admitted to a Gastroenterology Intensive Care Unit (GIUC) of a tertiary hospital between 1997 and 2017.

Results: A total of 27 patients were included: 55.6% were male and the mean age was 53 ± 15 years old (range, 16–75). The most frequent initial symptoms were vomiting (88.9%), diarrhea (70%) and abdominal pain (74.1%). The mean time between ingestion and onset of symptoms was 10.1 hours and GIUC admission was 59.0 hours. At admission 33.3% presented hepatic encephalopathy (25.9% grade 1; 3.7% grade 3 and 3.7% grade 4). Laboratory characterization at admission: mean INR was 4, total bilirubin 3.5 mg/dL, creatinine 1.9 mg/dL and factor V 25.8%. The different criteria for emergent liver transplantation were assessed: 37% (n = 10) met Child’s criteria. 59.3% (n = 16) met King’s College criteria, 35.3% (n = 9) met Gancz criteria and 40.7% (n = 11) met Escudé criteria. 44.4% (n = 12) of patients met at least one admission and 33% during hospitalization. Regarding specific medical treatment: 92.6% received siltibine, 59.3% acetacylethine and 48.1% penicillin. In the group of patients with emergent liver transplantation criteria, 63% were effectively transplanted. In the sub-group of patients who met criteria but were not transplanted (n = 6): in 66.7% (n = 4) the reason was absence of donor, in 16.7% (n = 1) there was liver function recovery and in 16.7% (n = 1) a contraindication was found (irreversible intestinal ischemia diagnosed intraoperatively). The mortality in this sub-group was 83.3%. The mortality rate in transplanted patients was 60%. All patients without emergent liver transplantation criteria survived.

Conclusion: Amanita phalloides poisoning has a severe and rapidly progressive presentation, often with indication for liver transplantation. Patients are admitted late to GIUC. Mortality rate remains high even in transplanted patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0686 BINGE DRINKING AMONG YOUNG STUDENTS IS A RISK FACTOR FOR THE DEVELOPMENT OF AN ALCOHOL USE DISORDER: RESULTS FROM A CROSS-SECTIONAL STUDY
G. Addolorato1, G. A. Vassallo1, G. Antonelli2, M. Antonelli1, C. Tarli1, A. Mirijello1, C. Mosoni1, M. M. Rando1, L. Sestito1, M. Barbara1, M. F. Maida1, C. Cammà1, A. Gasbarrini3
1Catholic University of Rome, Rome/Italy
2Digestive And Liver Diseases Unit, Sapienza Università di Roma at Sant’Andrea University Hospital, Roma/Italy
3Biomedical Department Of Internal and Specialized Medicine, University of Palermo, Italy, Palermo/Italy
4Internal Medicine, Gastroenterology And Liver Diseases, Gemelli Hospital Dept. of Internal Medicine Dept. of Gastroenterology, Rome/Italy

Introduction: Binge drinking among young students is a risk factor for the development of alcohol use disorder. The aim of this study was to assess the prevalence of alcohol use disorder, its characteristics and factors associated with it.
Contact E-mail Address: gabriele.vassallo86@libero.it

Introduction: Binge drinking is a common pattern of alcohol consumption among young population. At present few data are available on the possible relationship between binge drinking and alcohol use disorder (AUD) in adolescent. The aim of this study was to assess drinking habits, patterns of alcohol consumption, smoking habits, use of illicit drugs, the prevalence of binge drinking and AUD among young students. The correlation between binge drinking and AUD was also investigated.

Aims & Methods: This study was performed on 2704 subjects attending high school. Questionnaires regarding socio-demographic data, anthropometric characteristics, pattern and amount of alcohol intake, smoking habits, use of illicit drugs, and physical activity were administered to students. Moreover Italian versions of AUDIT, STAI-Y1, STAI-Y2 and ZUNG scale were administered.

Results: Alcohol intake was reported by 2126 students (79%); among them 1278 subjects that reported binge drinking behavior than in those that did not report binge drinking (p < 0.0001).

Conclusion: Alcohol consumption and abuse among young students is alarming. Binge drinking behavior among young students seems to be very common and it seems a risk factor for the development of AUD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0685 LOW LYSOPHOSPHATIDYLCHOLINE LEVELS MAY PREDICT SEVERE ALCOHOLIC HEPATITIS

P. Fischer1, A. Horhat1, C. Hebristean2, B.D. Procopet1, M. Tantau1, C. Socaciu2, H. Stefanescu4

1Gastroenterology, Dr. O. Fodor Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Romania, Cluj-Napoca/Romania
2Research and Development Centre, BIOD4ATECH (for Applied Biotechnology in Diagnostic and Molecular Therapy, Cluj-Napoca/Romania
3Endoscopy, Regional Institute of Gastroenterology and Hepatology, University of Medicine and Pharmacy Iuliu Hatieganu Cluj-Napoca, Cluj-Napoca/Romania
43rd Medical Clinic, University of Medicine and Pharmacy “Iuliu Hatieganu”, Cluj-Napoca/Romania

Contact E-mail Address: adelinarhorhat25@gmail.com

Introduction: Severe alcoholic hepatitis (SAH) remains a condition which bears high mortality and morbidity rates, as well as high healthcare costs. This is why adequate selection of patients who will benefit the most from corticotherapy is of utmost importance. Although serum biomarkers are available (Maddrey Discriminant Function - MDF), the diagnostic of SAH relies on liver biopsy. Previous metabolomic studies have shown a core metabolic phenotype represented by decreased serum lysophosphatidylcholines (LPC) and increased serum bile acids that occurs relatively early in liver diseases regardless of etiology, and remains stable in their evolution, including liver cirrhosis and hepatocellular carcinoma (1). Our previous work also showed that decreased LPC levels are associated with alcoholic liver disease (ALD).

Aims & Methods: The aim of the study was to assess the metabolic profile of patients with ALD and to identify potential new biomarkers associated with severity. Between December 2015 and September 2016, 64 patients with biopsy proven AH were included (38 with SAH - MDF ≥ 32 and 24 with non-severe AH - MDF < 32). Fasting serum was stored at -80 degrees after centrifugation at 5000 rpm for 10 minutes. Specific purification protocol metabolomic analysis was performed using Thermo Scientific UHPLC UltiMate 3000 system, equipped with a Dionex quaternary pump delivery system and a Bruker Daltonics MaXis MS detection equipment (version 2012). Biostatistical analysis The chromatograms obtained were processed using CompassDataAnalysis_4.2 software (Bruker, Germany) and about 3000–4000 molecular masses were identified. Those data were further processed using ProfileAnalysis (Bruker, Daltonics): time alignment, normalization by sum of bucket values in analysis, 80% bucket filter, internal recalibration, etc. The matrix obtained was further processed through MetaBioAnalysis, to analyze samples through univariate and multivariate statistical analysis.

Results: Univariate and multivariate statistical analysis by MetaBioAnalysis identified 10 potential biomarkers. Among them, LPC (18.0) showed good discrimination for SAH (AUC = 0.804) with significantly lower values as compared with non-severe AH (0.38 fold change, p = 6 × 10^-11).

Conclusion: SAH appears to have a different metabolic profile, mainly due to changes in lysophosphatidylcholine metabolism. Targeted metabolomic studies are required in order to confirm the results and to evaluate the possible applications in current clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


Abstract No: P0685

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3. Scott RA, Austin AS, Kolhe NV, McIntyre CW, Selby NM. Acute kidney injury (AKI) criteria (0.682 vs 0.533; 0.678 vs. 0.588; 0.618 vs. 0.509, p < 0.05) and higher in-hospital, 28 and 90-day mortality was significantly higher than the AUC of conventional hepatorenal failure staging (18.77% vs. 11.20%, p < 0.0001), urinary tract infection (13.13% vs. 8.68%, p = 0.0052) and sites of infections such as pneumonia (14.99% vs. 10.50%, p = 0.0111), peritonitis (14.29% vs 2.52%, p < 0.0001), sepsis (25.63% vs. 9.52%, p < 0.0001), biliary tract infection (7.14% vs. 3.22%, p = 0.0008) and cellulitis (11.62% vs. 3.98%, p = 0.0207) increased risk for HE. HE (adj HR, 0.90, 95% CI 0.76–1.06, p = 0.02) and infections (adj. HR, 1.13, 95% CI 0.93–1.38, p = 0.23) increased hazards of death but did not reach statistical significance.

Conclusion: This is the first reported case-control study of HE in Taiwan. The study provides further evidence that infections are strongly associated with HE development among patients with decompensated cirrhosis, and the hospitalization severity of liver disease and in-hospital and short-term mortality among patients with and without AKI. Compared the accuracy of the conventional criteria vs. ICA-AKI criteria in the prediction of mortality.

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3. Vannti, V, D’Amico, G, and Fede, G (2010). Infections in patients with liver cirrhosis; risks for HE vary by relative frequencies and sites of infections. These data provides important information relevant to the prevention and management of cirrhotic patients at risk for HE.

Disclosure of Interest: All authors have declared no conflicts of interest.

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3. Vannti, V, D’Amico, G, and Fede, G (2010). Infections in patients with liver cirrhosis; risks for HE vary by relative frequencies and sites of infections. These data provides important information relevant to the prevention and management of cirrhotic patients at risk for HE.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: The aim of this study was to evaluate the efficacy of carvedilol variceal bleeding in cirrhotic patients with occlusive portal vein thrombosis. Between January 2014 and December 2015, cirrhotic patients with occlusive non-malignant PVT were enrolled in a tertiary center. PVT was suspected by Doppler ultrasound and confirmed by computed tomography. Cirrhotic patients with esophageal varices and no previous variceal bleeding were randomized to carvedilol 6.125 mg daily or Propranolol 40 mg daily. End points were esophageal variceal bleeding or death.

Results: During the study period forty eight patients were evaluated. Twenty one and twenty seven patients were randomized in carvedilol and propranolol arms respectively. Mean age was 49±12.2 years: 33 (68.7%) were males; 60.4% had viral cirrhosis; mean Child-Pugh score was 7.2±2.6 and mean follow up was 12.3±9.1 months (range 1–29 months). All the patients had occlusive non-malignant PVT, most of them involving only the trunk, and grade 2 or 3 esophageal varices. Both carvedilol and propranolol groups had comparable variceal bleeding rates (14.2% vs. 14.8%, P=0.062), bleed related mortality (9.5% vs. 11.1%, P=0.027) and overall mortality (23.8% vs. 22.2%, P=0.044) respectively. Adverse events in carvedilol group were hypotension (n=2), requiring cessation of therapy, while and dyspnea (n=3) resolved spontaneously. In the propranolol group there was 1 adverse event that required discontinuation of treatment (grade 2 atrioventricular block).

Conclusion: Our study suggests that carvedilol is probably not superior to propranolol in preventing first variceal bleeding in cirrhotic patients with occlusive PVT, and they both can be used as primary prophylaxis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0694 ASSESSMENT OF PROGNOSTIC PERFORMANCE OF ALBI, CHILD-PUGH AND MELD SCORES IN PATIENTS WITH LIVER CIRRHOSIS COMPROMISED WITH ACUTE UPPER GASTROINTESTINAL BLEEDING

S. Xavier1, R. Villas-Bous2, P. Boui Carvalho3, J. Magilhães2, C. Marinho3, J. Cotter2
1Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga/Portugal
2Gastroenterology Department, Hospital da Senhora do Oliveira, Guimarães, Guimarães/Portugal
3School Of Medicine, University Of Minho, Life and Health Sciences Research Institute, Braga/Guimarães/Portugal
4Pf Government Associate Laboratory
4 ICFS/IBS, Braga/Guimarães/Portugal

Contact E-mail Address: smxavier@gmail.com

Introduction: The ALBI score was recently developed to assess the severity of liver dysfunction, taking into account albumin and bilirubin levels. We aimed to assess its prognostic performance in patients with liver cirrhosis complicated with upper gastrointestinal bleeding (UGIB) while comparing it with Child-Pugh (CP) and MELD scores.

Aims & Methods: Retrospective uncenter study, including consecutive adult patients with cirrhosis admitted for UGB between January 2011 and November 2015. Clinical, analytical and endoscopic variables were assessed and ALBI, CP and MELD scores at admission were calculated. Statistical analysis was performed using SPSS v21.0 and MedCalc v.16.4.3, and a two-tailed p value <0.05 was defined as indicating statistical significance.

Results: Included 111 patients with a mean age of 57±12 years, 76.6% were males. Liver cirrhosis was most frequently alcoholic (89.2%) and the most common etiology for UGIB was variceal hemorrhage, in 75.5% of patients. During the first 30 days of follow-up 10 patients died (1st year mortality of 10.8%). During the first year of follow-up another 10 patients died (1st year mortality of 19.8%). When comparing the three scores, regarding in-stay and 30 days mortality, only ALBI score showed statistical significant results, with an area under the curve (AUC) of 0.82 (p <0.01) for both outcomes. Regarding 1st year mortality, AUC for ALBI, CP and MELD scores, were 0.71 (p <0.01), 0.64 (p <0.05) and 0.66 (p=0.02), respectively, while for global mortality AUC were 0.75 (p <0.01), 0.72 (p <0.01) and 0.72 (p <0.01), respectively. When comparing the AUC of the three scores, no significant differences were found regarding 1st year mortality and global mortality.

Conclusion: In our series, ALBI score accurately predicted both in-stay and 30 days mortality (0.82 (p <0.01)), while CP and MELD scores weren’t able to predict these outcomes. All scores showed a fair prognostic prediction performance regarding 1st year and global mortality. These results suggest that ALBI score is particularly helpful in the assessment of short term outcomes, with a better performance than the most commonly used scores, and may assist the clinician in the stratification of care at admission and maybe even in the referral to liver transplant.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0693 CARVEDIOL VS PROPRANOLOL: EFFECT OF THE PRIMARY PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOSE PATIENTS WITH PORTAL VEIN THROMBOSIS

I. Girlea1, A. Trifan1, C. Cojocaru1, A.M. Singeap1, C. Stări1, O. Stoica1, S. Chiria1, T. Cucureanu2, C. Stanciu2
1Gastroenterology, “Gr. T. Popa” University of Medicine and Pharmacy, Iasi/Romania
2Institute of Gastroenterology and Hepatology, Iasi/Romania

Contact E-mail Address: gilda_i215@yahoo.com

Introduction: Portal vein thrombosis (PVT) is recognized as an independent factor of variceal bleeding. Beta blockers are the mainstay treatment to prevent variceal bleeding in cirrhotic patients. Carvedilol has been shown to be equal to propranolol in preventing first bleeding in cirrhotic patients, however, the efficacy of this policy in patients with PVT is unknown.

Aims & Methods: To investigate the clinical impact of subclinical high TRPG on survival after living donor liver transplantation. In cirrhosis patients, mPAP-FIO2<0.6 may not accurately reflect the congestive pressure to the liver, as the pressure might escape via a pulmonary shunt. Subclinical high TRPG is an important marker for predicting congestive pressure gradient is a risk factor for survival after living donor liver transplantation. Patients exhibiting a tricuspid regurgitation pressure gradient (TRPG) >15 mmHg were categorized as potential candidates for OLT and were accepted not only for deceased donor LT (DDLT), but also for living donor related LT (LDDLT). However, the post-OLT course of PHT complica-

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Reference
**PATIENTS WITH COMPENSATED LIVER CIRRHOSIS**

**E. Shahnin**, 1, M. Barone2, A. Iannone3, M.T. Viggiani3, V. Corvace3, 1, M. Principi2, A. Di Leo2

**1Dept. Of Emergency And Organ Transplantation, Gastroenterology Unit, Bari/Italy**

**2Emergency And Organ Transplantation, University of Bari, Bari/Italy**

**3San Camillo Hospital, Manfredonia (Foggia), Italy, Gastroenterology Unit, Foggia/Italy**

**Contact E-mail Address:** vincistefin00@gmail.com

**Introduction:**
Increased liver frequency (CFF values ≤39 Hz identify cirrhotic patients with minimal hepatic encephalopathy (mHE) and predict their risk of developing overt hepatic encephalopathy (oHE). However, these results have been obtained in cirrhotics with advanced liver disease suffering a previous episode of liver decompensation (74% of patients) or oHE (14% of patients).

**Aims & Methods:** Herein, we evaluated the effectiveness of CFF in predicting the first episode of oHE in compensated cirrhosis (DC).

**Results:** A total of 134 selected patients and 150 healthy subjects were evaluated using CFF. A CFF value was considered normal when ≥39 Hz and pathological when ≤39 Hz. At baseline, we evaluated demographic characteristics, laboratory tests, model for end-stage liver disease (MELD) score, and Child-Pugh class in all patients. Then, they were followed up for 31.5 ± 18.9 months and received clinical examinations and laboratory tests every six months.

**Results:** At baseline, all controls had a CFF >39 Hz with a mean value significantly higher than that observed in 93 patients with CFF <39 Hz (p < 0.001), while the remaining 41 patients showed a CFF ≥39 Hz. Our analysis demonstrated a significant correlation between CFF and MELD (r = 0.49, p = 0.0003), while the prevalence of CFF values <39 Hz significantly increased with the progression of the Child-Pugh class (p = 0.003). Interestingly, the CFF value at baseline was predictive of the first episode of HE both by log-rank test (p = 0.001) and Cox regression analysis (HR = 5.623; 95% CI = 2.433, 12.991; p < 0.001).

**Conclusion:** We demonstrated, for the first time, that CFF predicts the first episode of oHE in a population of compensated cirrhotics that never experienced HE. Cirrhotic patients should be routinely screened by CFF to identify patients at risk of oHE.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
randomized to placebo or LRGG treatment, for 2 months. In all intention to treat and per protocol patients, demographic characteristics, laboratory test, model for end-stage liver disease (MELD) score, and Child-Pugh class were evaluated.

**Results:** CFF value increased in both LRGG and placebo groups at the end of 2 months. In all intention to treat and per protocol patients, demographic characteristics, laboratory test, model for end-stage liver disease (MELD) score, and Child-Pugh class were evaluated.

**Conclusion:** The risk of development of chronic HCV infection was associated with T allele carriage of TLR3rs3775291 SNP. While the carriage of C allele of TLR7 rs3853839C allele was associated with spontaneous HCV clearance in both male and female subpopulations in Egyptian families. Disclosure of Interest: All authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.
resulting in cirrhosis and graft failure within 5 years after transplant. Different studies evaluating the use of DAA drugs in transplant recipients have observed a significant reduction in HCV viremia and a higher SVR rate compared to interferon-based therapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0704 IMPROVEMENT OF LIVER STIFFNESS VALUES MEASURED BY TRANSITION ELASTOGRAPHY AFTER CHRONIC HEPATITIS C TREATMENT WITH DIRECT ACTION ANTIVIRALS AND EVOLUTIVE CORRELATION OF THROMBOCYTOPENIA AND PRESENCE OF ESOPHAGEAL VARICES**

M. Perez Ferrer,1 I. Maestro Prada,2 A. Mcgee,2 J.L. Castro Urda,1 L.A. Castillo Hernandez,1,2 C. Garcia Ramos1

1Gastroenterology, Hospital Severo Ochoa, Leganes/Spain
2Epidemiology, University Historiario Móstoles, Móstoles/Spain

**Introduction:** Improvement in liver stiffness (LS) measured by transient elastography (TE) has been observed in patients with chronic hepatitis C treated with direct action antivirals (DAA).1,2 The Baveno VI guidelines1 propose that patients with compensated advanced chronic liver disease (cACLD), LS measurement <20 kPa and a platelet count ≥150,000/μL can avoid screening endoscopy as their combination is highly specific for excluding clinically significant oesophageal varices (EV).3 These improvements have been validated recently.4

**Aims & Methods:** The aim of this study was to quantify LS and thrombocytopenia (quantitatively (measured in Kilopascals) and qualitatively (Stages of F0–F4 fibrosis) in a stationary phase after the sustained virological response (SVR) in patients with cACLD (14). The secondary objective was to assess whether this improvement in LS measurements has a clinical correlation with changes in platelet numbers and the presence of varices according to Baveno VI Criteria.

**Results:** 84 patients (49 men and 35 women) with cACLD were included in the study. Median TE on baseline (BL) prior to DAA treatment was [mean (range), 23.86 (12.5–75) kPa] and decreased to [mean (range), 15.6 (4.8–75) kPa] at SVR 24 and [mean Range], 16.19 (3.62–75) kPa] at SVR > 54. Both were statistically significantly lower showing a decrease in LS around 30% between BL and SVR 24 and 44% between BL and SVR > 54. We did not find any statistically significant differences between SVR 24 and SVR > 54. Regarding the probability of qualitative improvement of the LS (improve from F4 to F3 or less) the AUC was 0.8 with 17.9 kPa as the cut-off point which has a Sensitivity of 0.76 and Specificity of 0.81. NPV = 78.12, PPV = 78.57. 32 patients with highly suggestive cACLD (LS > 15 kPa) underwent upper endoscopy (UE): 10 (32%) had varices (5 small EV and 5 big EV). 17 (53%) fulfilled the Baveno VI criteria (3 with small EV and 4 with big EV). There were only 3 cases of EV misdiagnosed by Baveno VI Criteria. We did not find any significant differences in platelet levels or in the regression of varices.

**Conclusion:** This study validates improvement in LS measurements as a useful tool in the clinical management of the patient. The Baveno VI criteria are a useful tool in daily practice to avoid unnecessary UE. Further investigation with larger samples is needed.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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P0706 CLINICAL FEATURES OF PATIENTS DEVELOPING HCC AFTER ACHIEVING SVR WITH DAA AGAINST CHRONIC HEPATITIS C

K. Ishida, T. Nakatani, Y. Motokawa, F. Tomooka, A. Shibamato, Y. Fujimoto, Y. Aihara, S. Nagamatu, M. Uejima, H. Matuo, E. Kikuchi Gastroenterology, Nara Prefecture General Medical Center, Nara/Japan

Contact E-mail Address: k.ishida1549@yahoo.co.jp

Introduction: Although the conventional IFN-based therapy has made a significant achievement in treating patients with hepatitis C virus (HCV), including the preventive effect of hepatocarcinogenesis after achieving sustained virological response (SVR), patients intolerant of IFN, such as those with advanced age or liver cirrhosis (LC), could not savor its privilege. The appearance of direct-acting antivirals (DAAs) provided almost every patient with the chance to receive the treatment without any serious adverse effects (AEs). In addition, SVR could be highly expected in more than 95% of patients treated with DAAs. However, the preventive effect of DAAs for the future hepatocarcinogenesis following eradication of HCV remains unknown. In our facility, the association of DAAs to hepatic fibrosis stage (F) and development of hepatocellular carcinoma (HCC) within 2 years after achieving SVR.

Aims & Methods: We evaluated the clinical features of patients developing HCC after confirming SVR with DAAs against HCV. One hundred and fifty-three patients achieving SVR defined as negative HCV-RNA 12 weeks after cessation of DAA (oral combination therapy with Daclatasvir/Asunaprevir, Ombitasvir/Paritaprevir/Ritonavir, Sofosbuvir/Ledipasvir, or Sofosbuvir/Ribavirin) were enrolled in this study. No gender, male/female: 79.2, genotype: 2/2 122/31 chronic hepatitis/ LC 124/29, PLT 15.3 ± 0.5 × 10^12/L, ALT 44.9 ± 3.6/19.5 ± 1.1 IU/L, APRI 1.3 ± 0.4/0.7, Wisteria floribunda agglutinin positive M2-binding protein (WFA(þ/þ)-M2BP) 3.3 ± 0.5 COI, ALP 12.1 ± 2.4 mAU/mL, PI-IVK 28.8 ± 4.3 mAU/mL. All patients were divided into 2 groups (A: 9 patients with HCC developing after SVR achievement, B: 144 without HCC after achieving SVR). Serum parameters (PLT, WFA(þ/þ)-M2BP, FIB-4 index, APRI, ALT, ALB, AFP, PI-IVK) and age were evaluated between 2 groups. Results: In group A, significant declining (pre-DAA treatment/the time of achieving SVR) was observed in ALT (44.9 ± 3.6/19.5 ± 1.1 IU/L), APRI (1.3 ± 0.4/0.7), WFA(þ/þ)-M2BP (3.3 ± 0.5/0.7 COI), FIB-4 index (3.7 ± 0.2/0.7 COI) and APRI (1.2 ± 0.1/0.7 ± 0.5), and significant increase in ALB (44.9 ± 3.6/19.5 ± 1.1 IU/L) and PLT (44.9 ± 3.6/19.5 ± 1.1 IU/L). In group A, significant declining was observed only in ALT (45.3 ± 10.9/16.7 ± 2.2 IU/L). This result indicates that DAA treatment significantly ameliorates parameters related with hepatic fibrosis as well as hepatic inflammation in group A. However, it led to the significant amelioration only in the parameters related with hepatic inflammation in group A. Next, focusing on parameters after achieving SVR, WFA(þ/þ)-M2BP (A: 3.4 ± 0.6/B: 1.7 ± 0.2 COI) and FIB-4 index (5.7 ± 1.8/3.1 ± 0.2) were significantly higher and Apri (0.6 ± 0.4/1.1 ± 0.3) were higher and Alb (3.8 ± 0.2/4.0 ± 0.3 g/dL) was significantly lower in group A comparing with group B. When dividing group A into 2 groups (C: new occurrence of D: recurrence), APRI (3.0 ± 1.3/2.7 ± 1.2 COI) and FIB-4 index (3.7 ± 1.8/2.4 ± 1.6 ± 0.2) were significantly lower and Alb (44.9 ± 3.6/1.1 ± 0.3 ± 0.4 g/dL) were lower in group D than group C, although no significant difference was seen between 2 groups. This result suggests that there might be more patients with progressive hepatic fibrosis in group D comparing with group C. Finally, when univariate analysis showed WFA(þ/þ)-M2BP, FIB-4 index and Alb were significantly associated with the development of HCC after achieving SVR with DAA against HCV, multivariate analysis revealed only Alb was the significantly independent factor contributing to HCC development after SVR achievement. Conclusion: Low level of serum albumin as well as the progression of hepatic fibrosis could be associated with the development of HCC after confirming SVR with DAA to HCV. Disclosure of Interest: All authors have declared no conflicts of interest.

P0707 EARLY OCCURRENCE OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH HEPATITIS C VIRUS TREATED WITH DIRECT-ACTING ANTIVIRALS


Department Of Surgery, Hyogo College of Medicine, Nishinomiya/Japan

Contact E-mail Address: shai1005@hyo-med.ac.jp

Introduction: Direct-acting antivirals (DAAs) are novel antiviral drugs for hepatitis C virus (HCV) and have enabled the achievement of a high rate of sustained
virological response (SVR) [1]. However, the impact of DAAs on the occurrence of hepatocellular carcinoma (HCC) and HCC recurrence after curative hepatic resection of HCC has been recently discussed [2, 3], but remain unclear.

Aims & Methods: The clinical data of 97 patients who underwent curative hepatic resection for primary HCC with HCV at our department between January 2012 and January 2016 were reviewed to clarify the impact of DAAs on HCC occurrence and recurrence. SVR was defined as no detection of HCV RNA in the serum at 24 weeks after the cessation of antiviral therapy.

Results: SVR was achieved in 21 patients treated with interferon (IFN)-based regimens of DAAs with IFN at hepatocytome. Between the two groups, there were no significant differences in the clinical characteristics, including the age, prevalence of diabetes mellitus, drinking history, preoperative liver function, operative procedures, tumor size and presence of liver cirrhosis, but the median duration from the date of SVR to the date of HCC incidence was significantly shorter in patients treated with DAAs (14 days, range: –123 to 235 days) than in those treated with IFN-based regimens (324 days, range: 35 to 4190 days). In particular, HCC was detected within 24 weeks after the cessation of antiviral therapy in 3 patients treated with DAAs. After hepatocyte, SVR was achieved in 21 (DAAs: 16 patients, IFN-based regimens: 5 patients) of the 67 patients without SVR when hepatectomy was performed, and the 1- and 3-year disease-free survival (DFS) rates were 93.3% and 83.0% in patients after SVR treated with DAAs (n = 25), 90.9% and 71.8% in patients with IFN-based regimens (n = 26) and 57.8% and 19.7% in patients without SVR (n = 46), respectively, regardless of the timing of hepatocyte, respectively. The DFS rate was significantly higher in patients with SVR than in those without SVR (p < 0.05), but was not markedly different according to the antiviral treatments (p = 0.504).

Conclusion: While DAAs were able to reduce the DFS rate, the early occurrence of HCC in patients after SVR treated with DAAs is more frequent than that among patients treated with IFN-based regimens. Therefore, careful follow-up with imaging series is needed even for patients with SVR treated with DAAs.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0708 EFFICACY AND SAFETY OF SOFOBUVIR AND RIBAVIRIN IN HCV POSITIVE PATIENTS WITH RENAL IMPAIRMENT
M.O. T. Butt
Gastroenterology And Liver Transplant, Shifa International Hospital, Islamabad, Islamabad\Pakistan

Contact E-mail Address: mosamabutt2016@gmail.com

Introduction: Hepatitis C virus infection is a leading cause of chronic liver disease affecting more than 170 million people worldwide. HCV infection in the setting of renal impairment is not uncommon. Despite the major developments in the treatment of HCV, treatment of this sub group of patient with impaired renal function is still a challenge.

Aims & Methods: The aim of this study is determine the efficacy and safety of sofosbuvir and ribavirin in HCV positive patients with renal impairment. All consecutive patients of HCV related liver disease with creatinine clearance less than 50 ml/min were included in the study. Data was collected for tolerability, efficacy and on treatment adverse event. The patients received sofosbuvir and dose adjusted Ribavirin according of CrCl. Virological response was checked at 1 month (RVR), 3 months (EVR) and at the end of treatment.

Results: A total of 31 patients were included in the study were 31 out of which 17(54.8%) were male. Mean age was 52.23 ± 17.6 years while the mean BMI was 25.0 ± 4.3 kg/m2. 10 (32.25%) patient were on regular hemodialysis. 26 (83.9%) patients had CTP-A while 5 (16.1%) had CTP-B disease. Majority of the patients received each Interferon and Peg interferon therapy. Treatment was stopped in 2 (6.5%) patients because of disease decompensation while 3 (9.7%) were lost to follow up. ETR was achieved in 25 (96.1%) out of 26 patients who completed treatment. Similarly 12 (80.0%) out of 15 patients had achieved SVR-12 so far. During the therapy 10 (32.3%) patients had adverse events, 6 (19.4%) suffered from depression while 4 (12.9 %) developed grade II anemia.

Conclusion: In resource constraint population where newer DAAs are not available an combination of sofosbuvir and low-dose ribavirin in patients with renal impairment seems to be better tolerated and efficacious in terms of achieving the virological response.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0709 CHRONIC HEPATITIS C A MAJOR HEALTH – RELATED QUALITY OF LIFE BURDEN IN COMPROMISED CIRRHOTIC PATIENTS
T. Cucuoreanu1, A.M. Singe1, I. Girlea1, S. Chirica2, A. Trifan2
1 Institute Of Gastroenterology And Hepatology Iasi, UMF Gr T Popa Iasi, iasi/ Romania
2 Institute of Gastroenterology, "Grigore T. Popa" University of Medicine and Pharmacy, iasi/ Romania

Contact E-mail Address: drcucuieanatudor@gmail.com

Introduction: Chronic hepatitis C infection is a systemic disease, one of the leading causes towards cirrhosis and hepatocellular cancer and it is to be considered nowadays a major health-related quality of life (HRQoL) burden.

Aims & Methods: The aim of this study was to assess HRQoL impairment of hepatitis C virus (HCV) infection among a broad sample of compensated HCV cirrhotic patients. We conducted a prospective study between January 1st 2016 to January 31, 2017, in a tertiary center, in which we included 110 patients with compensated HCV cirrhosis, aged between 50 and 75, with no history of neuropsychiatric illness but associated comorbidities (diabetes type 2, hypertension, dyslipidemia). The patients were completely evaluated according to the national protocol. Health status and fatigue of our patients were evaluated using the FACIT- F (version 4) and SF-36 survey. Respondents with HCV compensated cirrhosis were compared with a control group matched according to sex and age with no prior history of HCV infection on the Mental (MCS) and Physical (PCS) Component Summary scores.

Results: Unadjusted comparisons between subjects infected with HCV (n = 110) and controls (n = 60) revealed that HCV patients had lower FACIT- F utility scores (43.2 ± 35. vs 49.5 ± 35.5, p < 0.05). Severe fatigue was present in 30% (33 patients) of the HCV group compared to 11.6% (7 patients) in controls. Subgroup analyses of respondents age 60 years and older revealed lower MCS score in HCV patients compared to controls (41.95 vs. 49.72, p < 0.05). Control group registered higher PCS score (53.30 vs 45.2; p < 0.05) compared to the study group.

Conclusion: Although the results were obtained on a small group we observed that in untreated patients with chronic HCV infection, HRQoL is significantly impaired due to fatigue severity and age. Our result underline the need for effective antiviral treatment to decrease the burden of fatigue in this segment of population.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0710 SOFOBUVIR IN COMBINATION WITH RIBAVIRIN IN GENOTYPE 3 HEPATITIS C PATIENTS WITH CIRRHOSIS. AN EXPERIENCE FROM TERTIARY CARE HOSPITAL
A. A. Langakah
Gastroenterology Section, Medical Unit Iv, Jinnah Postgraduate Medical Centre, Karachi Pakistan

Contact E-mail Address: dralaikbar12@gmail.com

Introduction: Hepatitis C virus (HCV) is the most common cause of cirrhosis in this part of the world. Advent of Directly acting antivirals (DAAs) like Sofosbuvir (SOF) has dramatized the treatment and is the cornerstone in treat-ment of HCV. Most trials have been conducted in HCV genotype 1 and data for Interferon free regimens in genotype 3 (GT-3) is limited especially in cirrhosis.

Aims & Methods: We aimed to evaluate the safety and efficacy of SOF plus Ribavirin (RIB) in patients with compensated and decompensated cirrhosis. This is a prospective real-world cohort study of HCV with compensated or decompensated cirrhosis. Efficacy was assessed by Sustained Viral Response after 6 months of completion of treatment. Adverse events were recorded on designed proforma on serial follow-up visits.

Results: The cohort consisted of 9 1consecutive patients out of which 41 were compensated cirrhotics and 50 had decompensated cirrhosis. The mean age was 53.4 ± 11years. Males were 47 (51.6%) and females were 44 (48.4%). Mean CTP and MELD score were 7.71 and 9.21 respectively. In compensated cirrhosis, SVR was achieved in 25 (84.4%) treatment naive patients compared to treatment experi-enced patients where 5 (80%) achieved SVR. In decompensated cirrhosis SVR was achieved in 22 (77.3%) treatment naïve patients, whereas 13 (76.9%) patients achieved SVR in treatment experienced group. In 72% patients with cirrhosis, there were no side effects whereas most common adverse event was fatigue and drop of Hemoglobin by 1.0 g/dl. Furthermore, CTP and MELD scores decreased to 6.9 and 8.7 respectively after treatment.

Conclusion: Sofosbuvir in combination with Ribavirin in GT-3 HCV patients achieved good SVR in compensated cirrhosis than decompensated cirrhosis whereas fatigue and drop of Hb were the most common adverse effects.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Yuri2, K. Hasegawa2, R. Takata2, K .Y o3, A. Ishii2, T. Takashima2,

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H. Iijima1, T. Nishimura1, C. Nakano1, T. Aoki1, Y. Miyamoto2, N. Ishii2, Y. Yuri1, K. Hasegawa1, R. Takata1, K. Yo1, A. Ishii1, T. Takashima1, Y. Sakai1, N. Aizawa1, N. Ieda1, H. Nishikawa1, Y. Iwata1, H. Enomoto1, S. Nishiyama1, S. Fujimoto1

1Ultrasound Imaging Center, Division Of Hepatobiliary And Pancreatic Diseases, Hyogo College of Medicine, Nishinomiya;Japan
2Division Of Hepatobiliary And Pancreatic Diseases, Hyogo College of Medicine, Nishinomiya;Japan
3Department Of Hepato-biliary-pancreatic Surgery, Hyogo College of Medicine, Nishinomiya;Japan

Contact Email Address: hiroko-i@hyo-med.ac.jp

Introduction: Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. A useful tool for screening and evaluation of hepatic steatosis.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

P0714 UTILITY OF A NEW FUNCTION IN 3D SIM-NAVIGATOR: ELECTRIC FIELD, WHICH INDICATES THE PREDICTED


Gastroenterology And Hepatology, Osaka Red Cross Hospital, Osaka;Japan
Introduction: The presence of fat droplets in the hepatocytes (micro- or macro-vesicular hepatic steatosis) under condition of chronic diffuse liver disease (CDLD) increases the attenuation of ultrasound (US). A group of Ukrainian scientists proposed an original algorithm for real-time US attenuation measurement (attenuation coefficient measurement – ACM) for the selective detection of liver. Hypothesis: The ACM as novel real-time ultrasound approach can be used for noninvasive hepatic steatosis diagnosis, allows clinicians to monitor disease progression and response to treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0714 ATTENUATION COEFFICIENT MEASUREMENT (ACM) AS NOVEL REAL TIME ULTRASOUND ALTERNATIVE TO CAP (FIBROSCAN)
O. Dynynk1, N. Marunchyn2, N. Kolyshliak2, O. Fedusenko3, V. Gurianov4
1Bogomolets Institute of physiology of the Ukrainian National Academy of Sciences, Kyiv/Ukraine
2Endocrinology, Bogomolets National Medical University, Kyiv/Ukraine
3Shupyk National Medical Academy of Postgraduate Education, Kyiv/Ukraine

Contact Email Address: nazarikobylia@gmail.com

Introduction: The presence of fat droplets in the hepatocytes (micro- or macro-vesicular hepatic steatosis) under condition of chronic diffuse liver disease (CDLD) increases the attenuation of ultrasound (US). A group of Ukrainian scientists proposed an original algorithm for real-time US attenuation measurement (attenuation coefficient measurement – ACM) for the selective detection of liver.

Aims & Methods: From total of 327 patients who underwent to comprehensive abdominal US scan and 90 of them were diagnosed with CDLD liver, according to Hamaguchi criteria. All these patient we provide ACM (dB/cm) measurement on SonoelP device (Ultrasin, Ukraine), with a 1–6 MHz convex transducer in the right and left lobes. For diagnostic accuracy assessment (used ACM standard), a correlation with CAP measured by Fibroscan (Echosens, France) we included 142 patients for subanalysis. Evaluation of diagnostic accuracy of ACM performed using ROC-analysis.

Results: On the stage of steatosis according to B-mode median, 25 and 75%, the ACM is as follows: control group 1.57 (1.32–1.85), B-mode 1.51 (1, 1.78–2, 11), S2–2, 26 (20, 00–2.49) and respectively for S2–2, 7 (2, 00–2, 82) dB/cm. ACM value increase parallel the hepatic steatosis progression (p < 0.001), which was also accompanied with presence of very strong correlation between these parameters (r = 0.814, p < 0.001). In patient with NAFLD the association between maximum value of ACM and duration of T2DM and triglycerides (model 1, multiple correlation coefficient = 0.55; R² = 0.26; p = 0.004) and ALT (model 2, multiple correlation coefficient = 0.55; R² = 0.25; p = 0.005) were observed. After adjustment by the duration of T2DM the level of triglycerides (r = 0.44, p = 0.012) and activity of ALT (r = 0.44, p = 0.012) significantly correlated with ACM. The AUROC of ACM for steatosis diagnosis was 0.925 (95% CI 0.877–0.973). The optimal cutoff point was >2.2725 dB/cm, with sensitivity, specificity, PPV and NPV respectively 91.5, 77.3, 84.6 and 83.8%. ACM value prove significantly correlated with CAP (r = 0.630, p < 0.001).

Conclusion: The ACM as novel real-time ultrasound approach can be used for noninvasive hepatic steatosis diagnosis, allows clinicians to monitor disease progression and response to treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0715 CUX1 IN LIVER CANCER: EXPERIMENTAL STUDY IN HYPOXIA MODEL
S. Blümel1, T. T. Wissniewski2, J. Häune2, T. M. Gress2, D. Bartels2, P. Di Fazio2
1Department Of Visceral Thoracic And Vascular Surgery, Philipps University Marburg, Marburg/Germany
2Klinik Für Gastroenterologie, Endokrinologie, Stoffwechel Und Infektiologie, Philipps Universität Marburg, Marburg/Germany
3Department Of Urology And Pediatric Urology, Philipps University Marburg, Marburg/Germany

Contact Email Address: sophiec.bluemel@gmx.de

Introduction: CUX1 (CUTL1) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of pro-apoptotic genes. Its aberrant expression in tumor turns its role as foe. It favors the tumor support and angiogenic factors. Its aberrant expression in tumor turns its role as foe. It favors the tumor formation and angiogenesis.

Aims & Methods: Here, we show CUX1 activity during hypoxia in liver cancer cells. CUX1was knocked down and its targets were analysed by RT-qPCR in Hep3B cells under hypoxic and/or normal culture condition. The hypoxia condition was established by 24h treatment with 150 μM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUX1 were analysed by RT-qPCR in Hep3B cells under hypoxic and/or normal culture condition.

Results: Hypoxia determined the up-regulation of HIF-1α (Hypoxia inducible factor-1-alpha) and a stable or up-regulated expression of its inhibitor FH1 (SLC2A1) up to 24 h prolonged hypoxia. VEGFA was significantly
overexpressed. Knock-down of CXU1 determined a significant down-regulation of HIF-1alpha, FHL-1 and VEGFA. Interestingly, the expression of CDKN1A was only attenuated after CXU1 knock down and hypoxic stress. HIF1alpha transcriptional activity is dependent by CXU1 expression.

Conclusion: CXU1 exerts an oncogenic role in liver cancer by sustaining the survival machinery of hypoxia. CXU1 silencing results in suppression of the hypoxia inducible factor and its target VEGFA causing a block of cell cycle in liver cancer cells modulated by the stable expression of CDKN1A.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0718 S-ADENOSYLMETHIONINE AFFECTS CELL CYCLE PATHWAYS AND SUPRESSES PROLIFERATION IN LIVER CELLS

L. Yan, G. Zhang, Y. Chen

Department Of Gastroenterology, Xiangya Hospital, Central South University, Changsha/China

Contact E-mail Address: yanlu_152@163.com

Introduction: S-Adenosylmethionine (SAMe) is a kind of common liver-protecting medicine. Recent studies have shown that SAMe has the inhibitory effects on human hepatocellular carcinoma (HCC). But the specific mechanism has not been elucidated.

Aims & Methods: Here, we examine the effects and relevant mechanism of SAMe on human hepatocellular carcinoma cell HepG2 and mouse hepatocyte AML12. SAMe was treated with HepG2 cells which were treated with SAMe or not. And we used Western blot and QRT-PCR to confirm some of these genes. MTS and flow cytometry-based assays were carried out in response to SAMe treatment.

Results: A total of 472 SAMe-related genes were identified by RNA-Seq. We found that differentially expressed genes were enriched in cell cycle related signaling pathway significantly by the KEGG and GO Pathway enrichment analysis. Through the construction of protein-protein interaction network, we observed the module associated with cell cycle is in the middle of the whole network. All these results implied that cell cycle pathway may play a very important role in the regulation of SAMe effect on HepG2 cells. Then the RNA-Seq-characterized genes involved in cell cycle (MCM3, MCM4, and E2F1) were confirmed by Western blot and QRT-PCR in HepG2 and AML12 cells. MTS analysis showed that SAMe could diminish cell proliferation. And flow cytometry-based assays indicated that treatment with SAMe altered cell cycle kinetics S phase cell cycle arrest.

Conclusion: Altogether, our data enforce the evidence of SAMe possessing of antiproliferative action in liver cells, capable of up-regulating MCM3, MCM4 and E2F1 and cell cycle inhibition, and provide an important theoretical basis for the clinical chemoprevention and treatment in HCC of SAMe.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
Conclusion: Our results support the hypothesis that overexpression of BRG1 increases cell growth and cell invasion in HCC. Furthermore, the data highlight genes promoting proliferation and invasion that are being regulated by BRG1 during hepatocarcinogenesis. In particular, CyclinB, D, E and MMP7 appear to play a major role in this context and might be an important link between BRG1 expression and HCC development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0720 PROGNOSTIC ROLE OF NEUTROPHIL-TO-LYMPHOCYTE RATIO IN HEPATOCELLULAR CARCINOMA (HCC)


Sahloul, Sousse/Tunisia

Contact E-mail Address: Elleeuchghorbel.nour@yahoo.fr

Introduction: Inflammation may play an important role in progression, and a high neutrophil-to-lymphocyte ratio (NLR) has been reported as a poor prognostic indicator in several malignancies.

Aims & Methods: This study was aimed to investigate the prognostic value of NLR in patients with HCC. We performed a retrospective study including patients with hepatocellular carcinoma admitted in the hepatogastroenterology department of Sousse between January 2010 and December 2015.

Results: A total of 76 patients were included in this study. Mean age was 59.8 (33–87 years). The sex ratio was 3.22 (M/F = 58/18). Hepatocellular carcinoma occurred on a liver of cirrhosis in the majority of cases (90.7%). The main causes of cirrhosis were hepatitis B virus infection (43 patients-62.3%), hepatitis C virus infection (11 patients-16%), non alcoholic steatohepatitis (6 patients-8.6%) and alcohol consumption (5 patients-7.2%). Our results showed that high NLR was associated with poor overall survival (OS) in HCC regardless of therapeutic choice (P < 0.05). Otherwise, high NLR was significantly correlated with the presence of vascular invasion (P = 0.002), lymph node metastasis (P = 0.04), tumor multifocality (P = 0.01) and higher incidence of AFP > 200 ng/ml (P = 0.04).

Conclusion: Elevated NLR indicates a poor prognosis for patients with HCC. The NLR is a readily available and inexpensive biomarker, and its addition to established prognostic scores for clinical decision making warrants further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0721 REIC/DKK-3 PROTEIN CONCENTRATION INDUCE THE POSITIVE EFFECT TO THE MORTALITY OF HEPATOCELLULAR CARCINOMA

A. Ohyama, D. Uchida, H. Shiraha, H. Sawahara, H. Kato, H. Okada

Gastroenterology And Hepatology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama City/Japan

Contact E-mail Address: at841205@gmail.com

Introduction: The Wnt/b-catenin plays essential roles in the growth of hepatocellular carcinoma (HCC). The Dickkopf (Dkk) protein family (Dkk1-4) is known to inhibit Wnt signaling. REIC/Dkk-3, one of the Dkk family members, is known to negatively regulate Wnt/b-catenin signaling in various tissues, and particularly in the liver. We have previously reported that REIC/Dkk-3 protein expression tended to be declining in liver cancer patients with poor prognosis.

Results: In the present study, we measured the concentration of REIC/Dkk-3 protein in peripheral blood by ELISA in a total of 80 HCC patients and 50 healthy controls. The serum level of REIC/Dkk-3 protein was significantly higher in the HCC group compared to the control group (P = 0.04).

Conclusion: Our results suggested that REIC/Dkk-3 protein may be a prognosis marker in HCC patients. Further study is necessary with more number of HCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0722 SURGICAL OUTCOME OF PATIENTS WITH FIBROLAMELLAR HEPATOCELLULAR CARCINOMA: DOES IT DIFFERS FROM COMMON HEPATOCELLULAR CARCINOMA?

E. El-Hanafy

Facultu Of Medicine, Mansoura University, Gastroenterology Surgical Center, Cairo/Egypt

Contact E-mail Address: dr_elah_elhanafy@yahoo.com

Introduction: Fibrolamellar hepatocellular carcinoma (FL-HCC) has conventionally been considered to be a histologic variant of hepatocellular carcinoma (HCC), with distinct clinicopathologic features. It is a rare primary hepatic malignancy that was first described as a pathological variant of HCC by Edmondson in 1956 [1]. The etiology of FL-HCC remains unclear. It typically occurs in normal livers without underlying liver fibrosis or cirrhosis [2]. In contrast to HCC which usually found in the presence of cirrhosis or chronic hepatitis [3], FL-HCC has been reported to occur in association with focal nodular hyperplasia (FHN) a type of benign liver lesion. Many series have mentioned that FL- HCC is less aggressive than conventional HCC [4]; however, other studies have failed to confirm the observation of a better outcome in FL-HCC [5]. Other studies reported that the survival was similar between common HCC and FL-HCC, and that may be related to the higher resectability rate which improve the survival of patients with FL-HCC [6].

Aims & Methods: The aim of this study was to evaluate the clinicopathological features and the surgical outcomes of patients with FL-HCC who were referred to our tertiary referral center over a 15-year period. This is a retrospective study including 22 patients with a pathologic diagnosis of FL-HCC who underwent hepatectomy over a 15-year period. Tumor characteristics, survival and recurrence were evaluated.

Results: There were 11 male and 11 female with a median age of 29 years (range from 21 to 58 years). Two (9%) patients had hepatitis C viral infection and only 2 (9%) patients had alpha-fetoprotein level > 200 ng/mL. The median size of the tumors was 12 cm (range from 5–20 cm). Vascular invasion was detected in 5 (23%) patients. Four (18%) patients had lymph node metastases. The median follow up period was 42 mo and the 5-year survival was 65%. Five (23%) patients had a recurrent disease, 4 of them had a second surgery with 36mo median time interval. Vascular invasion is the only significant negative prognostic factor.

<table>
<thead>
<tr>
<th>FL-HCC (n = 22)</th>
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<tbody>
<tr>
<td>Number</td>
</tr>
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<tr>
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<tr>
<td>Vascular invasion</td>
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<tr>
<td>Positive safety margin</td>
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<tr>
<td>Repeated hepatectomy</td>
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Factor No. (%) Overall survival (month) p. value

<table>
<thead>
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<th>Age (year)</th>
<th>Overall survival (month) p. value</th>
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<tbody>
<tr>
<td>&lt;40</td>
<td>16 (73%)</td>
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<tr>
<td>≥40</td>
<td>14 (64%)</td>
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</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Number</th>
<th>Tumor size (cm)</th>
<th>Number</th>
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<tbody>
<tr>
<td>Female</td>
<td>11 (50%)</td>
<td>79 (0.6)</td>
<td>&lt;10</td>
<td>4 (36%)</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11 (50%)</td>
<td>77 (0.2)</td>
<td>≥10</td>
<td>19 (86%)</td>
<td>89</td>
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Hepatic resection
Hepatectomy
16 (73%) 86

(continued)
P0724 MICROWAVE VERSUS RADIOFREQUENCY THERMAL ABLATION OF HEPATOCELLULAR ADENOMA: SAFETY AND EFFICACY


Introduction: Hepatocellular adenoma (HCA) is a rare benign tumor of the liver that typically presents in women within their reproductive years. The recent increase in the HCA prevalence is noticeably associated with the rising prevalence of obesity and the metabolic syndrome. Because of high risk of complications such as hemorrage, rupture and malignant transformation, appropriate treatment strategy should be considered. Given the success of image-guided ablation in treating malignant hepatic tumors, there is increased interest in treating benign masses with percutaneous ablation.

Aims & Methods: To investigate the efficacy and safety of Microwave versus Radiofrequency Ablation in management of HCA. Out of 320 Patients presented with hepatic focal lesions over 1 year, data of 15 patients diagnosed to have HCA were collected retrospectively. The diagnosis of HCA in those patients was based on radiological findings using triphasic pelvi-abdominal CT, dynamic MRI or cytopathological examination of FNAC for those whose radiological findings were not conclusive. The size of the all tumors was ranged between 2.5 to 3.4 cm. Tumors were selected for treatment by percutaneous ablation after review at a multidisciplinary that included radiologist, hepatologists, hepatobiary surgeons. Decisions to pursue percutaneous ablation therapy were based on a multidisciplinary discussion of multiple factors, including patient preference, number and location of tumors impacting the extent of a possible liver resection and hepatic reserve and the decreased morbidity compared with surgery. The number and location of tumors impacting the extent of possible liver resection.

Contact E-mail Address: el_naqeeb@yahoo.com

Conclusion: Percutaneous ablation of HCA using Microwave or Radiofrequency thermal Ablation is safe, feasible and able to eradicate the targeted hepatic focal lesion and prevent known complications of HCA. Of note Microwave ablation is much more efficient in treating larger lesions through single puncture in contrast to Radiofrequency which needs more than one puncture.

References


P0725 METABOLIC DISORDERS ACROSS HEPATOCELLULAR CARCINOMA IN ITALY


Introduction: Metabolic disorders, such as obesity and diabetes, are well known risk factors for hepatocellular carcinoma (HCC). Conversely, their impact on the natural history of HCC patients is not established.

Aims & Methods: This study aimed at evaluating the impact of metabolic disorders on clinical features, treatment and survival of HCC patients regardless of its etiology. We analyzed the Italian Liver Cancer (ITA.LI.CA) database regarding 839 HCC patients prospectively collected from 2009 to 2014. The following metabolic features were analyzed: BMI, diabetes, arterial hypertension, hypercholesterolemia and hypertriglyceridemia. According to these features, patients were divided into 3 groups: 0–1 metabolic features, 2 metabolic features, 3–5 metabolic features.

Results: As compared with patients with 0–1 metabolic features, patients with 3–5 features (p=0.012). Overall survival and survival according to BCLC stage and/or treatment did not significantly differ among the 3 groups. Diabetic patients showed a lower survival (p=0.046). MELD score, HCC

References


A416

United European Gastroenterology Journal 5 (5S) morpholgy, nodule size, BCLC stage, portal vein thrombosis and metastasis were included. The results of lead-time treated patients with HFS may have prolonged the administration period, improving the prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0726 LIVER VOLUME AS A PREDICTOR OF RISK FOR HEPATOCELLULAR CARCINOMA IN CHRONIC HEPATITIS C PATIENTS
N. Kang, J.W. Chung, J. Kim
Internal Medicine, Seoul National University Bundang hospital, Seong-Nam city/Korea, Republic of

Contact E-mail Address: namkyunym@gmail.com

Introduction: Chronic hepatitis C virus (HCV) infection pose risk for develop-
ment of hepatocellular carcinoma (HCC), even after viral eradication with effec-
tive antiviral therapy. Therefore, risk prediction is clinically important for effec-
tive surveillance of chronic hepatitis C (CHC) patients, but up to now, risk predic-
tion of HCC remains unsolved compared to chronic hepatitis B. The liver volume has been reported to correlate with the severity of liver cirrhosis, but it is not known whether decreased liver volume predicts the HCC risk in CHC.

Aims & Methods: The aim of this study was to assess the significance of liver volume in the prediction of HCC risk in CHC patients. A retrospective cohort of 101 CHC patients who received 4-phase dynamic CT imaging studies during surveillance for liver volume and outcome of surveillance. Liver volumes were measured on portal venous phase of CT image and corrected for body weight and height: liver volume index (LVI) = ratio of the expected stan-
dard volume to the measured liver volume. Kaplan–Meier analysis with the log-
rank test used to compare HCC. Cox proportional hazard analysis was used to identify the independent predictors of HCC risk.

Results: The cumulative incidence of HCC was 2.1%, 16.2% and 46.1% at 1, 4 and 8 years, respectively. The risk of HCC was significantly higher in patients with decreased liver volumes. Presence of liver cirrhosis was also associated with higher risk for HCC. (P < 0.001), whereas age, sex, alpha-fetoprotein and HCV RNA level were not significant predictors of HCC. Multivariate analysis show-
that LVI > 1 and presence of LC were independent predictors of HCC (HR: 63.53, CL: 12.44–244.28, P < 0.001; HR: 3.10, CL: 1.26–7.51, P = 0.012, respectively).

Conclusion: Decreased liver volume is an independent predictor of HCC in chronic hepatitis C. Liver volume index is useful in predicting risk of HCC in CHC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0727 HAND AND FOOT SYNDROME AS A PREDICTOR OF OUTCOME IN PATIENTS WITH HEPATOCELULAR CARCINOMA TREATED WITH SORAFENIB
M. Ochi, A. Okawara, N. Kakinoki, T. Kamoshida, S. Hirai
Department Of Gastroenterology, Hitachi General Hospital, Hitachi City/Japan

Contact E-mail Address: masaochiphi@hotmail.co.jp

Introduction: Sorafenib is a multi-thyrosine kinase inhibitor classified as a neo-
vascularization inhibitor. A previous study indicated that the administration of a thyrosine kinase inhibitor, cetuximab, significantly prolonged the patient survival, except for diabetes.

Skin toxicity of sorafenib was evaluated in patients with HFS. HFS grading was conducted according to the Common Terminology Criteria for Adverse Events (CTCAE) v4.0. Patients with grade 1 or higher dermal disorder were regarded as having HFS, and grade 0 patients as not having HFS. For HFS evaluation, a double-check system was adopted: primary evaluation based on a specific evaluation sheet at the Pharmacists’ Outpatient Clinic and final evaluation by physicians at the outpatient clinic. We examined the influence of HFS on the effects of treatment after the introduc-
tion of sorafenib in 42 patients with a history of multidisciplinary treatment, such as transcatheter arterial chemobloembolization (TACE), between May 2009 and March 2017.

Results: Grade 1 or higher HFS was observed in 22 patients (53%), and it was absent in 20 (47%). Overall, the median sorafenib administration period was 2.1 months. In the HFS-free and HFS groups, it was 0.9 and 2.7 months, respectively (P < 0.001). Survival analysis was performed using the Kaplan–Meier method. Overall, the median survival was 5.2 months. In the HFS-free and HFS groups, it was 3.0 and 7.8 months, respectively (P = 0.001). Multivariate analysis showed that liver volume index (LVI) of HFS was an independent factor (hazard ratio, 0.41; 95% CI, 0.19 to 0.88; p = 0.023) and administration period (hazard ratio, 0.45; 95% CI, 0.20 to 0.98; p = 0.045) were significant predictive factors. The following were not significant predictive fac-
tors: age, BCLC staging, dosage, and tumor markers.

Conclusion: The prognosis of hepatocellular carcinoma patients receiving sorafe-
nib treatment was closely related to the presence of HFS and administration period. HFS was a predictor of outcome in patients with hepatocellular carci-
noma treated with sorafenib. This study indicated that a multi-thyrosine kinase inhibitor, sorafenib, prolonged survival in patients with HFS, as demonstrated for cetuximab. HFS reduces the quality of life (QOL), and it is a sorafenib adminis-
trating-inhibiting factor. In our hospital, a system for patients to initially con-
sult the Pharmacists’ Outpatient Clinic, followed by the feedback of grade-based HFS control strategies to physicians at the outpatient clinic, was established.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
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P0729 UNUSUAL METASTASIS OF HEPATOCELLULAR CARCINOMA
I. Nakihcha1, I. Benelbarhdadi2, F.Z. Ajana3
1Service Medecine C Rabat Maroc, Hospital Ibn Sina Rabat, Rabat/Morocco
2Rabat, Ibn Sina Hospital, Rabat/Morocco

Contact E-mail Address: Ibtissamnakihcha@gmail.com

Introduction: Hepatocellular carcinoma is the most common primary tumor of the liver and is estimated to cause more than a quarter of a million deaths each year throughout the world. Extrahepatic metastasis of HCC occurs in about 30–50% of patients, and it depends on HCC stages.1 The most frequent site is lung, followed by lymph node, bone, and adrenal gland.2 Extrahepatic metastases to unusally sites from HCC have been reported in a few case reports. We report cases of patients with unusual extrahepatic metastatic sites from HCC.

Aims & Methods: We carried out a retrospective study of 16 patients with unus-
al metastasis of hepatocellular carcinoma out of 1047 cases of HCC treated at the hepatagastroenterology department "Medical C" of the IBN SINA University Hospital during the past 22 years. The diagnosis was suspected based on clinical signs and imaging data, and confirmed by histology when the biopsy of the metastasis was possible, were excluded from this study, patients with lung metastasis, lymph node and portal thrombosis.

Results: Our study included 16 patients, 10 men and 6 women with a mean age of 58.5 years ranging from 37 to 75 years. 13 patients had cirrhosis due to hepatitis C virus, 1 patient had a cirrhosis due to viral B infection and 2 patients had HCC with annciorrhic liver. All patients had one or more HCC, ranging in size from 2 to 10 cm. The AFP was normal in 11 cases and elevated in 4 cases (>200 ng/mL). We collected 4 cases of adrenal metastases, 3 costovertebral metastases, 2 gastric metastases, 2 brain metastases, 1 cranial metastasis, 1 cla-
vicular metastasis, 1 ovarian metastasis, 1 nasopharyngeal metastasis, and a case of metastasis in the path of percutaneous biopsy of HCC. In 4 cases the diagnosis of HCC and metastasis was synchronous while in 12 cases median time from diagnosis of hepatocelel carcinoma to extrahepatic HCC was 15.5 months.

Conclusion: The incidence of unusual and extrahepatic metastasis of HCC diag-
nosed during clinical course was not frequent. The diagnostic procedures for extrahepatic metastasis were standardized, however considering the substantial advances in treatment of HCC, the detection of extrahepatic HCC is crucial for patients to receive appropriate therapy, which ultimately determines patient survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0730 EPIDEMIOLOGICAL STUDY OF HISTOLOGICALLY PROVEN ADVANCED HEPATOCHOLANGIOCARCINOMA: AN AGED MULTICENTER RETROSPECTIVE STUDY IN FRANCE
1EMAD, Department of Gastroenterology, University Hospital, Nantes/France
2Department of Gastroenterology, Cochin University Hospital, Paris/France
3Gastroenterology, Poitiers university hospital, Poitiers/France
4Department of Gastroenterology, Tours University Hospital, Tours/France
5Department of Gastroenterology, Amiens University Hospital, Amiens/France
6Department of Gastroenterology, Hopital Europen Georges Pompidou, Paris/France

Contact E-mail Address: maeva.salimou@chu-nantes.fr

Introduction: Hepatocholangiocarcinoma is a rare primary hepatic tumor com-
bining features of both, cholangiocarcinoma and hepatocellular carcinoma (CHC-ICC). Few data concerning the epidemiology of hCHC-ICC have been reported, mainly from surgical series in Asian and American populations.

Aims & Methods: The main objective of this retrospective multicenter study was to evaluate epidemiological features and overall survival of historically proven advanced CHC patients in a French population. Data from patients treated for historically proven CHC-ICC in six French university hospitals between 2008 and February 2017, were retrospectively collected. The main clinical, biological, therapeutic features and OS were reported. Statistical analysis was performed using Graph Pad Prism 6.

Results: Thirty patients were included (76.6% of men, median age 64 years [extreme 37–88]. Cirrhosis was associated in 33.3% of cases (Child-Pugh score A: 70%). Positive serology for hepatitis B virus and C was found in respectively,
P0731 A PROPOSAL FOR MODIFICATION OF BARCELONA CLINIC LIVER CANCER SYSTEM FOR HEPATOCELLULAR CARCINOMA STAGING BASED ON KOREAN MULTICENTER REGISTRY DATABASE

J. Cheong, H. Cho
Gastroenterology, Ajou University Hospital, Suwon/Korea, Republic of Korea

Contact E-mail Address: jaeyoun620@gmail.com

Introduction: Barcelona Clinic Liver Cancer (BCLC) C stage is defined as patients with preserved hepatic function and one of those adverse predictors including performance status (PS) 1–2, vascular invasion (VI), or extrahepatic spread (EHS). Therefore, BCLC C demonstrates extreme heterogeneity because patients with PS 1–2 are categorized to BCLC C regardless of tumor burden, VI or EHS. This study aimed to modify BCLC system based on PS to derive more relevant staging system.

Aims & Methods: A total of 7501 subjects, who were registered in Korean Liver Cancer Study Group during the period 2008–2013, were analyzed. Kaplan-Meier analysis was used to compare overall survival (OS). The relative goodness-of-fit between staging system was compared by Akaike information criterion (AIC) and integrated area under the curve (iAUC).

Results: Two modified BCLC (mBCLC) systems (#1 and #2) were derived by reducing role of PS in BCLC system. The patients with PS 1 or 2 without VI or EHS were reassigned to stage 0, A, or B according to their tumor burden. Prognostic accuracy was compared between mBCLC systems and original BCLC by AIC and iAUC. As a result, mBCLC#2 system identified as most explanatory and desirable model for HCC staging by showing smallest AIC value (AIC = 70888.01) and largest iAUC (iAUC = 0.722), while original BCLC showed the biggest AIC value (AIC = 70897.17) and smallest iAUC (iAUC = 0.705). The mBCLC#2 stage C was further sub-classified into C1, C2, C3 and C4 according to the variables which selected by statistical and clinical importance. The C1-C4 sub-groups showed significant different OS distribution between groups (P = 0.001). The mBCLC#2 stage C was further sub-classified into C1, C2, C3 and C4 according to the variables which selected by statistical and clinical importance. The C1-C4 sub-groups showed significant different OS distribution between groups (P = 0.001).

Conclusion: Modification of BCLC system based on PS derived accurate and relevant modified BCLC system for HCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0733 USE OF BILE ACIDS AS A REGULATOR OF GUT MICROBIOTA

K. Ryu1, Y. Choi2, H. Koo1, K. Song1, S. Kim1, T. Lee1, K. Huh1, Y. Kang1, M. Kang1, S. Han2, J. Jeong2
1Gastroenterology, Konyang University College of Medicine, Daejeon/Korea
2Gastroenterology, Konyang University College of Medicine, Daejeon/Korea

Contact E-mail Address: medidrug@hotmail.com

Introduction: Microbiotas, as part of our bodies, actually affect the body's metabolism, defense and digestion. Gut microbiotas are the typical examples and they are mainly regulated by bile acids. Each bile acid has different properties, and the inhibition or promotion effects of microbiotas are very diverse. Each individual has a characteristic microbial distribution and composition within the intestinal tract, presumably related to the composition of their respective characteristic bile acids. The bile acids released into the intestinal tract, are mostly reabsorbed (about 95%) through the enterohepatic circulation and recycled. If a certain bile acid is continuously orally-supplied, the ratio of supplied bile acid to the total bile acid is gradually increased due to the continuous enterohepatic circulation. It has been reported that changes in the composition of intestinal bile acids cause dysbiosis, and it is presumed that an artificial change in the composition of bile acid can be an effective method of controlling the proliferation of target microbiotas.

Aims & Methods: First, we wanted to identify the effects of certain bile acids on each microbiota. We observed the effect of bile acids in human body (cholic acid, chenodeoxycholic acid, deoxycholic acid). We used disk diffusion method, used for antibiotic susceptibility test. Second, we intended to observe actual intestinal microbial changes through the supply of specific bile acids in animal models. Specific bile acid (UDCA), which is available as probiotics, was mainly inhibited by hydrophilic bile acids. Inversus fecalis and Klebsiella pneumoniae, which are frequently observed in bile during biliary infections, did not form a large inhibitory zone of bile acids. Escherichia coli, which is occasionally found in the lower intestinal tract, proliferated more around bile acid. Other microorganisms, which caused biliary infections in various organs in the body, showed various patterns. As a result of relative quantitative analysis (RT-PCR) based on the control group, the ratio of Fermentes to Bacteroides was decreased in the group treated with UDCA for 3 weeks. Next, to minimize the role of endogenous bile acid, we used bile duct ligation rat model. Next generation sequencing (NGS) method was used to analyze the changes of microorganisms according to the supplied amount of UDCA. Examinations were divided into three groups for 3weeks, considering the capability of commercial UDCA product: control group; 10mg/kg/day group; and 15mg/kg/day group. Fecal contents were collected from cecum of sacrificed rats.

Results: Each bile acid formed various inhibitory or promoting regions in target strains. Saccharomyces bouardi and Lactobacillus casei, which are commercially available as probiotics, were mainly inhibited by hydrophilic bile acids. Entrocococcus fecalis and Klebsiella pneumoniae, which are frequently observed in bile during biliary infections, did not form a large inhibitory zone of bile acids. Escherichia coli, which is occasionally found in the lower intestinal tract, proliferated more around bile acid. Other microorganisms, which caused biliary infections in various organs in the body, showed various patterns. As a result of relative quantitative analysis (RT-PCR) based on the control group, the ratio of Fermentes to Bacteroides was decreased in the group treated with UDCA for 3 weeks. In the cholestatic model, NGS showed changes in the proportion of intestinal microbiota and an increase in diversity after 3 weeks of UDCA supply.

Conclusion: The effects of various kinds of bile acids on microbiotas are very diverse, and the oral administration of certain bile acids may cause changes in microbial environment in the intestinal tract. Finally, oral feeding of hydrophilic bile acids can be used as a therapeutic treatment for dysbiosis by controlling the microbial environment in the intestinal tract.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0734 MI-RNA-21 IS OVEREXPRESSED IN PRIMARY BILIARY CHOLANGITIS AND MEDIATES LIVER INJURY AND NECROPTOSIS IN EXPERIMENTAL CHOLESTASIS

M.B. Afonso1, P. M. Rodrigues2, A. L. Sinha3, M. M. Gaspar1, T. Carvalho4, P. Borralho3, J.M. Banales4, R. E. Castro1, C.M.P. Rodrigues1

1Research Institute for Medicines (Med.U.Lisboa), Faculty of Pharmacy, Universidade de Lisboa, Lisbon/Portugal
2Histology and Comparative Pathology Laboratory, Instituto de Medicina Molecular, Lisbon/Portugal
3Escola Superior de Tecnologia da Saúde de Lisboa (ESTEAL), Instituto de Anatomia Patológica, Universidade de Lisboa; Hospital Cuf Descobertas, Lisbon/Portugal
4Department Of Liver And Gastrointestinal Diseases, Biodonostia Research Institute – Donostia University Hospital – University of the Basque Country (UPV/EHU), CIBERehd, Barakaldo, San Sebastian/Spain

Contact E-mail Address: adislimao@ulisboa.pt

Introduction: Inhibition of microRNA-21 (miR-21) prevents necroptosis in the mouse pancreas. In turn, we recently showed that necroptosis contribute to hepatic necro-inflammation in the common bile duct ligation (BDL) murine model.

Aims & Methods: We aimed to evaluate the role of miR-21 in mediating deleter-
ious processes associated with cholestasis. The functional crosstalk between miR-
21 and necroptosis was investigated in vitro. miR-21 expression was evaluated in the liver of primary biliary cholangitis (PBC) patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Results: Studies in miR-21−/− primary mouse hepatocytes established a func-
tional link between miR-21 and necroptosis through cyclin dependent kinase 2 associated protein 1 (CDK2AP1). miR-21 expression increased in the liver of PBC patients compared to healthy. miR-21−/− mice displayed decreased serum levels of liver injury markers compared with WT mice, accompanied by reduced hepatocellular degeneration, oxi-
dative stress and pro-fibrogenic gene expression. Hallmarks of necroptosis were decreased in the livers of BDL miR-21−/− mice, via relieved repression of CDK2AP1. Further, miR-21−/− mice displayed improved adaptive response in the expression of bile acid homeostasis-associated genes.

Conclusion: miR-21 ablation ameliorates liver damage and necroptosis in BDL mice; miR-21 should be considered as a promising therapeutic target in cholestatic liver diseases. Supported by FCT, Portugal through grants PTDC/ IHM-MEC/0895/2014 and UID/DTP/04138/2013, and fellowships SFRH/BD/91199/2012 (MBA), SFRH/BD/88212/2012 (PMR), and SFRH/BD/104160/2013 (CMPR). BIM-MEC/0895/2014 and UID/DTP/04138/2013, and fellowships SFRH/BD/

Disclosure of Interest: All authors have declared no conflicts of interest.

P0735 THE EVALUATION OF TRANSPAPILLARY ENDOSCOPIC GALLBLADDER DRAINAGE WITH THE USE OF INTRADUCTAL ULTRASONOGRAPHY


Gastroenterology, New Tokyo Hospital, Chiba/Japan

Contact E-mail Address: dr2007t@g2.so-net.ne.jp

Introduction: The number of indications for endoscopic transpapillary gallblad-
der drainage (ETGBD) to treat cholecystitis patients has increased, and we aim to clarify the aging of the population and prescribing antithrombotic agents. ETGBD is one of the challenging procedure because it is difficult to identify the cystic duct (CD) orifice. From November 2015, we performed with ETGBD using intraduc-
tural ultrasonography (IDUS) complementarily. The CD orifice can be identified using IDUS, resulting in cannulation in to the CD. We investigated the success rate and clinical outcomes of ETGBD in combination with using IDUS.

Aims & Methods: ERCP was performed in 1000 patients (1400 times) at New Tokyo Hospital, from January 2013 to December 2015. A total of 97 patients underwent ETGBD, 58 patients with IDUS and 39 without IDUS. In this study, we investigated the success rate of ETGBD retrospectively. The suc-
cess of ETGBD was defined as cannulation into the gallbladder within two trials. Results: The mean age and male proportion of patients in the group with IDUS was similar to that in the group without IDUS (74.5±11.4 vs 73.3±11.3; P=0.600 and 18/40 and 13/26; P=0.828). The procedure success rate was 78.4% (76/97) in total; 86.2% (50/58) in the group with IDUS and 66.7% (26/39) in the group without IDUS. Using IDUS under fluoroscopic image allowed all patients in the group with IDUS to identify the CD orifice. ETGBD procedures in eight patients were unsuccessful because of a highly flex-
ion of the CD in seven patients and an obstruction of the CD orifice caused by tumor invasion in one patient. Although both groups developed mild pancreatitis (one patient in the group with IDUS, and two patients in the group without IDUS), no significant difference was observed in the two groups (P=0.563). All patients were successfully managed with conservative treatment. There were no any other complications in the two groups.

Conclusion: The success rate of ETGBD in the group with IDUS was significantly higher than that in the group without IDUS. IDUS is may be useful as a com-
plementary option of endoscopic gallbladder drainage.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0736 THE RENDEZVOUS PROCEDURE FOR THE MANAGEMENT OF BILIARY TRACT STONES AFTER CHOLECYSTECTOMY: SHORT AND LONG-TERM OUTCOMES AND PREDICTORS FOR SUCCESS

A.M. Schreuder1, K. A. Booji2, P.R. De Reuver3, O. M. Van Delden4, K. P. Van Lienden5, M.G.H. Besselink6, O.R.C. Busch7, D.J. Gouma8, E. A.J. Rauwels9, T. M. Van Gulik1

1Department Of Surgery, Academic Medical Center, Amsterdam/Netherlands
2Interventional Radiology, Academic Medical Center, Amsterdam/Netherlands
3Gastroenterology, Academic Medical Center, Amsterdam/Netherlands

Contact E-mail Address: a.m.schreuder@amc.uva.nl

Introduction: Bile Duct Injury (BDI) following laparoscopic cholecystectomy is a persisting problem. The rendezvous procedure (RV) provides a combined endo-
sopic and percutaneous approach in order to re-establish bile duct continuity in complex BDI.

Aims & Methods: The aim of this study is to assess short-term and long-term outcomes of the RV. All consecutive patients with BDI referred to our tertiary center were analyzed retrospectively. RV procedure was performed when endoscopic stenting or PTC failed and when deemed feasible by a dedicated multidisciplinary team including a hepatopancreato-bili-
ary surgeon, gastroenterologist and interventional radiologist. Classification of BDI, technical success of RV, procedure-related complications and outcomes were assessed.

Results: Among a total of 812 patients, RV was performed in 47 (5.8%) patients, of which 31 (66%) were diagnosed with complete transaction of the bile duct (type D/Nstrasser type E injury). Primary success rate of RV was 94% (44/47 patients). Reasons for failure (N = 3) were inability to pass a stricture and inability to make contact between the two wires. In 26/47 patients (55%) RV was the final successful treatment. In 17/47 patients (36%) RV acted as a bridge to

during the endoscopic procedure, and total number of endoscopic procedures differed significantly between the two groups. The median number of stones was one (range 0-5) and two (range 1-5) (P=0.013), while the median diameter of the largest stones was 9 mm (range 0.27) and 14 mm (range 3-23) (P=0.001) in the complete and incomplete stone removal groups, respectively. During the referral period, OS was 33.9% and 41.9% and DDS was 5.56% and 3.23% in the complete and incomplete stone removal groups, respectively. Kaplan-Meier analysis found no significant difference in OS and DDS between the two groups (P=0.187 and P=0.581, respectively).

Complete stone removal might not be always necessary in extremely elderly patients aged 90 years and older.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0737 THE RENDEZVOUS PROCEDURE FOR THE MANAGEMENT OF BILIARY TRACT STONES AFTER CHOLECYSTECTOMY: SHORT AND LONG-TERM OUTCOMES AND PREDICTORS FOR SUCCESS

A.M. Schreuder1, K. A. Booji2, P.R. De Reuver3, O. M. Van Delden4, K. P. Van Lienden5, M.G.H. Besselink6, O.R.C. Busch7, D.J. Gouma8, E. A.J. Rauwels9, T. M. Van Gulik1

1Department Of Surgery, Academic Medical Center, Amsterdam/Netherlands
2Interventional Radiology, Academic Medical Center, Amsterdam/Netherlands
3Gastroenterology, Academic Medical Center, Amsterdam/Netherlands

Contact E-mail Address: a.m.schreuder@amc.uva.nl

Introduction: Bile Duct Injury (BDI) following laparoscopic cholecystectomy is a persisting problem. The rendezvous procedure (RV) provides a combined endo-
sopic and percutaneous approach in order to re-establish bile duct continuity in complex BDI.

Aims & Methods: The aim of this study is to assess short-term and long-term outcomes of the RV. All consecutive patients with BDI referred to our tertiary center were analyzed retrospec
surgery; although the RV was initially successful, late complications (stenosis, stent dysfunction) required elective hepaticojejunostomy (HJ). Procedure-related adverse events occurred in 10 patients (18%) with cholangitis being the most frequent complication (N = 4.7%). No life-threatening adverse events and no 30-day mortality occurred.

Conclusion: In experienced hands, RV is safe with a final non-surgical success rate of 55%. When endoscopic stenting fails in patients with complex BDI, RV can be considered as a viable treatment option before surgical repair.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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61.5 years old. There were 17 patients (38.6%) with intrahepatic cholangiocarcinoma, 9 patients (20.5%) with perihilar cholangiocarcinoma, 7 patients (15.9%) with extrahepatic cholangiocarcinoma and 11 patients (25.0%) with gallbladder cancer. All patients had stage IV disease and median number of prior anticancer treatments of patients was 2 (range 1–5). After an average of 1.5 months of treatment (range 0.5–10.0 months), three patients (6.8%) presented with disease as best overall response, 23 patients (52.3%) presented progression and 18 patients (40.9%) could not survive until response evaluation. Median progression free survival was 1.7 months (interquartile range (IQR) 0.8–2.3 months) and median overall survival from study enrollment was 2.5 months (IQR 1.4–4.9 months). During treatment, 25 patients (55.6%) could maintain tolerable general condition without increasing ECOG PS, and 35 patients (79.6%) could maintain or decrease the requirement for morphine as pain killer. During treatment, there were 12 cases (12/44, 27.3%) of seventh grade 3 adverse events (AE) and no cases of grade 4 AE. Most common AE was ALT/AST elevation (11/44, 25%) followed by anemia (10/44, 22.7%). The major causes of the drop outs from study were due to disease progression or patient’s death (30 cases, 66.7%), and there were only 5 cases (11.5%) who dropped out due to adverse drug reactions or severe AE.

### Table 1: Treatment outcomes

<table>
<thead>
<tr>
<th>Study period, mean, mo (range)</th>
<th>1.5 (0.5–10.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression free survival, mo (IQR)</td>
<td>1.7 (0.8–2.3)</td>
</tr>
<tr>
<td>Survival from study-enroll, mo (IQR)</td>
<td>2.5 (1.4–4.9)</td>
</tr>
<tr>
<td>Best response, n (%)</td>
<td>SD 3 (6.5%), PD 23 (52.3%), Not evaluated 18 (40.9%)</td>
</tr>
<tr>
<td>ECOG, n (%)</td>
<td>Increased 19 (43.2%), Maintain 22 (50.0%), Decreased 4 (9.1%)</td>
</tr>
<tr>
<td>Morphin requirement, n (%)</td>
<td>Increased 8 (18.6%), Maintain 31 (72.1%), Decreased 4 (9.3%)</td>
</tr>
<tr>
<td>Adverse event, n (%)</td>
<td>Grade 1 16 (36.4%), Grade 2 29 (65.9%), Grade 3 12 (27.3%), Grade 4 0 (0%)</td>
</tr>
<tr>
<td>Drop out cause, n (%)</td>
<td>- drug reaction 1 (2.3%), Patient’s death 7 (15.9%), Disease progression 22 (50.0%), Withdrawal consent 5 (11.4%), Loss of follow-up 2 (4.5%), Poor general condition 3 (6.8%)</td>
</tr>
</tbody>
</table>

Conclusion: KML001 was safe and well tolerated in respects of adverse events. KML001 was also shown promising result in disease control and pain control. KML001 can be another palliative treatment option for patients with advanced biliary tract cancers who non-respons to gemcitabine based chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

## P0741 Endoscopic Drainage of Malignant Stenosis of the Biliary Confluence: How Many Segments Should Be Drained to Improve the Patient Survival?

F. Caillol1, E. Borie2, C. Zemmour3, C. Pesenti1, J.P. Ratone1, M. Giovannini1

1Endoscopy, Pauli Calmettes Institute, Marseille/France
2Pauli Calmettes Institute, marseille/France
3Statistics, Pauli Calmettes Institute, Marseille/France

Contact E-mail Address: ficaillo@free.fr

Introduction: ESGE stated in 2012 that more than 50% of the liver had to be drained in case of unresectable hilar liver stenosis, however it remains unclear if unilateral or bilateral palliative drainage has to be performed for this kind of stenosis. Our policy is to try to drain the most possible segments of the liver in case of hilar stenosis. The aim of our study was to evaluate the efficiency of hilar drainage in function of the number of segments drained.

Aims & Methods: The study is a retrospective analysis of a prospective registry of drainage of malignant stenosis of the hilum. Drainage were performed by 5 operators performing ERCP, EUS-drainage, and per-cutanous drainage. The choice of the technique was left to the appreciation of the operators. All techniques could be associated. A Ct-scan or MRI was performed before and after drainage to decide the plan of the drainage and to evaluate efficiency and quality of the drainage. All drainages were performed under general anesthesia in an intubated patient. The quality of the drainage was evaluated by calculation of the percentage of drained segments. This percentage was calculated by dividing the number of liver segment drained with the number of liver segment. The stricture was managed by removal or dilatation of the stricture in the cases of segments with the segments resected in case of surgery, and/or the segments with invasion of more than 50% by tumor. The aim of the study was to evaluate the effect of the quality of the drainage on the patients survival. Quality of the drainage was defined by the percentage of liver segments drained.

Results: 60 (38 men) patients were included from from 01/2015 to 07/2016. Mean age = 69.84 years old. The classification of the stenosis was type II for 17 (29%) patients, type III for 20 patients (34%), type IV for 22 (37%). Histology corresponded to CCK < 43%, metastatic from colorectal cancer for 15 patients (25%) and others cancers for 19 (32%). Median follow-up was 8.5 months (5.5–16.5). The median of survival was 5 months (2.3–12.3). In unvaried and multi varied analysis there was a significant correlation between the percentage of segments drained > 80% (p < 0.05) and the survival. The other factor with impact on the survival was an invasion of the liver > 50% by tumor. There was no impact on the survival according to the different techniques used to drain the bile ducts. To confirm the efficiency of the quality of the drainage, a ROC curve was performed establishing a correlation between patients receiving chemotherapy and percentage of liver drained (area curve = 0.77 (0.65–0.88).

Conclusion: The survival of patient with a malignant stenosis of the biliary confluence is highly correlate with the rate of the liver segment drained.

Disclosure of Interest: All authors have declared no conflicts of interest.
differentiating between (pre)malignant and benign polyps (p = 0.174 and p = 0.589 respectively).

Conclusion: Diagnostic accuracy of TAUS for diagnosis gallbladder polyps is moderate and decreases further when differentiating between polyp types. TAUS would regularly provide false positive results, leading to unnecessary surgery. There was no evidence that diagnostic test accuracy of EUS was better than TAUS. Further studies of high methodological quality are needed to determine diagnostic accuracy of EUS and TAUS for differentiating between polyp types.

This abstract is based on a pre-peer review draft of a Cochrane Review.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0743

**DIAGNOSTIC VALUE OF CONTRAST-ENHANCED ULTRASONOGRAPHY IN HIGH MECHANICAL INDEX CONTRAST MODE FOR POLYPLOID LESIONS OF THE GALLBLADDER**

H. Miwa1, K. Numata1, A. Hirota1, K. Sanga1, Y. Gouda1, K. Irie2, T. Ishii2, T. Kaneko1, K. Sugimoto1, S. Maeda3

1Gastroenterological Center, Yokohama City University Medical Center, Yokohama/Japan
2Gastroenterology, Yokohama City University Graduate School of Medicine, Yokohama/Japan

Contact E-mail Address: miwa@yokohama-cu.ac.jp

**Introduction:** In its early stages, gallbladder cancer is an asymptomatic disease, and is associated with a poor prognosis if found in an inoperable condition. Several investigators have reported the utility of contrast-enhanced ultrasonography (CEUS) in low mechanical index (MI) contrast mode using a microbubble contrast agent for gallbladder lesions. However, CEUS images with low MI setting are influenced by the echogenicity of background B-mode and cannot depict precise vessel images, in contrast with high MI contrast mode.

**Aims & Methods:** The aim of this study was to assess the diagnostic value of CEUS in high MI contrast mode for characterizing polypoid lesions of the gallbladder (PLG). Thirty-six patients with PLG, including 17 with gallbladder cancer and 19 with benign polyps, who underwent CEUS were enrolled. The institutional review board approved this study and informed consent was obtained. Perfluorobutane-based contrast agent and high MI contrast mode was used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement. Subsequently, patients were stratified according to lesion size at the largest diameter, and the diagnostic accuracy for gallbladder cancer in B-mode and CEUS were assessed.

**Results:** Two patients with malignant PLG could not be evaluated in B-mode due to sludge. Kappa values for CEUS were graded as good or excellent, and were better than B-mode. Age and size of malignant PLGs were significantly larger than benign lesions. In B-mode, 80% (12/15) of malignant PLGs exhibited heterogeneity (p < 0.01). On CEUS, malignant PLGs exhibited sessile-shape (76% [13/17]), dilated vessels (71% [12/17]), irregular vessels (82% [14/17]), and heterogeneous enhancement (59% [10/17]) (p < 0.01). Except for heterogeneous enhancement, all features remained significantly different after stratification according to size of PLG between 11 mm and 20 mm on CEUS. The sensitivity, specificity, and accuracy for diagnosis of gallbladder cancer was 80% (12/15), 79% (13/19), and 73% (25/34) in B-mode, 94% (16/17), 89% (17/19), and 92% (33/36) on CEUS, and 88% (7/8), 91% (10/11), and 89% (17/19) on CEUS after stratification according to size, respectively.

P0742

**Table 1: Results of meta-analysis and post-test probabilities**

<table>
<thead>
<tr>
<th>Index Test</th>
<th>Target condition</th>
<th>Number of studies (patients)</th>
<th>Summary sensitivity (95% CI)</th>
<th>Summary specificity (95% CI)</th>
<th>Minimum, median and maximum prevalence of target condition = pre-test probability</th>
<th>Positive post-test probability (95% CI)</th>
<th>Negative post-test probability (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAUS</td>
<td>Gallbladder polyp</td>
<td>6 studies (16260 patients)</td>
<td>0.80 (0.55–0.98)</td>
<td>0.97 (0.95–0.98)</td>
<td>Minimum: 0.4% (0.07–0.71), Median: 0.65 (0.55–0.69), Maximum: 0.97 (0.95–0.97)</td>
<td>0.00 (0.00–0.00)</td>
<td>0.01 (0.01–0.04)</td>
</tr>
<tr>
<td>TAUS</td>
<td>True gallbladder polyp</td>
<td>7 studies (1272 patients)</td>
<td>0.77 (0.48–0.92)</td>
<td>0.78 (0.59–0.90)</td>
<td>Minimum: 9.1% (0.16–0.39), Median: 0.47 (0.32–0.62), Maximum: 0.84 (0.74–0.91)</td>
<td>0.03 (0.01–0.07)</td>
<td>0.07 (0.03–0.16)</td>
</tr>
<tr>
<td>EUS</td>
<td>True gallbladder polyp</td>
<td>4 studies (267 patients)</td>
<td>0.84 (0.54–0.96)</td>
<td>0.84 (0.70–0.92)</td>
<td>Minimum: 9.1% (0.20–0.53), Median: 0.57 (0.39–0.74), Maximum: 0.88 (0.79–0.95)</td>
<td>0.02 (0.01–0.07)</td>
<td>0.05 (0.01–0.15)</td>
</tr>
<tr>
<td>TAUS</td>
<td>Dysplastic polyp/carcinoma</td>
<td>4 studies (1637 patients)</td>
<td>0.60 (0.22–0.89)</td>
<td>0.89 (0.76–0.96)</td>
<td>Minimum: 4.1% (0.07–0.46), Median: 0.59 (0.30–0.83), Maximum: 0.99 (0.97–1.00)</td>
<td>0.02 (0.01–0.05)</td>
<td>0.10 (0.04–0.24)</td>
</tr>
<tr>
<td>EUS</td>
<td>Dysplastic polyp/carcinoma</td>
<td>3 studies (350 patients)</td>
<td>0.85 (0.56–0.96)</td>
<td>0.91 (0.75–0.97)</td>
<td>Minimum: 4.1% (0.12–0.54), Median: 0.70 (0.44–0.87), Maximum: 0.95 (0.99–1.00)</td>
<td>0.01 (0.00–0.02)</td>
<td>0.04 (0.01–0.13)</td>
</tr>
</tbody>
</table>

**Conclusion:** CEUS in high mechanical index contrast mode was a useful modality for differentiating gallbladder cancer and benign PLGs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0744

**ASSOCIATION OF CIRCULATING ADIPONECTIN LEVELS AND TUMOR STAGE IN BILIARY TRACT CANCER**

A. Saray, B. Gogov, N. Zubcevic, D. Prohic, A. Mehmedovic’, A. Pahalovic’

Department Of Gastroenterology And Hepatology, Clinical Center University of Sarajevo, Sarajevo/Bosnia And Herzegovina

Contact E-mail Address: sarayaida19@gmail.com

**Introduction:** Multiple recent studies have indicated that some of adipose tissue-derived hormones may significantly influence the growth and proliferation of GI tumors including liver cancer (1, 2). However, the role of adipokines such as adiponectin and leptin in biliary tract cancer have not been well studied before. The aim of the study was to analyze plasma concentrations of adiponectin and leptin in cholangiocarcinoma (CC) patients and to compare these concentrations to clinicopathological parameters.

**Aims & Methods:** Baseline levels of adiponectin and leptin were determined in 38 consecutive patients with newly diagnosed cholangiocarcinoma and 38 healthy control subjects. The association between adiponectin and leptin and tumor stage was evaluated using nonparametric Spearman’s correlation test. Control subjects were matched to case patients by age, sex and BMI. Survival analysis used the Kaplan-Meier curve and the Cox proportional hazards model.

**Results:** Overall median adiponectin concentrations were lower in CC patients versus control subjects (5.1 vs 9.3 mg/mL, P = 0.001). In CC patients with T stage 2-4 (n = 22) median adiponectin concentrations were significantly lower than in CC patients with T stage 1 (n = 16) (3.8 vs 6.6 mg/mL, P = 0.001). The mean leptin levels were not significantly decreased in CC patients (P = 0.45). Adiponectin concentrations were inversely correlated with tumor T stage (r = −0.811, P = 0.01) of CC patients. Higher adiponectin levels at baseline were associated with increased overall survival in T stage 2-4 patients (Cox F test = 2.139, P < 0.05).

**Conclusion:** This study identified an association between adiponectin levels and tumor stage suggesting a potential role for adiponectin in progression of cholangiocarcinoma. Furthermore these results suggest, for the first time, that serum adiponectin levels might represent a prognostic indicator in patients with CC. Our results support the hypothesis linking adipose-tissue derived hormones levels to growth of obesity-associated cancers (3). Adipokines appear to play an important role in risk prediction and management of cholangiocarcinoma patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0745 TreatMET BODY MASS INDEX AND WEIGHT CHANGE DURING INITIAL PERIOD OF CHEMOTHERAPY AFFECT SURVIVAL OUTCOME IN ADVANCED BILIARY TRACT CANCER PATIENTS

Seoul National University College Of Medicine, Department of Internal Medicine and Liver Research Institute, Seoul/Korea, Republic of

Contact E-mail Address: schmeiche80@gmail.com

Introduction: Recent studies have been conducted to investigate the association between obesity and survival in cancer patients. Cancer has a significant influence on the nutrient status of patients and obesity can affect on the pharmacokinetics of anti-cancer drugs. The impact of obesity on survival is known to vary in different cancers. Biliary tract cancer was less frequently analyzed and most of the studies were on the relationship between obesity and cancer incidence.

Aims & Methods: We performed this study to investigate the association between HER2 status and survival in advanced biliary tract cancer patients with chemotherapy. Between January 2005 and December 2015, two hundred and eighty-four patients who underwent chemotherapy for biliary tract cancer were retrospectively reviewed. The relationship between BMI (kg/m²) and overall survival (OS) was assessed. Based on World Health Organization BMI category and 2014 Clinical Practice Guidelines for Overweight and Obesity in Korea, BMI was classified as follows: underweight, <18.5 kg/m²; normal, 18.5-22.9 kg/m²; overweight, 23-24.9 kg/m²; obese, ≥25 kg/m².

Results: Median OS was 12.1 months for underweight patients, 10.5 months for normal patients, 16.1 months for overweight group, 13.6 months for obese patients, respectively. (p = 0.047) Univariate analysis showed that BMI, local status, and disease, operation, radiotherapy and ECOG performance were significantly associated with better survival. Compared with normal patients, overweight patients (BMI 23-24.9 kg/m²) had a reduced risk of mortality in multivariate analysis (HR 0.49, CI 0.33-0.72; 95% p = 0.036). In the additional analysis for the effect of change in body weight and BMI to the overall survival, larger amount of change in body weight was associated with further decrease in overall survival.

Conclusion: Slightly overweight status and the maintenance of body weight during the initial period of chemotherapy is independent predictor of better overall survival in advanced biliary tract cancer patients with good performance status.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0746 THROUGH THE CATHETER BIOPSY METHOD FOR BILIARY CARCINOMA

T. Okuzono
Department Of Gastroenterology, Sendai Kousei hospital, Sendai/Japan

Contact E-mail Address: okuzonotoru@gmail.com

Introduction: To perform curative operation of biliary carcinoma, the pre-operative identification of exact proximal and distal margins is important. A biopsy forceps that is conventionally inserted to common bile duct via duodenum ampulla is guided with an antecedent guide wire. Cannulation of the bile duct with the biopsy forceps may sometimes be difficult in cases where no sphincterotomy is performed, placing the patient at risk of post-ERCP pancreatitis after multiple attempts to advance the forceps into the duct. Pancreatobiliary endoscopists have reported the biopsy methods. This was a retrospective review of bile duct biopsies with this technique.

Aims & Methods: The aim of this study was to assess the feasibility and safety of the biopsy methods. This was a retrospective review of bile duct biopsies with this new method conducted in Sendai Kousei hospital from February 2015 to October 2016. All patients who had biliary stenosis were included. Patients' demographic data, technical success, adverse events and the diagnostic accuracy were evaluated.

Results: A total of 95 biopsy procedures were performed in 40 patients. The technical success rate was 95% (90/95). Post-ERCP pancreatitis occurred in 1 of 40 patients (2.5%, 1 grade 1 patient). There were no other adverse events like perforation or bleeding. The diagnostic yield of biopsy procedures was 100% (7 of 7 patients).

Conclusion: The new biopsy methods to biliary stricture were feasible and safe. It opens up exciting possibilities for endoscopic preoperative diagnosis of the biliary carcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0747 THE DEVELOPMENT OF A RISK SCORE TO PREDICT ADVERSE OUTCOMES OF EXPLORATORY SURGERY IN PATIENTS WITH PERIHILAR CHOLANGIOCARCINOMA

M. Gaspersz1, S. Baetner1, J. L.a. Van Vugt1, J. R.J. S. Coelen2, E. Roos2, J. De Jonge1, W. Polak1, F. E. j.a. Willemsen1, T. M. Van Gulik3, J. N. M. Ijzermans1, B. Groot Koerkamp1

1Surgery, Erasmus University Medical Center, Rotterdam/Netherlands
2Radiology, Erasmus University Medical Center, Rotterdam/Netherlands
3Surgery, Academic Medical Center, Amsterdam/Netherlands

Contact E-mail Address: m.gaspersz@erasmusmc.nl

Introduction: Patients with perihilar cholangiocarcinoma (PHC) have few treatment options and a poor prognosis. Most staging models for patients with PHC are based on imaging with potentially resectable disease and are not applicable to the vast majority of patients.

Aims & Methods: The aim of this study was to develop a prognostic score for all PHC patients using variables available at presentation. All consecutive patients with PHC (irrespective of tumor stage and treatment) in two tertiary referral centers between 2002 and 2014 were identified and included. Baseline patient and tumor characteristics were collected from medical records. Cox proportional hazards regression was used for multivariable analysis. Age, BMI, bilirubin, CA 19-9, and tumor size were modeled as continuous covariates.

Results: A total of 674 patients were included of whom 342 (50.8%) had unresectable disease at presentation and 176 (26.2%) underwent exploratory laparotomy. Multivariable analysis identified age (HR 1.41 (95% CI 1.23-1.63)), BMI (HR 1.11 (95% CI 1.05-1.17)), serum bilirubin level (HR 1.45 (95% CI 1.21-1.71)), CA 19.9 serum level (HR 1.22 (95% CI 1.07-1.38)), tumor size (HR 1.33 (95% CI 1.14-1.56)), WHO performance status 3-4 (HR 1.48 (95% CI 1.10-1.95)), suspected distant metastases on imaging (HR 1.69 (95% CI 1.29-2.20)), and main bile duct involvement (HR 1.51 (95% CI 1.21-1.84)) as independent prognostic parameters.

Conclusion: PHC patients undergoing exploratory laparotomy have a high risk of an adverse outcome. A prognostic risk score for adverse outcome may help clinicians to inform patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0748 A NEW PROGNOSTIC MODEL FOR PATIENTS WITH PERIHILAR CHOLANGIOCARCINOMA


1Surgery, Erasmus University Medical Center, Rotterdam/Netherlands
2Radiology, Erasmus University Medical Center, Rotterdam/Netherlands
3Surgery, Academic Medical Center, Amsterdam/Netherlands
4Academisch Medisch Centrum Dept. of Radiology, Amsterdam/Netherlands
5Department Of Public Health, Erasmus MC University Medical Center Rotterdam, Rotterdam/Netherlands

Contact E-mail Address: m.gaspersz@erasmusmc.nl

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Aims & Methods: The aim of this study was to develop a prognostic score for all PHC patients using variables available at presentation. All consecutive patients with PHC (irrespective of tumor stage and treatment) in two tertiary referral centers between 2002 and 2014 were identified and included. Baseline patient and tumor characteristics were collected from medical records. Cox proportional hazards regression was used for multivariable analysis. Age, BMI, bilirubin, CA 19-9, and tumor size were modeled as continuous covariates.

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Conclusion: A new prognostic score was created to predict survival for patients with PHC from the time of presentation. Discrimination using Kaplan-Meier analysis for the effect of change in body weight and BMI to the overall survival in advanced biliary tract cancer patients with good performance status.
Meier curves, and calibration curves revealed good predictive abilities. The risk score identified patients with a 1-year survival probability ranging from 15% to 73%.

Conclusion: We developed a prognostic score to predict overall survival for PHC patients using eight independent prognostic factors available at presentation. This score may help to inform patients and guide individualized treatment decision making.

Disclosure of Interest: All authors have declared no conflicts of interest.


P. Harvey, S. Baldwin, C. Chalfont, C. Gray, C. Harvey, P. Patel, N. Trudgill
1Gastroenterology, Sandwell and West Birmingham NHS Trust, Birmingham/United Kingdom
2Health Informatics, University Hospital Birmingham, Birmingham/United Kingdom

Contact E-mail Address: philipharvey@nhs.net

Introduction: Malignant biliary obstruction has a poor prognosis unless secondary to a resectable primary cancer. Recent data on PTC for the relief of malignant obstruction in a palliative setting demonstrated a high early mortality. We have therefore examined outcomes of ERCP in inoperable malignant obstruction.

Aims & Methods: The Hospital Episode Statistics (HES) database contains diagnostic and procedural data for all hospital attendances in England. HES is linked to the Office for National Statistics (ONS) to provide mortality data. All subjects from April 2001 to April 2015 in England with an ICD10 code for cancer 2 years prior to ERCP or in the following 6 months were examined. Subjects undergoing a curative surgical procedure were excluded. Associations between demographics, co-morbidities, unit ERCP volume and mortality were examined by logistic regression.

Results: 490 555 subjects were included in the study of whom 48.7% were male, median age 74.5 years (range 19–104). Pancreatic cancer was the most common aetiology (63.5%), followed by liver and intraductal bile duct malignancy (19.4%). Mortality was 4.16%, 10.9% and 19.6% for 7 day, in hospital and 30 day respectively. In multivariate analysis male gender (OR 1.14, (95% CI 1.08–1.19), p < 0.001); increasing by age quintile 64–71 (1.34, (1.23–1.47) p < 0.001), 72–77 (1.57, (1.44–1.72) p < 0.001); and previous renal failure (1.92, (1.77–2.09), p < 0.001) were associated with increased mortality. The TM6SF2 genotype carriers also showed a tendency towards increased mortality levels and a positive correlation between ALT levels and triglyceride concentrations (p = 0.003) and a higher central retinal artery equivalent (p = 0.020) compared to the major allele carriers. Carrying the TM6SF2 T allele in addition to carrying the PNPLA3 ‘risk’ allele, did not significantly increase the odds ratios for increased ALT concentrations. The prevalence of the metabolic syndrome did not differ between the different PNPLA3 genotype carriers nor between the TM6SF2 genotype carriers.

Conclusion: Despite significantly higher liver transaminase levels and a positive correlation between ALT levels and triglyceride and fasting insulin concentrations in PNPLA3 G allele carriers, these children did not have a more deteriorated cardiometabolic profile compared to non-carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concordantly in this specific population. Furthermore, these children with a high liver health risk may not be identified by measuring cardiometabolic parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017 09:00-17:00

PAEDIATRIC: LIVER, BILIARY AND PANCREAS - HALL 7

P0750 EARLY DEVELOPMENT OF NONALCOHOLIC FATTY LIVER DISEASE IN GENETICALLY PREDISPOSED CHILDREN: WITH OVERWEIGHT AND OBESITY DOES NOT COINCIDE WITH METABOLIC DERANGEMENTS

K. Karnebeck, J. Plat2, A. Vreugdenhil2
1Department Of Pediatrics, Maastricht University Medical Centre, Maastricht/Netherlands
2Department Of Human Biology, School Of Nutrition And Translational Research In Metabolism (nutrim), Maastricht University, Maastricht/Netherlands

Contact E-mail Address: kylie.karnebeck@umc.nl

Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common chronic liver disease and in particular a health threat in obese children. Single nucleotide polymorphisms in genes encoding PNPLA3 (rs738409) and TM6SF2 (rs58542926) contribute to the development of NAFLD. It is however unknown whether liver parameters and cardiometabolic disturbances coincide in children and non-carriers of these risk alleles in an at-risk obese pediatric population. Therefore, we assessed cardiometabolic derangements, genetic predisposition for NAFLD and liver transaminase levels in children with overweight and obesity.

Aims & Methods: One hundred and seventy-four children (49% boys) from the Children for Overweight Adolescent and Children’s Healthcare (COACH) at the Maastricht University Medical Centre were genotyped for PNPLA3 I148M and TM6SF2 E167K. Anthropometric, cardiometabolic risk and liver-related parameters were determined.

Results: Anthropometric parameters did not differ significantly between carriers and non-carriers of the risk alleles. ALT and AST were significantly higher in PNPLA3 G allele carriers as compared to the C allele carriers (ALT: CC 21, (19–22); GG 26, (20–30), p = 0.034; 50); GG 27, (21, 00–40, 00); GG 30, (26, 00–36, 00) (p = 0.004)). The odds ratio for having ALT levels above the cut-off values increased for every PNPLA3 G allele, with an OR of 2.51 (1, 22, 5; p = 0.015 for the PNPLA3 GG genotype and 5.54 (1, 51, 20, 02, p = 0.009 for the GG genotype, compared to the CC genotype. Carriers of the PNPLA3 risk allele did not show a deteriorated metabolic profile compared to non-carriers.

The TM6SF2 T allele carriers also showed a tendency towards increased transaminase levels, but a significantly healthier cardiometabolic profile (lower total cholesterol (p = 0.028), LDL cholesterol (p = 0.015) and triglyceride concentrations (p = 0.003) and a higher central retinal artery equivalent (p = 0.020) compared to the major allele carriers. Carrying the TM6SF2 T allele in addition to carrying the PNPLA3 ‘risk’ allele, did not significantly increase the odds ratios for increased ALT concentrations. The prevalence of the metabolic syndrome did not differ between the different PNPLA3 genotype carriers nor between the TM6SF2 genotype carriers.

Conclusion: Despite significantly higher liver transaminase levels and a positive correlation between ALT levels and triglyceride and fasting insulin concentrations in PNPLA3 G allele carriers, these children did not have a more deteriorated cardiometabolic profile compared to non-carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concordantly in this specific population. Furthermore, these children with a high liver health risk may not be identified by measuring cardiometabolic parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0751 TWO-DIMENSIONAL SHEAR WAVE ELASTOGRAPHY IN CHILDREN: WHAT IS THE MEAN RMPS10 VALUES? WHAT MEASUREMENTS NEEDED FOR A HIGH QUALITY EVALUATION?

C. Pienar1, P. Veale1, D. Gherardt1, I. Ciucu1, C. Paul1, O. Belé1, S.A. Popescu2, I. Sporea2
1Pediatrics Department, 2Vicror Babes2 University of Medicine and Pharmacy, Timisoara/Romania
3Gastroenterology And Hepatology, "Vctor Babes" University of Medicine, Timisoara/Romania

Contact E-mail Address: cpienar@gmail.com

Introduction: Pediatric chronic liver diseases are becoming a public health issue. Ultrasound based elastographic techniques have emerged as non-invasive methods of pediatric liver fibrosis assessment. The most recent are two dimensional shear wave elastography (2D SWE) techniques. While it seems to be highly reproducible in children, there is still no consensus regarding the number of measurements to be performed for a high-quality evaluation.

Aims & Methods: We aimed to investigate the number of liver stiffness measurement (LSM) needed for a high-quality evaluation using a 2D SWE technique. We conducted a prospective study which included 73 children (age range: 3–17 years, mean age 11.73 ± 3.35 years, 37% girls, mean body mass index (BMI) 25.12 ± 7.38 kg/m2). We used the 2D-SWE.GE (Logiq E9, GE Healthcare, Chalfont St Giles- UK), with a C1-6-D probe. One examiner performed 10 LSM for each child. We randomly extracted 1 LSM, 2 LSM, 3 LSM and 5 LSM from all 10 and calculated their respective medians. We employed the Friedman test to compare the medians of 1, 2, 3, 5 and 10 LSMs. We used the interclass correlation coefficient (ICC) to assess the agreement between the medians of 1, 2, 3, 5 and 10 LSMs.

Results: Medians calculated from 1, 2, 3, 5 and 10 LSMs were highly reproducible in children, there is still no consensus regarding the number of measurements to be performed for a high-quality evaluation. The TM6SF2 genotype carriers.

Conclusion: Despite significantly higher liver transaminase levels and a positive correlation between ALT levels and triglyceride and fasting insulin concentrations in PNPLA3 G allele carriers, these children did not have a more deteriorated cardiometabolic profile compared to non-carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concordantly in this specific population. Furthermore, these children with a high liver health risk may not be identified by measuring cardiometabolic parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0752 PERCUTANEOUS EMBOLIZATION OF VISCERAL ARTERY PSEUDO-AneURYSMS – A TERTIARY CENTER EXPERIENCE

R. Chavan1, J. Singh1, Z. Nabi1, R. Kalapala1, D.N. Reddy1
1Gastroenterology, Asia Institute of gastroenterology, Hyderabad, Hyderabad/India

Contact E-mail Address: drradhikachavan@gmail.com

Introduction: Visceral artery pseudo-aneurysm are rare, but potentially fatal if rupture. Pseudoaneurysm usually occurs most frequently after pancreatitis. Angiembolization with conventional trans-catheter approach is the standard treatment. Direct percutaneous embolization has been commonly used for treatment of peripheral artery pseudoaneurysm when trans-catheter approach is not feasible. However, very limited data is available regarding its safety and efficacy in visceral artery pseudoaneurysm.
Aims & Methods: We aimed to assess the technical feasibility, safety and effic-acy of percutaneous embolization as an alternative treatment option for visceral pseudo aneurysms. We retrospectively evaluated the data of patients who underwent percutaneous embolization at our institution from Feb 2007 to March 2017. All procedures were performed under ultrasound (US) guidance. Embolization technique, safety and efficacy of percutaneous embolization were analysed. At 30 days follow up US with color Doppler/dual phase computed tomography was done to see for recurrence of pseudoaneurysm.

Results: 23 patients (18-male) with mean age of 34.47 ± 7.28 (7-72) years, underwent direct percutaneous embolization for visceral pseudoaneurysm. Most common aetiology for pseudoaneurysm was trauma (3), paracentesis (3) and surgery (1). The site of pseudoaneurysm was- aorta (3) and gastroduodenal artery (1). Mean size of pseudoaneurysm was 0.6 (1–3.5) cm. Reasons for choosing percutaneous approach over transcatheter embolization included- technical difficulties in 11 patients, excess collateral feeding artery in 5 patients, and recurrence after previous embolization in 6 patients. Agents used for embolization- glue with lipiodol (21), coil (1) and coil with glue (1). Mean procedural time was 11.3 ± 2.11 (8–16) minutes and fluoroscopy exposure time was 2.4 ± 1.34 (1–6) minutes. Percutaneous embolization was successfully performed in all patients (technical success-100%). Mild adverse events included - local site pain in 19 (80%) patients. Moderate adverse event included - splenic infarct in 5 patients, all of which responded to conservative management. There were no major adverse events and no occurrence of distant embolization. At median follow up of 910 days (30–3186) there was no recurrence of pseudoaneurysm (clinical success-100%).

Conclusion: Percutaneous embolization is safe and effective for treatment of visceral artery pseudoaneurysm. Percutaneous technique may be considered as an alternative to trans-catheter embolization in cases of challenging anatomy, multiple collaterals and recurrence after previous embolization precluding transcatheter approach.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0753 DEVELOPMENT OF AUTOIMMUNE PANCREATITIS IS INDEPENDENT OF p21-DEPENDENT MITOCHONDRIAL INFLAMMATION G.M. Sekerci1, T. Reding1, L. Peter1, A. Gupta1, S. Sondal1, C. Verbeke2, E. Dejardin3, M. Heikenwalder4, R. Graf1
1Visceral & Transplantation Surgery, University Hospital Zurich, Zurich /Switzerland 2Institut fu¨r Pathologie, University of Oslo, Oslo/Norway 3Laboratory Of Molecular Immunology And Signal Transduction, University of Liège, Liège/Belgium 4Institute Of Virology, Technische Universität München, Helmholtz Center Munich, Munich/Germany

Contact E-mail Address: anurag.gupta@usz.ch

Introduction: Chronic (CP) and autoimmune pancreatitis (AIP) are characterized by CP pig as proreres. Whether CP is autoimmune is still unclear. AIP is considered mostly a T-cell mediated disease; however, in induction of chronic pancreatitis macrophages play a pivotal role. Cyclin dependent kinase (cdk) inhibitors are critical regulators in inflammatory disease as cdk inhibitors, activate proliferation, differentiation and differentiation of lymphocytes and b cells. In particular, p21 has been described as a mediator of inflammation and various autoimmune diseases by regulating T-cell activation and promoting macrophage development. We therefore examined the role of p21-mediated inflammation in AIP.

Aims & Methods: Human pancreas samples from CP and AIP patients were evaluated for p21 expression. To investigate the effects of p21 in pancreatitis, we intercrossed lympothenos overexpressing mice (Tyel/Erat-Lta, b/b) - a model to study CP and AIP – with p21 deficient (p21−/−) mice. Infiltrating cells were visualized by immunohistochemistry, supported by gene expression analysis in an early and a progressive phase. Circulating autoantibodies and the presence of tertiary lymphoid organs (TLOs) were analysed to assess autoimmunity.

Results: p21 was upregulated in human CP patients but remained unchanged in AIP patients. p21 deficiency in LT mice (Ltp21−/−) prevented early pancreatic injury. LTp21−/− mice had normal serum amylase, reduced inflammatory gene expression and cell infiltrate. In acinar cells diminished proliferation and aberrant activation of non-canonical NF-κB pathway was observed. In contrast, 12 months old LT mice with and without p21 had similar inflammatory gene expression and T and B cell infiltration. Interestingly, LT and Ltp21−/− mice had comparable tertiary lymphoid organs (TLOs), autoantibodies and elevated IgG levels. However, acinar cell proliferation, acinar-to-ductal metaplasia and acinar non-canonical NF-κB pathway activation remained impaired in Ltp21−/− pancreata.

Conclusion: Our findings indicate that p21 is crucial for pancreatitis in LT-driven pancreatic injury. p21 is involved in early acinar secretion of inflammatory mediators that attract innate immune cells. However, p21 is not essential for humoral immune response, accountable for autoimmunity and lack of p21 does not rescue AIP. Importantly, p21 intercrossing reveals that p21 protects acinar cells less susceptible to proliferation and transdifferentiation. We therefore suggest that chronic and autoimmune pancreatitis follow different inflammatory processes.

Disclosure of Interest: All authors have declared no conflicts of interest.
Infectious complications are main causes of mortality in severe acute pancreatitis. Most infections in AP are intestinal origin. The Nod2/CARD15 (OLIGOMERIZATION DOMAIN-CONTAINING PROTEIN 2) and TNF-alpha and lipopolysaccharide-binding protein (LBP) levels were studied.

Results: We detected p.R702W variant in 3 patients (3/32, 9.4%) in severe pancreatitis group, but this variant was not seen in the other two groups. 1007fs variant was found in 3, 3 and 1 patient in mild (3/36, 8.3%) and severe pancreatitis (3/32, 9.4%) groups, and in healthy group (1/27, 3.7%), respectively. There was no significant difference in the frequencies of NO2 variants between groups. Serum IL-6, TNF-alpha and LBP levels were significantly higher in the severe pancreatitis group than in the healthy group and mild pancreatitis group (all p < 0.001). However, there was no significant difference between these cytokine levels and NO2 variants.

Conclusion: Our results suggest that there may be a relationship between the presence of p.R702W variant and severe pancreatitis.

References

Disclosure of Interest: All authors have declared no conflicts of interest.
THE PREDICTORS OF STEP UP APPROACH USING ENDOSCOPIC ULTRASOUND-GUIDED TRANSMURAL DRAINAGE FOR WALLEDED-OFF NECROSIS
H. Shiomi1, A. Sakai1, T. Ezaki1, T. Nakagawa1, T. Kobayashi1, Y. Shiomi1, A. Masuda1, Y. Okabe1, T. Azuma1
1Gastroenterology, Kobe University Graduate School of Medicine, Kobe, Japan
2Gastroenterology, Kagakawa Central City Hospital, Kagakawa/Japan
Contact E-mail Address: shiomi@med.kobe-u.ac.jp
Introduction: Endoscopic ultrasound-guided transmural drainage (EUS-TD) has been shown to be a safe and effective minimally invasive treatment for walled-off necrosis (WON). However, in some cases, simple drainage is not sufficient to manage the symptoms of WON and step up approaches such as direct endoscopic necrosectomy (DEN) and surgical necrosectomy may be required. The association between the outcome of endoscopic treatment for WON remains unclear.
Aims & Methods: This study aimed to retrogradely correlate the clinical characteristic of WON with the outcome of endoscopic transmural drainage. 49 patients (38 males; mean age 60.79 ± 13.44) with symptomatic WON treated by an attempted EUS-TD initially were enrolled in this study. The relationship between the outcome of treatment and the clinical characteristics including morphological features of WON were assessed.
Results: The mean size of WON was 126.63 ± 46.79 mm. EUS-TD was technically successful in 48.49% (97.9%) patients and 26 (54.2%) improved with EUS-TD alone while 14 patients who underwent step up approach had multi-local (p = 0.05) and large size WON (p = 0.02) as compared to patients treated with EUS-TD alone. The extent of WON correlated significantly (p = 0.001) with the type of treatment. Gas bubbles sign within necrotic tissue on the abdominal CT imaging early after EUS-TD predicted the necessity of necrosectomy during the treatment (p < 0.001). Bleeding as adverse events was observed in 1 patients (6.2%). Two patients improved with conservative therapy and 1 patient underwent transcutaneous arteriolar embolization.
Conclusion: The step up approach is safe and effective for the treatment of WON. Multi-local, large size and extensive WON were important predictors for performing a step up approach. Gas bubbles sign within necrotic tissue after EUS-TD may help to perform necrosectomy.
Disclosure of Interest: All authors have declared no conflicts of interest.

THE ANALYSIS OF CLINICAL FEATURES AND RISK FACTOR OF RECURRENCE AFTER THE FIRST ATTACK OF ACUTE PANCREATITIS
N. Gao1, C. Jiao2, C. Ma1, M. Li1, W. Chen1
1The First Affiliated Hospital of Soochow University, Suzhou/China
2The Affiliated Taizhou People’s Hospital of Nantong University, taizhou/China
Contact E-mail Address: weichangchen@126.com
Introduction: Patients with a first episode of acute pancreatitis can develop recurrent or chronic pancreatitis (CP). However, little is known about the incidence or characteristics of WON with the outcome of endoscopic transmural drainage. 49 patients with a first episode of acute pancreatitis from September 2012 - September 2015. We collected relevant information of disease course and follow up until June 2016. We chose to analyze these data according to etiology, explore the relevant characteristics of recurrence episode and performed univariate and multivariate regression of possible risk factors.
Results: During a median follow-up of 30.4 months, 411 cases were followed up continuously. The total recurrence rate is 29.7% (131/441), with a median recurrence interval of 6.5 (IQR 2.3–10.33) months. The recurrence rate and median recurrence interval of biliary group, hyperlipidemic group and other etiology group were 21.5% (57/265), 5.78 (I 2.92–9.92); 42.7% (30/71), 8.28 (IQR 5.85–16.30); 30.1% (26/85), 6.18 (IQR 2.60–9.07). To biliary AP, the recurrence interval of biliary group, hyperlipidemic group and other etiology group were 21.5% (57/265), 5.78 (IQR 2.52–9.92); 49.2% (30/61), 8.28 (IQR 2.52–9.92); 30.6% (26/85), 6.18 (IQR 2.60–9.07). To biliary AP, the recurrence group were 21.5% (57/265), 5.78 (IQR 2.52–9.92); 49.2% (30/61), 8.28 (IQR 2.52–9.92); 49.2% (30/61), 8.28 (IQR 2.52–9.92). To biliary AP, the recurrence rate was 27.5% (113/411), with a median recurrence time (F = 25.227, p = 0.00001), increased of thrombin (F = 19.428, p = 0.00004), fibrinogen concentration (F = 4.6046, p = 0.03568), D-dimers level (F = 28.456, p = 0.00001), and level of soluble fibrin-monomer complexes (F = 34.015, p = 0.00001), lack of activity of antithrombin III (F = 42.123, p = 0.0001), increased synthesis of C-reactive protein (F = 15.591, p = 0.0002), excessive production of proinflammatory cytokines (F = 21.976, p = 0.00001), IL-6 (F = 21.076, p = 0.00002), and TNF-a (F = 25.643, p = 0.00001). In acute pancreatitis patients with renal dysfunction was shown a direct correlation between severity of renal failure (SOFA score) and concentrations of IL-6 (R = 0.416484, p = 0.000504), CRP (R = 0.514726, p = 0.00011), D-dimers (R = 0.321619, p = 0.008456), soluble fibrin-monomer complexes (R = 0.290750, p = 0.017868), and duration of thrombin time (R = 0.296007, p = 0.015814).
Conclusion: The mechanism of the acute renal injury following acute necrotizing pancreatitis is complicated by the inflammatory cascades and hypercoagulative state are initiated this pathological process.
Disclosure of Interest: All authors have declared no conflicts of interest.

THE NEW IL13/FN1 RATIO PREDICTS SEVERITY IN ACUTE PANCREATITIS
A. Rodriguez-Nicolau1, A. Martinez-Chamorro1, M.P. Jimenez-Gamiz1, A.M. Matas-Cobos2, F. Ruiz-Cabello1, E. Redondo-Cerezo1
1Immunology, *Virgen de las Nieves* University Hospital, Granada/Spain
2Gastroenterology And Hepatology, *Virgen de las Nieves* University Hospital, Granada/Spain
Contact E-mail Address: eredondoc@gmail.com
Introduction: Acute Pancreatitis (AP) may be severe in up to 20% of patients with substantial morbidity and mortality, which is related to a generalized inflammatory response. In some patients, this severe inflammatory response is down-regulated; in others it escapes control. Our group has previously described a TH1 profile associated with poor prognosis in AP, and a TH2 profile associated with a mild or moderate condition.
Aims & Methods: Our aim was the development of an index for an early assessment of prognosis in AP. We analyzed 12 cytokines in 117 patients, upon...
admission to hospital. A receiver operating characteristic (ROC) analysis was built up to determine the cut-off point of severity. Later, a multiple discriminant analysis was performed, using the Wilks lambda test, to identify the variables that differ most between patients with mild AP and moderate/severe AP. A ratio calculated using the most discriminant cytokines was studied in relation to severity and mortality.

Results: ROC curves showed that TH1 cytokines IL-6, IFN-γ and TNF-α could be measured for the prediction of severe AP, while TH2 cytokines IL-4, IL-13, GM-CSF, for the prediction of a mild or moderate condition. A stepwise analysis showed that IL-13 and IFN-γ were the biomarkers which contributed most to the discrimination between mild and moderate/severe AP (Wilks’ lambda = 0.855, p < 0.0001; Wilks’ lambda = 0.747, p < 0.0001, respectively). We calculated the IL13/IFNγ index. This ratio was significantly higher in patients with mild AP compared between groups (p=10−6.9). This difference was also observed between severe AP and the rest of the patients (p=0.007). The ROC curve was also modified, increasing the area under the curve (AUC), the sensitivity and the specificity, in relation to AP severity.

Conclusions: An IL13/IFNγ ratio that could be of great interest in the assessment of prognosis in AP. A high value of the IL13/IFNγ ratio at hospital admission is associated with a good prognosis of AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0764 CLINICAL EFFICACY AND SAFETY OF EU-GUIDED LUMEN-APPOSING METAL STENT ASSISTED Pancreatic WAll-Off NECROSIS DRAINAGE: A REAL-LIFE EXPERIENCE IN A TERTIARY HOSPITAL

S.T. Law¹, C. De La Serna Higuera², M. Perze-Miranda³, P. Gil⁴
¹Department Of Medicine And Geriatrics, Tsuen Man Hospital, Hong Kong; Hong Kong PRC
²Gastroenterology And Hepatology, Rio Hortega, Valladolid; Spain

Introduction: Recently, lumen apposing metal stent (LAMS) has been developed and employed in abscess drainage. However, its use is limited by its cost [1] and its safety concerns as apparently associated with more adverse events.[2] The aim of this study was to investigate the efficacy and safety of LAMS in endoscopic ultrasound (EUS)-guided pancreatic wall-off necrosis (WON) drainage.

Aims & Methods: Patients All consecutive patients with necrotizing pancreatitis with WON who underwent EUS-guided drainage using LAMS during the period of 1st Jul 2012 and 30th Jun 2016 were retrospectively retrieved from the institution database. Necrotizing pancreatitis and WON were defined as according to the revised 2012 Atlanta classification. Those encapsulated fluid collection outside the pancreas were excluded from this study. The following data were collected: patient demographics, EUS and microbiologic features of the necrosis, procedural characteristics and their outcomes. Procedures All procedures were performed by 2 endosonographers. Once the WON was identified, a 19-gauge needle was inserted with 0.035-inch guidewire to allow for injection of the AXIOS device, which was then advanced to create the fistula tract by using the electrocautery tip. Once the delivery catheter was inside the WON, the distal and proximal flange of the stent were deployed subsequently under EUS and endoscopic guidance respectively. Outcome measures Primary outcome measures were: 1. technical success defined as stent deployment without any difficulty nor reposition; 2. clinical success defined as symptom resolution with the abscess size ≤2 cm on computed tomography (CT); Secondary measures are: 1. Stent revision due to its migration/dislodgment in case of unresolved abscess; 2. adverse events; 3. WON recurrence Data analysis Continuous variables were expressed as median and IQR. Categorical data were expressed as absolute numbers and percentages.

Results: The clinical characteristics of the patients and their WONs are shown in Table 1. In the cohort, the deployment of LAMS (AXIOS: 15 × 10 mm, n = 38; 10 × 10 mm, n = 8) was technically success in 45 (97.8%, 3 cases required 2nd attempt for proper deployment) cases while one case required to switch over to a fully-covered metal stent due to the lengthy insertion tract. 26 (60.9%) cases were managed with necrosectomy (median 1, IQR 2) in which 15 (32.6%) of them had concurrent nascocystic drainage prior to each procedure. 43 (93.5%) patients were treated successfully while two refractory cases required supernumerary insertion of a fully-coupled metal stent coaxially to control the bleeding while the other five had bleeding stopped spontaneously. Delayed bleeding was reported in 4 cases: three were managed by local treatment and one by re-lumen apposing metal stent insertion and one with uncontrolled bleeding due to disseminated intravascular coagulopathy and then died of multiple organ failure. Ten cases were reported to have stent migration during management in which two cases were dissolved during necrosectomy while the others were found during follow-up.

Table 1: Clinical Characteristics of the cohort and its management outcome measures

<table>
<thead>
<tr>
<th>LAMS (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
</tr>
<tr>
<td>Male sex</td>
</tr>
<tr>
<td>Comorbidities</td>
</tr>
<tr>
<td>Diabetic mellitus¹</td>
</tr>
<tr>
<td>Cardiovascular disease²</td>
</tr>
<tr>
<td>Chronic obstructive airway disease³</td>
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<tr>
<td>Malignancy on chemotherapy³</td>
</tr>
<tr>
<td>Cause of pancreatitis</td>
</tr>
<tr>
<td>Gallstones</td>
</tr>
<tr>
<td>Miscellaneous²</td>
</tr>
<tr>
<td>APACHE II score</td>
</tr>
<tr>
<td>White cell count (x1.000/μL)</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
</tr>
<tr>
<td>Total bilirubin (mg/dL)</td>
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<tr>
<td>ALT (U/L)</td>
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<tr>
<td>total bilirubin (mg/dL)</td>
</tr>
</tbody>
</table>

(continued)
Introduction: Post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) is a common and serious adverse event following ERCP, with a reported incidence of 9.7% in unselected patients [1]. Given huge economic and clinical burden, effective approaches for post-ERCP pancreatitis prophylaxis remains a major priority for research. Nonsteroidal anti-inflammatory drugs (NSAIDs) have also been shown the potential efficacy in prophylaxis PEP across high-risk patients, especially for diclofenac or indomethacin [3–5]. Recently, a prospective, double-blind, controlled trial conducted by Levenick [6] and colleagues in the USA showed that the reduction in PEP using indo- methacin was not as significant as previously reported. In fact, even given cases of pancreatitis occurred in indomethacin group compared with placebo group. Subsequently, a high-quality meta-analysis also concluded that there is no prophylaxis for the prevention of PEP among average-risk patient[7]. These findings raised the question that whether administration of rectal indomethacin should be recommended in average-risk patients. 

Aims & Methods: We aimed to determine the beneficial effect of rectal indomethacin in the prevention of post-ERCP pancreatitis in average-risk of patients. We systematically searched Cochrane Central Register of Controlled Trials, PubMed, and Scopus and were included studies up to October 2016. Studies that evaluated rectal administration of indomethacin in the prevention of post-ERCP pancreatitis were included in the analysis. We adopted a random-effects model to calculate overall relative risk (RR) and 95% confidence interval (CI).

Results: We identified ten randomized clinical trials from initial search and finally included in the meta-analysis. Administration of rectal indomethacin significantly reduced the incidence of PEP in combined population (RR, 0.63; 95% CI, 0.50–0.77). There was no significant heterogeneity across included studies (I² = 14.2%, P = 0.31). In subgroup analysis, rectal indomethacin was effective in both high-risk (RR, 0.49; 95%CI, 0.35–0.71) and average-risk (RR, 0.69; 95%CI, 0.55–0.86) patients and reduced the risk of mild and moderate to severe pancreatitis. The overall results remained unchanged and robust in sensitive analysis. There was no evidence of significant publication bias among this meta-analysis.

Conclusion: Rectal administration of indomethacin is an effective approach to prevent the incidence of post-ERCP pancreatitis both in high-risk and average-risk population undergoing ERCP. However, more high-quality randomized controlled trials are needed to further investigate the optimal timing for administration of indomethacin.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0765 RECTAL INDOMETHACIN IS PROTECTIVE AGAINST POST-ERCP PANCREATITIS IN HIGH-RISK AND AVERAGE-RISK POPULATION: A SYSTEMATIC REVIEW AND META-ANALYSES

X. He, W. Wu, Y. Ding, W. Zheng, L. Sun, J. Si
1Department Of Gastroenterology, Sir Run Run Shaw Hospital, hangzhou/China
2State Key Laboratory for Diagnosis and Treatment of Infectious Diseases, The First Affiliated Hospital, School of Medicine, Zhejiang University, hangzhou, China, Hangzhou/China

Contact E-mail Address: hexingkang@zju.edu.cn

Introduction: Acute pancreatitis (AP) is one of the most common gastrointestinal diseases requiring hospitalization with an annual incidence of 13–50 cases per 100,000 persons. It is a potentially fatal disease with an overall mortality ranging from 2 to 8%. Both epidemiology and outcomes are variable according to the different countries. Furthermore, few studies have considered the impact of hospital units on AP outcomes.

Aims & Methods: To evaluate both the trend and outcomes of acute pancreatitis according to the admitting hospital units: Surgery, Internal/General Medicine, Gastrointestinal (GI) Unit, Intensive Care Unit (ICU). This is a retrospective
cohort study based on the anonymous computerized database of hospital discharges in Veneto Region (North-East of Italy). The principal diagnosis of AP according to the International Classification of Diseases 9th revision, Clinical Modification (ICD 9-CM, code 577.0) of the hospital discharges was selected. The period from January 2001 to December 2015 was analysed. Veneto population was considered as the reference population (in the period, it varied from 4,529,823 to 4,927,527 inhabitants, with 51% females). Hospitalization, Length of stay (LOS), in-hospital mortality, need for surgery (according to the DRG 191–194, 199–201 which identified biliopancreatic surgery) were reported according the Admitting Hospital Units. Statistics: Chi squared for trend and Odds Ratio (OR) were applied.

**Results:** During the analysed period, 23,389 overall hospitalizations for AP, annual hospitalizations of 32 patients/100,000 inhabitants and in-hospital mortality of 7.2% were observed. Characteristics of the patients were: mean age: 62.2 ±/−19.3ys, 54% Males (M); Female (F) mean age: 65ys+/−19.3ys, male mean age: 59.4+/−19.3ys (p = 0.05). Hospitalizations was higher in males (M: 35.4, F: 28.4, OR 1.24 (95% CI: 1.20–1.27, p < 0.05) and it increased in a stepwise progression from youngest to oldest patients (from 4.4 to 151.2 p < 0.05); a similar trend was observed when considering in-hospital mortality (from 0.5 to 10.3%, p < 0.05). From 2001 to 2015, hospitalization (32.4 to 29.5, p = 0.04), in-hospital mortality (1.41 to 0.79, p < 0.05) and need for surgery (NFS: 5.6% to 3.0%, p < 0.05) trends decreased. Conversely, admission trends increased during the analysed period both in General Medicine (from 34 to 63, p < 0.05) and Gastrointestinal (GI) Units (from 14 to 29, p < 0.05). The Overall in-hospital mortality was the lowest in GI Units with a NFS of 3.6% (see Table). In comparison to General Medicine Units, GI units were associated with a low in-hospital mortality (OR: 0.37, CI 95%: 0.28–0.49, p < 0.05) and an high NFS (OR: 2.88, CI 95%: 2.18–3.41, p < 0.05).

**Conclusion:** During the last 15 years in the Veneto Region, hospitalization rate, in-hospital mortality rate and need for surgery of acute pancreatitis significantly decreased. Conversely, admissions in both General Medicine and GI units increased. Management of AP in GI units seems to be related with a best outcome: lower in-hospital mortality and probably, more eligible patients for surgical treatment.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0767 COMPARISON OF CLINICAL COURSE AND OUTCOME OF ACUTE PANCREATITIS, RECURRENT ACUTE PANCREATITIS, ACUTE ON CHRONIC PANCREATITIS**

Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh/India

**Contact E-mail Address:** dibhya.sharma@yahoo.com

**Introduction:** Recurrent acute pancreatitis (RAP) and acute on chronic pancreatitis (ACP) are likely to have less severe disease and local complications in comparison with acute pancreatitis (AP) possibly due to underlying chronic changes or fibrosis. However there is lack of literature regarding comparative studies between the natural course of disease and outcome of patients of AP vis-à-vis that of RAP and ACP.

**Aims & Methods:** This study was conducted to compare the clinical course and outcomes of patients with AP, RAP and ACP. 248 consecutive patients with diagnosis of AP, RAP or ACP were included during study period. Outcome measures studied were severity, organ failure (OF), persistent organ failure (pOF), need for ICU stay, ventilator and hemodialysis, need for percutaneous catheter drain (PCD), surgery and mortality.

**Results:** Of 248,158 (64%) patients had AP, 45 (18%) patients had RAP and 43 (18%) patients had ACP. 86 (54%) of AP, 4 (0%) of ACP and none of patients in RAP group had severe AP according to revised Atlanta classification (p < 0.001). On comparison of OF, 101 (63%: of whom 54% had pOF) of AP, 6 (13%; of whom 9% had pOF) of ACP and none of RAP patients developed OF (p < 0.001). PCD and surgery requirement were seen in 89 (56%) & 9 (6%) of AP, 5 (11%) & 4 (9%) of ACP and none of RAP patients respectively (p < 0.001).

**Conclusion:** During the last 15 years in the Veneto Region, hospitalization rate, in-hospital mortality and need for surgery of acute pancreatitis significantly decreased. Conversely, admissions in both General Medicine and GI units increased. Management of AP in GI units seems to be related with a best outcome: lower in-hospital mortality and probably, more eligible patients for surgical treatment.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0768 ACUTE PANCREATITIS IN PATIENTS WITH IPMNS: RETROSPECTIVE STUDY OF 346 PATIENTS OBSERVED FROM 2009 TO 2016**

L. Brozzi, A. Amadio1, F. De Marchi1, R. Teresa Marzit2, I. Breoni1, P. Campagnola1, S.F. Ciriò1, A. Gabbrielli1, L. Frulloni1
1 Medicine, AOUI Verona-Pancreas Center, verona/Italy
2Gastroenterology, University of Verona, Verona/Italy

**Contact E-mail Address:** Lorenzo.brozzi89@gmail.com

**Introduction:** In literature the frequency of acute pancreatitis (AP) in patients with IPMNs varies between 12 and 65%, but most of studies are from surgical series or often pancreatitis occurred after surgery was included. Furthermore, most of the studies includes in the diction of "symptomatic IPMNs" the presence of less severe disorders, such dyspeptic symptoms, making series unclear.

**Aims & Methods:** The aim of this study was to investigate the correlation between the cut-off of IPMN and acute pancreatitis and to determine the frequency of each in the different characteristics from asymptomatic IPMNs patients, evaluate the possible differences between type and localization of IPMNs in occurrence of acute pancreatitis and his disease severity. A retrospective analysis was performed on all observed patients with IPMN-MD. IPMN-BD and mixed type and followed at Gastroenterology Unit in the period between January 2009 and March 2016. In the study patients an instrumental or histological diagnosis of IPMNs were included.

**Results:** Studied 346 patients (164 males and 182 females, mean age at the first report 61.6 ± 12.2 years). At the time of radiological diagnosis, 45% were asymptomatic, 51% had had symptoms, while 4% of data were missing: the frequency of AP (excluding biliary etiology) of all 346 patients with IPMN was 26%. AP was edematous in 85% of patients and necrotic in 15%. We found increased frequency in patients with PA with IPMN of the main pancreatic duct (MD and mixed), and unilocular type. The localization to the body seems to be more correlated with the presence of AP. The number of cysts (for IPMN-BD and mixed type) was significantly lower in patients who have had AP.

**Conclusion:** Our medical extraction series confirms that the PA is an event that occurs in 26% of patients with IPMNs, with a prevalence of the male sex, it is associated with a IPMN central and mixed type, predominantly located in the body. The pancreatitis is not associated with malignancy in resected patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0769 APOLIPOPROTEIN B AND A-I RATIO PREDICTS SEVERE ACUTE PANCREATITIS**

J. Kim, K. J. Lee
Internal Medicine, Yonsei University Wonju College of Medicine Dept. of Internal Medicine, Wonju/Korea, Republic of

**Contact E-mail Address:** jawkim96@yonsei.ac.kr

**Introduction:** Severe acute pancreatitis (SAP) has a considerable mortality and morbidity rate. Although many indices have been developed to classify the severity of acute pancreatitis (AP), there is no ideal method for predicting SAP. The ratio of apolipoprotein B to A-I (apoB/A-I) is associated with metabolic syndrome and inflammatory status.

**Aims & Methods:** This study aims to investigate the association between severity of AP and serum apoB/A-I ratio. Patients with AP were prospectively enrolled at Yonsei University Wonju College of Medicine from March 2015 to August 2016. The severity of acute pancreatitis was assessed according to the revised Atlanta classification criteria (Atlanta 2012).

**Results:** Of 191 patients with AP, 134 (70.2%) were classified as mild AP, 42 (22%) as moderately severe AP, and 15 (7.9%) as SAP. The apoB/A-I ratio was highest in patients with SAP compared with those with mild and moderately severe AP (p < 0.001). TheapoB/A-I ratio positively correlated with Atlanta classification, computed tomography severity index, and Bedside index for severity of AP. The apoB/A-I ratio showed the highest ability to predict SAP in patients with AP compared with apolipoprotein B or apolipoprotein A-I alone.

**Conclusion:** Serum apoB/A-I ratio appears to have value in predicting SAP in patients with AP.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**A430**

**References**


P0770 IMAGING IN CHRONIC PANCREATITIS – DATA FROM THE SCANDINAVIAN-BALTIC PANCREAS CLUB DATABASE

T. Engjom1, F. G. Erchinger1, E. Tjora2, G. Dimezvski2

1 Department Of Clinical Medicine, University of Bergen, Bergen/Norway

2 Pediatric Department, Hankelund University Hospital, Bergen/Norway

Contact E-mail Address: trond.engjom@helse-bergen.no

**Introduction:** The Scandinavian-Baltic-Pancreatic-Club database collects data from patients with chronic pancreatitis (CP) in Nordic countries. Grading of structural changes is important in the description of a CP cohort.

**Aims & Methods:** We aimed to characterise structural changes of the pancreas in patients with CP. Subjects with definitive or probable CP according to the M-ANNHEIM classification were included. Structural changes were graded according to the M-ANNHEIM-classification. A subgroup was also scored by the modified Cambridge score.

**Results:** The database contains 932 patients (623 men). The M-ANNHEIM-score was present from 446 subjects and both imaging scores from 93 subjects. According to M-ANNHEIM subjects were graded as 0: Normal (8.1%), 1: Correlation to the clinical data.

**Disease duration:**

<table>
<thead>
<tr>
<th>Disease duration (Years)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
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<tbody>
<tr>
<td>3 (5.2)</td>
<td>3.6 (5.8)</td>
<td>4.6 (5.8)</td>
<td>5.0 (6.4)</td>
</tr>
</tbody>
</table>

**Pain (VAS 0–100)**

<table>
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<th>B: Minimal change</th>
<th>C: Marked</th>
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<td>39.4 (36.5)</td>
<td>35.5 (35.3)</td>
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</tr>
</tbody>
</table>

**Nutrition (BMI kg/m2)**

<table>
<thead>
<tr>
<th>Nutrition (BMI kg/m2)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.2 (5.0)</td>
<td>24.7 (5.5)</td>
<td>23.7 (4.7)</td>
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</table>

**Malnutrition (%)**

<table>
<thead>
<tr>
<th>Malnutrition (%)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>10</td>
<td>11</td>
<td></td>
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</table>

**Faecal Elastase (µg/g)**

<table>
<thead>
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<th>Fecal Elastase (µg/g)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
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</table>

**Diabetes (%)**

<table>
<thead>
<tr>
<th>Diabetes (%)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>10</td>
<td>11</td>
<td></td>
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</table>

**Smoke (Pack years)**

<table>
<thead>
<tr>
<th>Smoke (Pack years)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (0–20)</td>
<td>0 (0–25)</td>
<td>17 (0–37)*</td>
<td></td>
</tr>
</tbody>
</table>

**Alcohol (Lifetime years > 5units/day)**

<table>
<thead>
<tr>
<th>Alcohol (Lifetime years &gt; 5units/day)</th>
<th>A: Normal</th>
<th>B: Minimal change</th>
<th>C: Marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (0–2.5)</td>
<td>0 (0–18)</td>
<td>0 (0–18)</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05 (Kruskal-Wallis). No other differences reached significance. Values: mean (SD) or median [IQR-range]. Malnutrition: BMI < 18.5.

**Conclusion:** Subjects with marked structural changes had the highest lifetime smoke-doses. There was poor correlation of structural changes to the clinical features. The two imaging scores demonstrated acceptable correlation and agreement. Poor agreement in normal/minimal-change groups may reduce the value of the scores where they are most needed. The results are presented on behalf of the SBPC study group.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

P0771 OSTEOPATHY IS COMMON IN PATIENTS WITH CHRONIC PANCREATITIS, BUT IS NOT RELATED WITH VITAMIN D AND FECAL ELASTASE LEVELS (P-BONE STUDY)

S. Stigliano1, A. Walldhalter2, E. Martinez-Moneo3, S. Robinson4, M. Malvik3, A. Hedstrom3, A. Kaczka3, M. Scholder3, G. Delle Fave4, P. Simon5, G. Caparso1

1 Objective And Liver Disease, Sant' Andrea Hospital, Rome/Italy

2 Department For Internal Medicine I, University Hospital Regensburg, Regensburg/Germany

3 Hospital Universitario de Cruces, Bilbao/Spain

4 Department of HPB Surgery, Newcastle upon Tyne, Newcastle/United Kingdom

5 Tartu University Hospital, Tartu/Estonia

8 Karolinska university hospital, Stockholm/Sweden

9 University Hospital Lodz, Lodz/Poland

Contact E-mail Address: santi_stigliano@yahoo.it

**Introduction:** In patients with chronic pancreatitis (CP) malabsorption of vitamins D and K, alcoholism, smoking and inflammatory status contribute to low bone mineral density (BMD). A recent meta-analysis estimated the prevalence of osteoporosis (25%) and osteopenia (40%) in CP and highlighted limitations of the reviewed studies.

**Aims & Methods:** To evaluate the prevalence of osteoporosis and osteopenia in patients with CP and to investigate the correlation between BMD and CP features, and vitamin D and PEI. This is a multicentre cross-sectional study (P-BONE, a Pancreas 2000 project) on prevalent CP patients. The Diagnosis and severity of the disease was defined according to the M-ANNHEIM classification. Clinical information and biochemical variables were recorded; PEI was assessed by clinical case. Standardized Osteodensitometry was performed by dual-energy x-ray absorptiometry (DEXA).

**Results:** 211 consecutive CP patients were enrolled at 6 Centres (67% M; mean age 60 ± 13 years). Osteoporosis was diagnosed in 42% and osteopenia in 22% of cases. Alcoholism was associated with vitamin D deficiency (20%) and with low levels of fecal elastase (p < 0.02) and with lower level of vitamin D (p < 0.001) but not with osteopenia or osteoporosis. Female sex and older age seems to be associated with a higher risk of developing osteoporosis (OR 4.5 95% CI 2–9.8 p 0.001; OR 1.09 95% CI 1–1.3 p 0.01) while a higher BMI is associated with a reduced risk of its occurrence (OR 0.89 95% CI 0.77–0.94 p 0.001).

**Conclusion:** The present data confirm a high rate of osteoporosis in CP patients. However, there was apparently no correlation between BMD, pancreatic exocrine function, severity of the disease or vitamin D levels. Other factors, such as vitamin K might deserve investigation for their possible relationship with bone mineral density in CP patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

P0772 NATURAL HISTORY OF PANCREATITIS ASSOCIATED WITH SPINK1 MUTATIONS

N. Muller1, O. Hentic1, F. Maire1, P. Ruszniewski1, P. Levy2, V. Rebourcs2

1 Beaujon Hospital, Clichy/France

2 Service De Gastroenterologie-pancreatologie, Universite Denis Diderot Hospital Beaugrenelle, Service de Pancreatologie, Clichy Cedex/France

Contact E-mail Address:nelly.muller@aphp.fr

**Introduction:** SPINK1 is a gene coding for the inhibitor of the cationic trypsino-

ogen. Heterozygous mutations prevalence is estimated at 2%. They are recognized as a risk factor for chronic pancreatitis. However few data are available regarding the natural history and the risk of complications in these patients.

**Aims & Methods:** A prospective monocentric study was carried out from 2000 to 2016 to describe the natural history of SPINK1 mutation related pancreatitis. All patients referred for idiopathic acute and/or chronic pancreatitis with a SPINK1 mutation were included and followed annually. Epidemiological, genetic, clinical and morphological data were collected.

**Results:** We included 158 patients. Mutations of SPINK1 were: heterozygous (65%), homozygous (8%) N34S, others (27%). Median age at first symptoms was 42 years. At diagnosis was 20 [2-73] and 29 years [3-76]. During follow-up (median length:7.4 years), clinical manifestations were pancreatic pain (73%), pseudo-cyst (15%), acute pancreatitis (77%), cholestasis (6%), exocrine pancreatic insufficiency (EPI) (33%), diabetes (15%) and pancreatic adenocarcinoma (n = 6.4%). Calculations and duodenal abnormalities were found in 56% and 62%. Endoscopic treatment and surgery were performed for 16% and 14% of the patients. Four patients died including 3 due to pancreatic cancer). The risk of pancreatic cancer at 55, 60, 70 and 75 years was 9.4%, 14.7%, 28.9% and 46.7%. Risk factors of cancer were calcifications (p = 0.03) and EPI (p = 0.04).

**Conclusion:** SPINK1 mutations should be searched for in young patients with idiopathic pancreatitis. Risk of pancreatic cancer is probably underestimated.
Cancer screening should be discussed especially in case of pancreatitis with calcifications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0773 EXOCRINE FUNCTION, NUTRITION AND ENZYME TREATMENT IN THE SCANDINAVIAN BALTIC PANCREAS CLUB DATABASE - PRELIMINARY DATA

F.G. Erchinger1, T. Engjom2, E. Tjora1, G. Dimcicevski
1Medical Department, Voss Hospital, Voss/Norway
2Medical Dept, Haukeland University Hospital Medical Department, Bergen/Norway
3Pediatric Department, Haukeland University Hospital, Bergen/Norway
4Department Of Clinical Medicine, University of Bergen, Bergen/Norway

Contact E-mail Address: friedemann. erchinger@heles.bergen.no

Introduction: The Scandinavian-Baltic-Pancreatic-club database collects patients with chronic pancreatitis (CP) from Nordic countries. Description of exocrine pancreatic insufficiency (EPI) and consequences is important in characterization of CP cohorts.

Aims & Methods: Characterise EPI from CP in a Northern European cohort. Patients with definitive or probable CP (M-ANNHEIM diagnostic criteria) were included from nine centres. Demographic data, body-mass index (BMI), faecal elastase (FE), enzyme-doses and lab-parameters were collected. Values: Mean (SD) unless otherwise stated. EPI-classification grouped patients as follows: A: Normal, B-Mild: EPI not requiring enzymes, C-Proven: EPI requiring enzymes.


<table>
<thead>
<tr>
<th>Clinical parameter</th>
<th>(A) Normal</th>
<th>(B) Mild insufficiency</th>
<th>(C) Proven insufficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exocrine pancreatic function (%)</td>
<td>33</td>
<td>16</td>
<td>51</td>
</tr>
<tr>
<td>Faecal Elastase (μg/g) (mean (SD))</td>
<td>368 (161)</td>
<td>128 (144)</td>
<td>51 (69)</td>
</tr>
<tr>
<td>Nutrition: (kg/m²) (mean (SD))</td>
<td>24.6(4.9)</td>
<td>23.7(4.3)</td>
<td>22.6(4.3)</td>
</tr>
<tr>
<td>Frequency BMI &lt; 18.5 (%)</td>
<td>5</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Vitamin D: Frequency &lt; 25nmol/L (%) (I vs II)</td>
<td>7.4</td>
<td>23.7</td>
<td>17.6</td>
</tr>
<tr>
<td>Enzyme Treatment (lipase-units/day) (median [IQ range])**</td>
<td>0(0–75000)</td>
<td>120000</td>
<td>[75000–150000]</td>
</tr>
<tr>
<td>Hemoglobin: (median [IQ range])**</td>
<td>11.8(2.7–3.0)</td>
<td>10.7(2.8)</td>
<td></td>
</tr>
<tr>
<td>Faecal Elastase and disease duration (years)**</td>
<td>&lt;10: 143(175)</td>
<td>&gt;10: 91(118)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions: In our material frequency of EPI is higher than reported in the Nordic countries. Description of exocrine pancreatic insufficiency (EPI) and consequences is important in characterization of CP cohorts.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0774 FLUID AND HCO3\(^{-}\) SECRETION AND CFTR ACTIVITY IS INHIBITED BY CIGARETTE SMOKE EXTRACT IN GUINEA PIG PANCREATIC DUCTAL CELLS

D. Talas1, P. Pallagi1, V. Venglovč2, E. Gał3, K. Tôth1, A. Schmür1, J. Maleš1, D. Cuspor1, Z. Rakonzay1, P. Hegyi
1First Department Of Medicine, University of Szeged, Szeged/Hungary
2Department Of Pharmacology And Pharmacotherapy, University of Szeged, Szeged/Hungary
3Department Of Pharmacology, University of Szeged, Szeged/Hungary
4Department Of Pathophysiology, University of Szeged, Szeged/Hungary

Contact E-mail Address: talasdave@icloud.com

Introduction: Smoking represents an independent risk factor for the development of chronic pancreatitis (CP). It is well documented that secretion of pancreatic ductal alkaline fluid (which is regulated mostly by the anion exchanger and CFTR currents) is diminished in CP.

Aims & Methods: In this study we would like to understand which smoking has any effects on pancreatic ductal fluid and HCO3\(^{-}\) secretion. Guinea pigs were exposed to cigarette smoke four times a day for 30 min for 6 weeks. The CFTR expression was analysed by immunohistochemistry. Pancreatic ducts were isolated from guinea pig pancreas. Cigarette smoke extract (CSE) was prepared by smoking of 15 cigarettes into 10 ml distilled water by a smoking machine. Intracellular Ca\(^{2+}\) concentration and pH were evaluated by microfluorometry. Flow secretion was measured by video microscopy. CFTR currents were detected by whole cell configuration of patch clamp technique.

Results: Cigarette smoking significantly diminished the expression of CFTR and the fluid and HCO3\(^{-}\) secretion in guinea pig pancreas. CSE dose dependently decreased fluid and HCO3\(^{-}\) secretion in guinea pig pancreatic ducts via inhibition of anion exchanger, Na\(^{+}\)/H\(^{+}\) exchanger and Na\(^{+}\)/HCO3\(^{-}\) cotransporter and also forskolin-stimulated C\(^{2+}\) current of CFTR C\(^{2+}\) channel. CSE incubation altered the pattern of carbobach-induced Ca\(^{2+}\) signal in pancreatic ducts suggesting that smoking could inhibit effects may be regulated by calcium signalling.

Conclusion: Cigarette smoking and CSE inhibits pancreatic ductal fluid and HCO3\(^{-}\) secretion and the activity of the CFTR which may play role in the smoke-induced pancreatic damage. This study was supported by OTKA, MTA, SZTA and UNKPN.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0775 HISTOLOGICAL DIAGNOSIS WITH RAPID ON-SITE EVALUATION IN ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION OF PANCREATIC SOLID LESIONS

T. Hirayama1, K. Harai2, N. Muzio3, S. Hiioka4, T. Kawaahara4, N. Okuno5, Y. Niwa2
1Department Of Gastroenterology, Yodogawa Christian Hospital, Osaka-shi, Japan
2Department Of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan
3Department Of Endoscopy, Aichi Cancer Center Hospital Dept. of Endoscopy, Nagoya, Japan

Contact E-mail Address: hirayamatakahashiyude@yahoo.co.jp

Introduction: Rapid on-site cytologic evaluation (ROSE) for determining the suitability of a specimen often provides high efficacy of endoscopic ultrasound-guided fine needle aspiration (EUS-FNA). In our center, we propose an additional role of ROSE in histological diagnosis aimed at improving diagnostic accuracy.

Aims & Methods: From January 2009 and December 2015, 215 patients were evaluated who underwent both EUS-FNA and surgical resection for pancreatic solid lesions at our university hospital. We retrospectively compared the diagnostic performance of ROSE during EUS-FNA with the final diagnosis confirmed by surgically resected specimens. Diagnosis by ROSE using Diff-Quik\(^{\text{TM}}\) was carried out by both a cytopathologist and an endoscopist.

Results: The median of needle passes required for ROSE was 1 (range, 1–5). Final diagnoses for the 215 lesions were pancreatic ductal adenocarcinoma (PDAC; n = 162), pancreatic ductal adenomatous carcinoma (PDAC; n = 9), pancreatic neuroendocrine tumor (PNET; n = 30), solid pseudopapillary neoplasm (SPN; n = 9), metastatic tumors (n = 4), and acinar cell carcinoma (ACC; n = 1). Primary lesions for metastatic tumors in the pancreas were renal cell cancer (RCC; n = 2), small cell lung cancer (SCLC; n = 1), and colon cancer (n = 1). ROSE could not diagnose 14 cases. When adenocarcinoma (including suspicious SPN) was suspected by ROSE, ROSE diagnosed 94.6% (159/168) of adenocarcinomas. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, ROSE diagnosed 96.4% (27/28) of special type tumor.

Conclusion: All adenocarcinomas suspected by ROSE were malignant tumors. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, diagnostic accuracy of ROSE was 96.4%. Diagnostic accuracy using ROSE is high agreement in final histological diagnosis. It is suggested that ROSE may also be useful for diagnosis of special type tumor.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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P0777 THE NOVEL ROLE OF GASTROKINE, A GASTRIC TUMOR SUPPRESSOR PROTEIN, IN PANCREATIC CARCINogenesis

S. Steiner1, G.M. Seleznik2, T. Reding1, A. Gupta1, D. Lenggenhager3, M. Heikenwälder4, R. Graf1

1Viercasr Gastroenterologische Chirurgie, University Hospital Zurich, Switzerland
2Institute Of Pathology, University Hospital Zurich, Zurich/Switzerland
3Institute Of Virology, Technische Universitât München, Helmholtz Center Munich, Munich/Germany
4Centre, Zurich/Switzerland

Contact E-mail Address: sabrina.steiner@usz.ch

Introduction: Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignanent lesions are limited, which shows an evident need to understand the pathomechanism leading to PDAC and find a suitable marker for early detection. Initial processes in PDAC development involve acinar to ductal metaplasia (ADM) with further neoplastic progression into four pancreatic intraepithelial neoplastic (PanINs) stages. After accumulation of mutations, these lesions will further evolve into PDAC. Gastrokine 1 & 2 (GKN1 & GKN2) are secreted proteins found abundantly in the stomach where they are involved in gastric epithelial homeostasis. While current research focuses on the exploration of tumor-suppressive properties of GKN1 in gastric tumors, nothing is known about GKN function in other organs. A whole genome microarray of KrasG12D Pit1Cre (KC) mice, a mouse model with predisposition to pancreatic cancer, revealed strikingly high gastrokine expression. We will further analyze the involvement of GKNs in the development and progression of PDAC and explore the possibility to use them as biomarkers.

Aims & Methods: We investigated GKN2 expression by qPCR in human and mouse pancreas samples. The presence of GKN1 was verified by western blot and immunohistochemistry (IHC) in mouse pancreas. Mouse pancreatic juice and serum were analyzed by proteomic analysis. To investigate the role of GKNs in carcinogenesis in vivo, we established mouse models by intercrossing KC mice with Gkn1−/− and Gkn2−/− mice respectively. The capacity of acinar cells lacking Gkn1 and Gkn2 to transdifferentiate into ductal lesions in vitro was tested.

Results: GKNs were upregulated during early stages of pancreatic carcinogenesis in mouse and peri-tumoral human pancreas. GKNs were absent in healthy pancreas and tumor tissue. IHC showed specific GKN1 expression in premalignant PanIN lesions, while GKN2 positive cells were also localized in the stroma. ELISA and proteomic analysis in mice confirmed the secretion of GKNs into pancreatic juice. Preliminary results from the first timepoint of analysis showed accelerated tumor development in GKN1−/− and GKN2−/− mice. Wild type acinar cells transdifferentiated into ductal lesions in vitro only in the presence of TGFA. On the contrary, Gkn1−/− and Gkn2−/− acinar cells transdifferentiated spontaneously, and resulted in a higher number of ADMs.

Conclusion: We identified for the first time specific gastrokine expression in pre-neoplastic lesions in human and mouse pancreatic tissue. The secretion into pancreatic juice during carcinogenesis could make gastrokine a potential biomarker for the detection of early pancreatic premalignant lesions. With our mouse models we will provide in vivo evidence on the role of GKNs as potential tumor suppressors in the pancreas.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0778 AUTOPHAGY IS ESSENTIAL FOR PANCREATIC CANCer DEVELOPMENT IN A NEW HUMANIZED GENETICALLY-MODIFIED ADULT MOUSE MODEL

C. Tang1, X. Jia1, R. Luo2, Q. Tu1, X. Zhao2

1Gastroenterology, West China Hospital, Sichuan University, Chengdu/China
2Kunning Institute of Zoology, Kunming/China

Contact E-mail Address: jiaxintong22@gmail.com

Introduction: Pancreatic cancer is one of the deadliest malignancies and there are no effective therapies for it. According to a search of The Cancer Genome Atlas (TCGA), alterations in Kirsten rat sarcoma (KRAS), Tumour protein (TP)53, (lentiviruses-KTCC) were determined by western blot. The protein levels of ATG7, LC3, LAMP-1 and decreased P62 protein was observed in the pancreatic tumour tissues. In vitro, the protein level of LC3 in the lentiviruses-KTCC infected primary cells was increased by 6 times when compared with that in the control primary cells (P = 0.0104).

Conclusion: An adult mouse model of pancreatic cancer can be generated by altering Kras, Tp53, Cdkn2a and Cdkn2b genes. Besides, increased autophagy was measured during the development of pancreatic cancer in vivo. These findings provide considerable insight into the role of autophagy in pancreatic cancer and autophagy inhibition might be a potential target in treating pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0779 HIPEC IN GI CANCERS. IS HYPERTHERMIA FRIEND OR FOE?

V. Cesa1, A. Sukovas2, S. Paskauska2, G. Barauskas3, Z. Dambrauskas3, A. Gulbina2

1Department Of Surgery, Lithuanian University of Health Sciences, Kaunas/Lithuania
2Department Of Obstetrics And Gynaecology, Lithuanian University of Health Sciences, Kaunas/Lithuania
3Institute For Digestive Research, Lithuanian University of Health Sciences, Kaunas/Lithuania

Contact E-mail Address: gailbanta@gmail.com

Introduction: Hyperthermia as a positive additive to chemotherapy is described in multiple studies. Despite controversial results hyperthermic intraoperative chemotherapy (HIPEC) is a standard treatment option for some types of gastrointestinal cancer that invades peritoneum. However, the results of clinical data and basic research are uneven. Moreover, there is a lack of fundamental knowledge about additive cytotoxic effect of hyperthermia on cancer cells of different origin.

Aims & Methods: Our aim was to analyse gastrointestinal cancer cell response to various hyperthermia levels, accompanied by chemotherapy, in a manner of cell cytotoxicity, apoptosis and intracellular cisplatin concentration. Cancer cell lines of gastric (AGS), pancreatic (T4M4) and colorectal (Caco-2) origin were exposed to cisplatin and different temperature regimes (37°C to 45°C) either in isolated manner, or in combination. Cells were treated for one hour, mimicking HIPEC timing in clinical setting. The intracellular concentration of cisplatin was measured immediately after experiment by mass spectrometry. 48 hours later changes of cell viability and apoptosis rates depending on temperature in addition to cisplatin treatment were evaluated by MTT and Annexin/AAD flow cytometry respectively.

Results: The response of AGS to hyperthermia was as implied. Viability of the cells was gradually decreasing by raising the temperature. Caco-2 cells had no significant response to temperature rise up to 42°C, but at 43°C viability dropped by 14% constantly remaining at higher temperatures. T4M4 cells acted in unprece-dented manner, whereas decreasing viability by 30% in the interval between 37°C to 42°C and 20% increase at 43°C was observed. Following simultaneous exposure to hyperthermia and cisplatin we observed no additive temperature alteration in interval between 37°C to 45°C. However, at particular temperature regimes, we observed temporary proliferation increase: AGS – at 42°C (33%); T4M4 – at 43°C (32%). Higher temperatures dramatically inhibited AGS – by 70%, T4M4 - by 76%. There was the linear pattern of slight decrease (up to 26% at 45°C) of viability in Caco-2 cells. Isobologram analysis of combined hyperthermia and cisplatin treatment revealed strong antagonism of hyperthermia and chemotherapy in all analyzed cell lines. Nevertheless, hyperthermia of 43°C in addition to cisplatin promoted apoptosis of AGS cells by 33%, Caco-2 by 26%, T4M4 by 19%. Moreover, application of hyperthermia (43°C) could contribute to increase of intracellular cisplatin concentration by 30%, 20% and 18% AGS, Caco-2 and T4M4 cells respectively.

Conclusion: Our results indicate that there is no linear contribution of hyperthermia and chemotherapy in all analyzed cell lines. Therefore, in clinical setting it should be applied individually, regarding cancer type. Moreover, particular temperatures can worsen the treatment and increase cancer cell growth.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0780 CACHEXIA INVOLVEMENT IN THE LOCAL SPREAD OF PANCREATIC DUCTAL ADENOCARCINOMA

L. Petrescu1, R. Suhaorschi2, I. Rusu1, C. Pojoga3, A. Riecan3, A. Riecan1

1Dept. Of Internal Medicine, Gastroenterology, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca/Romania
2Institute For Digestive Research, Lithuanian University of Health Sciences, Kaunas/Lithuania
3Dept. Of Pathology, Octavian Fodor Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca/Romania

Contact E-mail Address: lpetrescu@clinica.ucv.ro

Introduction: For the past decades, cachexia has been recognized as a major cause of morbidity and mortality in patients with malignant tumors, and the complete understanding of its mechanisms is a priority. In the gastrointestinal tract, cachexia is often associated with the presence of cytokines promoting inflammation, immune cell infiltration, immune cell exhaustion, and cell death. In addition, the presence of autophagic protein LC3, autophagy related protein 7 (ATG7), LAMP-1 and decreased P62 protein was observed in the pancreatic tumour tissues. The role of cachexia in the progression of pancreatic cancer has not been fully elucidated.

Aims & Methods: We aimed to investigate autophagy response in a new humanized genetically-modified adult mouse model of pancreatic cancer. To induce pancreatic cancer, lentiviruses expressing oncogenic Kras (lentiviruses-KTCC) were injected into pancreas of 9-week old adult mouse. Autophagy was detected by immunofluorescence staining for autophagic protein light chain-3 (LC3)-3 and Lysosomal-associated membrane protein 1 (LAMP-1). Additionally, the expression of autophagic protein LC3, autophagy related protein 7 (ATG7), LAMP-1 and P62 were determined by western blot.

Results: Mice developed pancreatic cancer ten weeks after lentiviruses-KTCC injection, both in macrography and histopathology analysed. The mRNA levels of autophagic genes Atg7 and Atg12 were up regulated. In addition, the LC3 and LAMP-1 positive area increased significantly. Co-localization of LC3 and LAMP-1 was found in pancreatic tumour sections. Moreover, the increased protein levels of ATG7, LC3, LAMP-1 and decreased P62 protein was observed in the pancreatic tumour tissues. In vitro, the protein level of LC3 in the lentiviruses-KTCC infected primary cells was increased by 6 times when compared with that in the control primary cells (P = 0.0104).

Conclusion: An adult mouse model of pancreatic cancer can be generated by altering Kras, Tp53, Cdkn2a and Cdkn2b genes. Besides, increased autophagy was measured during the development of pancreatic cancer in vivo. These findings provide considerable insight into the role of autophagy in pancreatic cancer and autophagy inhibition might be a potential target in treating pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Cachexia is a multifactorial syndrome, characterized by the loss of skeletal muscle mass which is not fully reversible by nutritional support. Activin play a dominant role in the development and progression of cachexia and also in tumor cell growth in pancreatic adenocarcinoma via non-SMAD (MAPK, PI3K/Akt) pathways. Cachexia might be a keypoint in pancreatic ductal adenocarcinoma (PDAC) pathway. Ezrin pathway as a intracellular cytoskeleton biomarker is related to the cytoskeleton involvement are lacking and their relationship with the cachexia is not known. Ezrin is involved in intracellular signaling and adhesion, by linking in the PI3K/Akt pathways.

Aims & Methods: Our goal was to assess the significance of activin protein expression in PDAC related to the clinical stage and survival. There were included patients with histological proven of adenocarcinoma (n = 115) and a matched control group (n = 124). The plasma levels of activin A were analyzed using western blot. The t test was used to determine the differences between the two groups, Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

Results: Activin was overexpressed more frequently in PDAC compared to controls (p = 0.001), and has been closely related to advanced clinical stage (stage III-IV), tumor size, location and with the presence of metastasis (p < 0.05). Activin expression was higher in patients with type 2 diabetes (p = 0.04). No relationship between activin level and the patients age, sex or tumor size, was noted. Patients with activin high expression had a shorter survival time than PDAC patients with activin low expression (Log-rank = 4.35, p = 0.03).

Conclusion: Activin pathway is related to cachexia and the local spread of PDAC, metastasis, the presence of diabetes and survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: andreadaseicane@gmail.com

Introduction: Intracellular cytokine marker is overexpressed in pancreatic ductal adenocarcinoma (PDAC) might be a key point in its poor outcome. Reliable biomarkers estimating in the cytokine involvement are lacking and their relationship with the cachexia is not known. Ezrin is involved in intracellular signaling and adhesion, by linking in the PI3K/Akt pathways.

Aims & Methods: The goal is to assess the significance of ezrin protein expression in PDAC related to the clinical stage and survival. There were included patients with histological proven of adenocarcinoma (n = 51) and a matched control group (n = 51). The plasma levels of ezrin were analyzed using western blot. The t test was used to determine the differences between the two groups, Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

Results: The ezrin was overexpressed more frequently in PDAC compared to controls (p = 0.009 and p = 0.05). Ezrin expression has been closely related to advanced clinical stage (p = 0.03), but not with the presence of metastasis. No relationship between ezrin levels and the patients age, sex or tumor size and location of tumor was found. The survival of patients with high or low levels of ezrin expression was similar.

Conclusion: Ezrin pathway as a intracellular cytokine biomarker is related to the local spread of PDAC, but not in metastasis or survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: kaoru_1238@yahoo.co.jp

Introduction: FOLFIRINOX (FFX) or nab-paclitaxel plus gemcitabine (GnP) and standard regimen in patients with advanced pancreatic cancer. However, chemotherapy can impair quality of life (QoL) due to adverse events. Because the life expectancy of this population is typically short, QoL is as important as the actual length of life.

Aim: The aim of this study was to assess QoL during chemotherapy in patients with advanced pancreatic cancer. Twenty-one Japanese patients with unrespectable advanced pancreatic cancer and performance status 0–1 were included in this study. All patients were treated with FFX or GnP as first-line chemotherapy. QoL was assessed using the European Organization for Research and Treatment for Cancer Quality of Life Core Questionnaire (EORTC QLQ-C30), and anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS) at baseline and 2 weeks and every month after initiation of chemotherapy. Changes between score at baseline and median score after chemotherapy were compared using Wilcoxon signed-rank test. Continuous variables are presented as median (range).

Results: Thirteen male and 8 female patients were included, with a median age of 65 (59–72) years and BMI of 21.2 (16.0–26.2) kg/m2. The chemotherapy regimens were FFX in 5 men and 2 women, modified-FFX in 4 men and 4 women, and GnP in 4 men and 2 women. Eight patients took opioids for pain, and 4 received celiac plexus neurolysis. Regarding global health status (GHS) and functional scale in QLQ-C30, baseline scores were: GHS, 50 (17–92)%; physical, 87 (53–100)%; role, 83 (33–100)%; emotional, 67 (33–100)%; cognitive, 83 (33–100)%; and social, 67 (11–100)%. After chemotherapy, role function scale was decreased significantly (p = 0.04), and nausea (p = 0.02) and diarrhoea (p = 0.049) were more frequently observed, while pain was relieved (p = 0.002). In analysis according to patients’ background, a lot of evaluation in patients with BMI < 21 kg/m2 tended to be worse than in those with BMI ≥ 21 kg/m2 after chemotherapy. Regarding HADS, at baseline, 5 patients reported depression, 7 borderline depression, 5 anxiety requiring intervention, and 5 anxiety requiring follow-up. There were no significant changes in HADS after chemotherapy.

Conclusion: In patients with advanced pancreatic cancer, GHS and mental status had already deteriorated at baseline. Although pain scale might be improved due to analgesic treatment, role function scale, nausea and diarrhoea became worse during chemotherapy. In particular, QoL tended to deteriorate in lean patients. These results indicate that pain as well as QoL factors should always be considered to manage chemotherapy properly in patients with advanced pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.
treated by EUS-CPN. Clinical information was obtained retrospectively from the medical charts and patient reporting site, until the patient died or was lost to follow-up. Between November 2014 and March 2017, 70 patients with PC pain were enrolled. We performed EUS-CPN by injection of 3 ml of bupivacaine mixed with 15 ml of pure ethanol on the celiac plexus and somatic and visceral plexus using a 22G endoscopic ultrasound-guided fine needle aspiration needle. Treatment response was assessed by self-reported pain relief and change in the daily dose requirement of morphine. Treatment response was defined as to decrease or stay of the same amount of morphine consumption after EUS-CPN, or achieve morphine dosage level within 4 weeks after EUS-CPN if morphine consumption temporarily elevated because of the delayed response of EUS-CPN. Pain evaluation was conducted at 1 week, 4 weeks after EUS-CPN and tumor disease progression. Response rate was 81.4% (57/70). The median duration of pain relief was 4.0 months. 10 patients required a second EUS-CPN due to pain relapse, and 90% (9/10) showed response to the repeat procedure. Of the 44 patients who showed response to the initial EUS-CPN during chemotherapy, the median time to relieve the diagnosis was 3.4 months in patients who showed diagnosis progression in the CRP level elevation (16/44: 36.3%). Between the response group and no-response groups, there were significant differences in the prevalences of liver metastasis (47 vs. 92%, P = 0.02), stage (12 vs. 38%, P = 0.02) and lymph node metastasis (56 vs. 92%, P = 0.015), and in the serum levels of CEA (median: 6.7 vs. 17.3 ng/ml, P = 0.017), CA19-9 (median: 617.2 vs. 3519 U/ml, P = 0.009), CRP (median: 0.61 vs. 1.91 mg/dl, P = 0.029) and albumin (median: 3.4 vs. 3.8 g/dl, P = 0.029). Univariate analysis revealed a significantly smaller percentage of patients with CRP level elevation over 3.0 mg/dl from baseline within 4 weeks after EUS-CPN (11 vs. 38%, P = 0.01). The overall survival after EUS-CPN was also significantly longer in the response group as compared to the no-response group (median: 5.8 vs. 3.1 months). Conclusion: Our study demonstrated that EUS-CPN had therapeutic effect on tumor disease progression and aggressiveness, indicative of higher CRP, CA19-9 and lower albumin levels, which is a promising approach to cancer patients with inoperable PC. It is important to identify the potential mechanisms of the therapeutic effect of EUS-CPN and explore its application in the management of unresectable PC as symptoms are often unrecognized. Data on the association of pain and symptoms was collected at the diagnosis of cancer to improve patient counseling and treatment. The association between presentation symptoms, the presence of obesity and alcohol drinking and survival was investigated. Although the relationship between nutritional status and survival has been well documented, the results of the current study were not statistically significant. Such results may be due to the small sample size, different patient and tumor characteristics, or other unmeasured factors. Therefore, further studies with larger patient samples are needed to investigate the potential role of nutritional status on survival in patients with PC. Results: In 434 PC patients the mean diagnostic delay was 4 months (95% CI 3.6–4.4). Jaundice was the leading presentation symptom in 74 (17%), weight loss in 37 (8.5%), and 105 (24%) reported new-onset diabetes. Diagnosed was incidental in 24 cases (5.5%) or related with undetermined complaints in other 24 (5.5%). The diagnostic delay was significantly shorter for patients with jaundice (mean 1.1 months) compared to those with pain (3.6), new-onset diabetes (3.0) and weight loss (5.6). PC was suspected in 66% of patients after the diagnosis, smoking and previous diabetes were not associated with presentation symptoms or delay, but obese patients (4.3 vs 3.4 months; P = 0.03) and those drinking alcohol (4.5 vs 3.6 months; P = 0.03) had a longer delay. The mean diagnostic delay was of 4.5 months in patients with distant metastases (HR 2.1), and locally advanced resectable disease (P = 0.02). Patients presenting with jaundice had distant metastases at diagnosis in only 18% of cases compared to 45% of other presentations (P = 0.00001). The mean survival was 11.8 months in the 395 patients with available follow-up. At Kaplan-Meier and Cox-proportional regression analysis age at diagnosis (HR = 1.02 per year) and metastatic stage at diagnosis (HR 2.5), but not the different presentation symptoms, or the diagnostic delay were associated with worse survival. Conclusion: Different presentation symptoms, the presence of obesity and alcohol consumption, the diagnostic delay, which is associated with worse survival, were significant predictors of worse survival in patients with PC. Different symptoms may indicate different stages of the disease at diagnosis. However, symptoms and delay do not seem to affect prognosis. These results suggest that diagnosis at the preclinical stage is necessary to change disease prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0785 PLASMA DNA GENOTYPING USING DIGITAL PCR FOR SURVEILLANCE OF PANCREATIC CANCER IN HIGH-RISK POPULATIONS

Y. Minokami1, Y. Ono2, K. Kasakusa3, K. Koizumi4, T. Okada1, J. Sasaajima5, M. Yamada6, S. Ashahra7, K. Kabukowo8, H. Maguchi9
1Department Of Medicine, Asahikawa Medical University, Asahikawa/Japan
2Center For Clinical And Biomedical Research, Sapporo Higashi Tokushukai Hospital, Sapporo/Japan
3Center For Gastroenterology, Sapporo Kamakura General Hospital, Kamagawa/Japan
4Department Of Gastroenterology, Chiba City Hospital, Chiba/Japan
5Department Of Gastroenterology, Chiba Tokushukai Hospital, Chiba/Japan
6Department Of Gastroenterology And Hepatology, Hokkaido University Graduate School of Medicine, Sapporo/Japan
7Center For Gastroenterology, Teine-Keijinkai Hospital, Sapporo/Japan

Contact E-mail Address: mizu@asahikawa-med.ac.jp

Introduction: Cell-free DNA (cfDNA) shed from tumors into the general circulation offers opportunities to monitor oncogenic evolution and metastatic progression. The level of cfDNA is generally higher in cancer patients than healthy individuals; however, detecting the rare fraction of circulating tumor-derived DNA (ctDNA) in patient plasma remains a technical challenge. Initial efforts have been made to quantify the ctDNA using conventional PCR, but the low sensitivity of this approach has limited its feasibility as a routine clinical test. New technologies for quantifying ctDNA are now sensitive enough for reliable application in the clinic (ref 1). Pancreatic ductal adenocarcinoma (PDAC) is one of the most lethal human malignancies. Intraductal papillary mucinous neoplasms (IPMNs) are precursors of PDAC and provide models of neoplastic progression from a benign intraductal tumor through increasing grades of dysplasia to PDAC, and mutations in KRAS and/or GNAS mediate key signaling during early development of the tumors (ref 2). Better prediction of histological grades using non-invasive tests is urgently needed for IPMN patients to make appropriate management decisions. Aims & Methods: In the current study, we sought to determine if quantification of major driver mutations such as KRAS and GNAS in the plasma cfDNA could serve as biomarkers for diagnosis of localized PDACs and risk stratification of IPMNs. We first established protocols for absolute quantification of very low concentrations of the target mutant alleles using a Bio-Rad QX200 droplet digital PCR platform (ddPCR). Using this novel protocol, feasibility of the assay was tested. At present, >92% and 145 IPMN patients with either benign or malignant disease have been recruited (UMIN000012810).

Results: Although ddPCR-based assays have rather high precision and sensitivity (0.01%), limited plasma cfDNA yields in patients with resectable PDACs (Stage 0–II). Limited plasma cfDNA was often obtained due to "suboptimal protocol" and patient factors (e.g., smoking status, undetermined symptoms, or previous invasive procedures), which are associated with missing targets at very low abundance during compartmentalization could be effectively overcome by pre-amplification, and the sensitivity of mutant KRAS detection was greatly improved (80.3%) relative to a standard protocol (48.0%). In IPMNs, mutant KRAS/GNAS alleles were not robustly identified in 15.1% (n = 3/19) plasma, mutant KRAS/GNAS alleles were detectable in plasma cfDNA earlier than the detection of invasive PDACs by imaging. Conclusion: By setting an appropriate protocol for ddPCR-based cfDNA assay, serial blood sampling allows physicians to conduct real-time detection and monitoring of tumor genomic alterations (ref 4). Although larger validation studies are required before introduction into the clinic, early results of the study indicate that our approach allows the detection of localized early-stage disease and offers an alternative tool to monitor IPMN progression non-invasively.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
The median follow-up period was 7.4 months (range 1.5–14.9 months); the objective response rate and treatment-related adverse events (AE) of patients undergoing mPC treatment from February 2016 were evaluated. Gemcitabine and nab-paclitaxel were used as the first-line chemotherapy for metastatic pancreatic cancer patients. However, only 2% of the MPACT trial study population was Asian, and other researches on this combination therapy are required. Therefore, we investigated treatment efficacy and safety of gemcitabine plus nab-paclitaxel combination therapy for mPC treatment in Korean populations.

**Aims & Methods:** Total 66 metastatic pancreatic cancer patients treated with gemcitabine (1000mg/m²) and nab-paclitaxel (125mg/m²) regimen (on day 1, 8, 15 of a 28-day cycle) as the first line chemotherapy from February 2016 were identified using the Severance Hospital Pancreatic Cancer Registry. Treatment efficacy (overall survival (OS), progression-free survival (PFS), objective response rate) and treatment-related adverse events (AE) of patients (occurrence rate, severity grade and dose-intensity) were analyzed.

**Results:** The median follow-up period was 7.4 months (range 1.5–14.9 months); during this period, 21 (31.8%) patients died. Median cumulative dose of gemcitabine and nab-paclitaxel were 13,000 mg/m² and 1,487.5 mg/m². The median OS, PFS and objective response rate were 12.0 months (95% confidence interval [CI] 9.515–14.485), 7.8 months (95% CI 5.021–10.579) and 48.5%, respectively. The incidence of neurotoxicity was 54.5% and 12 (18.2%) patients experienced grade ≥ 3 neurotoxicity. 30 (45.5%) patients showed grade ≥ 3 neutropenia and 10 (15.2%) patients had febrile neutropenia. Grade ≥ 3 gastrointestinal AE was observed in 11 (16.7%) patients and 26 (42.4%) patients experienced dermatologic AE such as alopecia and skin eruption. About 59% of patients experienced treatment delays due to adverse events. Dose reduction was performed in 39 (59.1%) patients and 14 patients experienced treatment cessation due to severe AE.

**Table 1:** Treatment efficacy and treatment-related adverse events of gemcitabine with nab-paclitaxel

<table>
<thead>
<tr>
<th>Variables</th>
<th>Duration of chemotherapy</th>
<th>Efficacy of Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Cycles (28-day schedule)</td>
<td>Cessation of administration due to AE</td>
</tr>
<tr>
<td>5 (2–12)</td>
<td>Duration, days</td>
<td>n (%)</td>
</tr>
<tr>
<td>141 (32–435)</td>
<td>Efficacy of Chemotherapy</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Overall survival - months (95% CI)</td>
<td>Adverse events</td>
<td>Cessation of administration due to AE</td>
</tr>
<tr>
<td>12.0 (9.515–14.485)</td>
<td>Peripheral neuropathy</td>
<td>n (%)</td>
</tr>
<tr>
<td>7.8 (5.021–10.579)</td>
<td>Grade ≥ 3 neuropathy</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>36 (54.5%)</td>
<td>Grade ≥ 3 Neutropenia</td>
<td>Cessation of administration due to AE</td>
</tr>
<tr>
<td>12 (18.2%)</td>
<td>Febrile neutropenia</td>
<td>n (%)</td>
</tr>
<tr>
<td>30 (45.5%)</td>
<td>Administration of G-CSF</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>10 (15.2%)</td>
<td>Grade ≥ 3 adverse event</td>
<td>14 (21.2%)</td>
</tr>
<tr>
<td>11 (16.7%)</td>
<td>General weakness</td>
<td>32 (48.5%)</td>
</tr>
<tr>
<td>32 (48.5%)</td>
<td>Dermatologic adverse event</td>
<td>28 (42.4%)</td>
</tr>
<tr>
<td>28 (42.4%)</td>
<td>Dose reduction due to AE</td>
<td>5 (2–12)</td>
</tr>
<tr>
<td>Gemcitabine</td>
<td>nab-paclitaxel</td>
<td>21 (31.8%)</td>
</tr>
<tr>
<td>21 (31.8%)</td>
<td>Delay of administration due to AE</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>39 (59.1%)</td>
<td>Cessation of administration due to AE</td>
<td>14 (21.2%)</td>
</tr>
</tbody>
</table>

**Conclusion:** These results suggest that gemcitabine and nab-paclitaxel combination therapy is effective for metastatic pancreatic cancer treatment in East-Asian population group. Similar to previous studies, this combination therapy showed remarkable neurotoxicity and myelosuppression. Careful monitoring and proper management during chemotherapy is required.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**References**


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**P0788 HENT1 & DPD EXPRESSION IN EUS-FNAB SAMPLES OF PANCREATIC DUCTAL ADENOCARCINOMA: TECHNICAL FEASIBILITY AND PROGNOSTIC SIGNIFICANCE OF GEMCITABINE-SI-BASED CHEMORADIOThERAPY**

R. Yamada1, S. Isaji2, H. Inoue1, A. Hayasaki3, Y. Murata1, M. Kishiwada1, M. Miura1, T. Takeuchi1, T. Harada1, N. Yoshizawa1, H. Okuse1, T. Sakuno1, M. Nakamura1, M. Katsurahara3, Y. Hamada1, K. Tanaka3, N. Horiki1, R. Takel1

1Hepatobiliary Pancreatic And Transplant Surgery, Mie University Graduate School of Medicine, Mie
2Gastroenterology And Hepatology, Me University Graduate School of Medicine, Tsu/Japan
3Hepatobiliary Pancreatic And Transplant Surgery, Me University Graduate School of Medicine, Tsu/Japan

**Introduction:** Endoscopic ultrasound-guided fine-needle aspiration biopsy (EUS-FNAB) samples to be a useful and safe method for tissue confirmation of malignancy. This method has the risk of tumor cell dissemination along the needle track or within the peritoneum by preoperative EUS-FNA.

**Aims & Methods:** The aim of our study was to estimate the risk of peritoneal recurrence and the impact on long-term outcomes by preoperative EUS-FNA in resected pancreatic cancer. The records of patients diagnosed with pancreatic cancer who underwent curative resection between 2009 and 2013 were reviewed retrospectively. A total of 394 patients were included: 78 patients with preoperative EUS-FNA (EUS-FNA group) and 316 without preoperative EUS-FNA (Non-EUS-FNA group). Peritoneal recurrence was diagnosed based on image findings.

**Results:** Median length of follow-up was 23 months (range 1–94 months). A total of 82 patients had peritoneal recurrence; 54.6% (27/8) in EUS-FNA group vs. 28.2% (89/316) in Non-EUS-FNA group (P = .026). Cancer-free survival and overall survival were not different between the groups: median cancer-free survival in EUS-FNA group was 10.8 months compared with 10.6 months in Non-EUS-FNA group (P = .83), and median overall survival in EUS-FNA group was 56.4 months compared with 56.7 months in Non-EUS-FNA group (P = .93).

**Conclusion:** Preoperative EUS-FNA for pancreatic cancer was not associated with an increased rate of peritoneal recurrence and mortality. Our study suggests that EUS-FNA is a safe method for obtaining tissues of pancreatic masses.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
hENT1-positive patients (MST: 25 versus 25, respectively). We suspect that genetic factors play a role in this observed variability.

Aims & Methods: In the present study, we evaluated hENT1 and dihydroxypropine dehydrogenase (DPD: enzyme involved in the degradation of tegafur) expression in EUS-FNA samples for evaluating and predicting the clinical efficacy of preoperative 5-fluorouracil (5-FU) (n=4) or paclitaxel (n=5) obtained prior to GS-CRT administration. In total, 95 formalin-embedded PDAC specimens were evaluated. In the samples determined to have sufficient material remaining following cytological/histological analysis (n = 76), hENT1 expression was evaluated via immunohistochemistry (IHC) examination to assess the potential clinical impact of hENT1. A further assessment of DPD expression was carried out in those samples determined to have sufficient material remaining (n = 58).

Results: By reusing the EUS-FNA specimens after diagnosis of PDAC, hENT1 and DPD expression could be successfully assessed in 79.2% (76/95) and 61.1% (58/95) of these cases, respectively. In those sufficient for hENT1 testing, 67.1% (51/76) were found to be positive. And in those sufficient for DPD testing, 27.6% (16/58) were found to be positive. MST was significantly longer in hENT1-positive (82.6 months) compared with negative patients (P = 0.015). As for DPD, MST was significantly longer in DPD-negative patients (33 versus 14 positive; P < 0.001). In the multivariate model involving pretreatment clinical factors (age, sex, tumor location, tumor size, UICC-T classification, hENT1 expression, and DPD expression) and the clinical response after GS-CRT (response of GS-CRT, reduction rate in serum CA19-9 level, and metastasis status after GS-CRT), only hENT1 expression (HR = 3.511; 1.545–7.981, P = 0.003) and DPD expression (HR = 0.232; 0.108–0.496, p < 0.001) were found to be significant independent prognostic factors.

Conclusion: hENT1 and DPD expression observed in EUS-FNA samples can be useful clinical predictors in PDAC cases treated with GS-CRT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0790 STATIN USE DECREASES THE RISK OF PANCREATIC CANCER OCCURRENCE: A META-ANALYSIS
I. Archibugi1, P. G. Arcidiacono2, G. Delle Fave3, G. Capuano3
1Digestive & Liver Disease Unit, S. Andrea Hospital - University of Rome "La Sapienza", Rome, Italy
2Pancreato-biliary Endoscopy And Endosonography Division, Pancreas Translational & Clinical Research Center, San Raffaele Scientific Institute IRCCS, Vita-Salute San Raffaele University, Milan, Italy

Contact E-mail Address: livia.archibugi@hotmail.it

Introduction: Statins are widely prescribed both for primary and secondary prevention of coronary artery disease and for the treatment of dyslipidemia. Several studies evaluated the association between statin use and the onset of pancreatic cancer (PDAC) in order to evaluate a possible chemopreventive effect, with inconclusive results. Previous systematic and meta-analytic researches published until 2012 did not find any association to the risk, but the lastest years new studies with interesting results have been published. Survival Analysis: The aim of our study was to conduct a new systematic review and meta-analysis to clarify this association. A comprehensive literature search of PUBMED for articles published up to November 2016 and abstracts presented between 2012–2016 at the DDW and ASCO conventions was carried out. Eligible studies were case-control studies (CC), cohort studies (C) and randomized controlled trials (RCTs) assessing the effect of statin use on the risk of PDAC, compared with placebo or no treatment. Studies had to report Odds Ratio (OR), Relative Risk (RR), or Hazard Ratio (HR), estimates with 95% confidence interval (CI), or provide sufficient data for their calculation. Pooled adjusted ORs with corresponding 95% CIs were calculated using random effect model. Publication bias was assessed through Begg and Mazumdar test. Heterogeneity was assessed by means of the I² Value.

Results: A total of 21 studies (12 CC, 6 C, 3 RCTs) contributed to the analysis. A total of 11383 PDAC patients and 290184 controls were included. The pooled incidence of PDAC was 0.27% (3161/1167130) among statin users and 0.44% (8144/1835153) among the non-users. The overall pooled result for all studies evaluated a reduced risk of PDAC among statin users (OR 0.62; 95% CI 0.56–0.69; p < 0.001), compared to non-statin users. A sub-group analysis of the protective effect was limited to case-control studies (OR 0.72; 95% CI 0.56–0.93) and not to cohort (OR 0.93; 95% CI 0.73–1.19) nor RCTs (OR 1.04; 95% CI 0.90–1.21). No publication bias was found.

Conclusion: This is the first meta-analysis showing that statins exert a protective effect on the incidence of PDAC. Further studies taking into account statin dose, duration and subgroup of patients are needed in order to clarify the association.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this study, we aimed to overcome the subsampling issue and to develop a sequencing framework for the quantification of rare tumor cell-derived mutant alleles for non-invasive diagnosis of gastrointestinal cancer. To establish more reliable ddPCR protocol for quantification of low-frequency alleles within a limited cfDNA pool, two-step multiplex ddPCR targeting eight cancer-relevant mutant KRAS variants was examined using a Bio-Rad QX200 droplet digital PCR platform. Plasma samples from patients with colorectal (n = 10) and pancreatic cancer (n = 9) were evaluated, and cfDNA from healthy volunteers (n = 30) was utilized to calculate reference intervals.

Results: Limited cfDNA yields in patients with resectable colorectal and pancreatic cancers did not meet the requirement for efficient capture and quantification of rate mutant alleles by ddPCR. To overcome the subsampling issues and achieve better assay specificity, we attempted pre-amplification of plasma cfDNA using primers flanking KRAS exon 2 as the first-step PCR. Eight pre-amplification cycles followed by a second-run ddPCR were sufficient to approximate 5000–10,000 target alleles/ng cfDNA, resolving the subsampling issue; furthermore, the signal-to-noise ratio for rare mutant alleles against the massive background presented by the wild-type allele was significantly enhanced. The cut-off limit of reference intervals for mutant KRAS was determined to be ~0.09% based on samples from healthy individuals.

Conclusion: The modification introduced in the ddPCR protocol facilitated the quantification of low-copy alleles carrying driver mutations, such as oncogenic KRAS, in localized and early-stage cancers using small blood volumes, thus offering a minimally invasive modality for timely diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0792 ANA0LYSIS OF CLINICAL PREDICTIVE FACTORS ASSOCIATED WITH SECOND-LINE CHEMOTHERAPY FOR THE PATIENT OF ADVANCED PANCREATIC CANCER J.E. Lee1, H.S. Lee2, M.J. Chung2, J.Y. Park2, S. Bang2, S.W. Park2, S.Y. Song3
1Gastroenterology, Yonsei University, Seoul/Korea, Republic of
2Department Of Internal Medicine, Yonsei University College of Medicine, Seoul/ Korea, Republic of
3Contact Email Address: chelle884@yuhs.ac

Introduction: Benefit of second line chemotherapy (SL) after failed first-line che-motherapy for advanced pancreatic cancer has not yet been established. We intend to identify prognostic factors and ultimately devise a model of clinical parameters for decision of SL versus basic supportive care (BSC) after failure of FL chemotherapy.

Aims & Methods: 408 patients who received gemcitabine based-first-line chemothera-phy for advanced pancreatic adenocarcinoma at Yonsei University Hospital between January 2010 and December 2014 were retrospectively reviewed. Significant clinical parameters regarding second line related survival with regard to predictive factors were investigated.

Results: 161 of 408 (39.5%) received SL therapy. Median overall survival from the beginning of SL (OS2) was 20.0 weeks (14.0–34.0). Significantly more SL patients presented higher body mass index (BMI) (p < 0.001) and ECOG 0–1 (p = 0.003) at diagnosis, lower rate of lung metastasis (p = 0.001) and longer duration of FL (p < 0.001). More SL patients had received gemcitabine-based concurrent chemo-radiotherapy (CCRT) (p = 0.029) compared to FL only patients. Prognostic significance of OS2 to B2 were BMI at diagnosis (p = 0.019), HR = 0.870), duration of FL therapy (median duration 16weeks (8.0–28.0) p = 0.004, HR = 0.986), presence of peritoneal metastasis (p = 0.002, HR1.732) at diagnosis, malignant thrombotic event during firstline chemotherapy (p = 0.001, HR = 0.428). Experience of CCRT was also a significant prognostic factor (p = 0.001, HR = 2.245); initial staging of the CCRT group was TNM stage3, which might be the ultimate factor impacting OS2.

Conclusion: Study suggests that SL chemotherapy may be beneficial for patients with longer duration of FL chemotherapy, higher BMI at diagnosis, patients without peritoneal metastasis at diagnosis, no malignant thrombosis event during chemotherapy and patient initially TNM stage3, who received Gemcitabine based CCRT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
8. Kim ST, Choi YJ, Park, Porto Medical School, Porto/Portugal

1Gastroenterology, Hospital São João, Porto/Portugal
2Gastroenterology, Hospital Central do Funchal, Funchal/Portugal
3Centro Hospitalar São João, Porto/Portugal
4Pathology Department Centro Hospitalar São João, Porto/Portugal
5Centro Hospitalar De São João, Porto/Portugal

Contact Email Address: ruilopesgaspar@gmail.com

Introduction: Rapid on site evaluation for endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) of the pancreas provides immediate information regarding cellular adequacy, avoiding repeated procedures.

Aims & Methods: The aim of this study was to evaluate the impact of ROSE in EUS-FNA of solid pancreatic lesions. Retrospective study of consecutive EUS- FNA of solid pancreatic lesions, in a tertiary center, between 2012 and 2016. A total of 259 EUS-FNA of patients with advanced pancreas adenocarcinoma who could benefit from second-line EUS-FNA (with and without ROSE). Beyond ROSE in the first puncture, higher levels of Ca 19.9 (199 vs 10 g/mL, p = 0.001), size of the lesion (36.1 vs. 29.8 mm, p < 0.001), invasion of adjacent structures (64.6% vs 43%) and lymph node and malignancy (73.2% vs 25.4%, p < 0.001) were associated with EUS-FNA diagnostic accu-racy. In multivariate analysis, ROSE (p = 0.001) and the size of the lesion (p = 0.023) were independent predictors of adequate diagnostic samples. In this study, ROSE in the first attempt (EUS-FNA) improved the diagnostic yield in solid pancreatic lesions and should be consid-ered whenever possible in the first attempt, until an overall adequate diagnostic yield (>=80%) is achieved.

Disclosure of Interest: All authors have declared no conflicts of interest.

Tuesday, October 31, 2017 09:00-17:00
Endoscopic Ultrasound Imaging and EUS- FNA

1Laboratoire Matieres et Systemes Complexes, Paris/France
2Nouvel Hôpital Civil, Strasbourg/ France
3Institut Européen Georges Pompidou, Dept. de Gastroenterologie, Paris/Grenoble
4Inserm U797, Laboratoire Imagerie de l’angiogenèse, Paris/ France
5Anatomo-pathologie, Nouvel Hôpital Civil, Strasbourg/ France
6IRCAD, Research Institute against Cancer of the Digestive System, Strasbourg/ France

Contact Email Address: gabriel.rahmi@epg.aphp.fr

Introduction: Postoperative digestive fistula remain a challenging condition associated with a high morbidity-mortality, unsatisfactory healing rates and high refrac-toriness. The limitation of current approaches highlights the need for a better therapeutic strategy in terms of both long-lasting efficacy and safety. Mesenchymal stem cell (MSCs) are strongly involved in tissue injury repair. MSCs feature an immune-privileged status while displaying pro-angiogenic,

Tuesday, October 31, 2017 09:00-17:00
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TUESDAY, OCTOBER 31, 2017 09:00-17:00
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and antiﬁbrogenic properties. Increasing evidences point out MSC action via subcellular extracellular vesicles (EVs). MSC EVs recouped the therapeutic properties of their cellular counterparts while offering remarkable advantages in terms of safety (no proliferation, no differentiation, no vascular occlusion following administration) and shelf life stability. Herein, we evaluated, in an ex vivo model, the healing potential of exogenous MSC EVs delivered through a thermostressive gel (Pluronic F127) allowing the administration in a sol state through a catheter and gelation in situ at body temperature to retain EVs at ﬁstula site.

Aims & Methods: Seventeen esophageal ﬁstulas were surgically created by placing two plastic stents during 30 days into the neck of 9 pigs and randomized into control group (n = 6) and treated groups (gel alone n = 6 and gel-EVs n = 5). In the gel-EVs group, Pluronic F127 gel contained allodogenic EVs collected from the swine. In a porcine conditional medical, co-localized radiological and radiological evaluation of ﬁstula healing was performed at day 30 and day 45, before histological assessment.

Results: All fistulas were successfully induced at day 30. At day 45, the control group featured open internal and external fistula orifices in all pigs. For this group, radiological evaluation showed open ﬁstula tracts, which were conﬁrmed by histology. In the gel group and gel-EVs groups, radiological examination showed a complete ﬁstula closure in 67% (4/6) and 100% (5/5) of the animals, respectively. In the gel group, histological analysis conﬁrmed a complete ﬁstula for 3 from 6 cases while a partial closure was observed for 1 case from 6. In the gel-EVs group, histological complete ﬁstula closure was reported for 4 from 5 cases while a partial closure was evidenced in 1 from 5 cases. In comparison with control group, treated ﬁstulas showed a reduced inﬂammatory inﬁltrate and ﬁbrosis and an enhanced angiogenesis, especially in the gel-EVs group.

Conclusion: This study provides the ﬁrst evidence in the literature that MSC-EVs may have promising antiﬁbrogenic effect in a pre-clinical model. MSC-EVs were fully administered via a thermostressive Pluronic F127 hydrogel, gelling in situ to enable EV retention in the ﬁstula tract. Besides, the gel further provided a proangiogenic and an anti-inﬂammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated with an antiﬁbrogenic effect in the esophageal ﬁstula model. This investigation paves the way towards a future subcellular localized ﬁstula therapy merging safety and efﬁcacy.

Disclosure of Interest: All authors have declared no conﬂicts of interest.

P0795 REAL-TIME MULTIPHOTON MORPHOLOGICAL IMAGING FOR DIAGNOSING GASTRIC ATYPICAL HYPERPLASIA AND ADENOCARCINOMA

K. He1, L. Zhao1, M. Wang1, X. Wang1, L. Liu1, Z. Fan1
The First Affiliated Hospital with Nanjing Medical University, Nanjing/China

Contact E-mail Address: fanzhining@njmu.edu.cn

Introduction: Compared with histopathology, real-time histology or virtual biopsy is important for clinical diagnosis, especially for endoscopic examination. Based on two photon fluorescence (TPEFL), multiphoton microscopy (MPM) imaging could demonstrate cell autofluorescence and second-harmonic generation (SHG) signal from collagen, which implied real-time information on tissue architecture and cellular morphology. More importantly, no contrast agent is needed for this live diagnosis. The aim of this study is to evaluate the feasibility of MPM to histologically diagnose gastric diseases, compared with other chromoendoscopy, such as H&E staining.

Aims & Methods: A pilot study was performed between March 2016 and August 2016. 30 gastric tissue slides (normal, low-grade dysplasia (LGD), high-grade dysplasia (HGD), and cancer) were examined under MPM. MPM and H&E images were compared by the experienced pathologist. Cellularity/nuclei ratio was analyzed to compare morphological features, while the major/minor axis ratio was calculated to reveal cellular asymmetry.

Results: Near-infrared light(800nm) was optimized and applied for multiphoton autofluorescence imaging in gastric tissue. Under MPM, gastric dysplasia tissue demonstrated enlarged, while cancer tissue were characterized by irregular size and shape, enlarged nuclei, and increased nuclear-to-cytoplasmic ratio. All these were conﬁrmed by H&E images. (Figure 1) The mean cellular/nuclear ratio for normal mucosa was 20.55±4.94, LGD 34.00±3.90, HGD 46.85±3.72 and cancer 56.80±3.37 (P <0.05). The mean major/minor axis ratio for normal mucosa was 1.31±0.09, LGD 2.02±0.16, HGD 1.70±0.18, and cancer 1.43±0.18 (P<0.05).

Conclusion: MPM-based optical biopsy was feasible and efﬁcient to clinically diagnose gastric cancer. With miniaturization and integration of endoscopy, MPM biopsy will be applied to provide real-time histological diagnosis without invasive biopsy for gastric cancer in the future.

Disclosure of Interest: All authors have declared no conﬂicts of interest.


P0797 UPPER GASTROINTESTINAL ENDOscopic FINDINGS IN ASYMPTOMATIC HEALTHY INDIVIDUALS WITH NORMAL AND DECREASED SERUM PEPsinogens FROM THE GISTAR PILOT STUDY

I. Ikikste1, J. Young Park2, R. Murillo2, S. Parshutin3, I. Polaka3, A. Kirsners3, R. Herrero2, M. Leja3
1Digestive Diseases Centre GASTRO, LV/Latvia
2International Agency for Research on Cancer, Lyon/France
3Institute Of Clinical And Preventive Medicine & Faculty Of Medicine, University of Latvia, LV/Latvia

Contact E-mail Address: iikikste@gmail.com

Introduction: Limited data are available with regard to the prevalence of upper gastrointestinal endoscopic ﬁndings in asymptomatic healthy individuals as an endoscopy is an invasive and costly procedure.

Aims & Methods: Individuals were recruited from general population in Latvia as part of the GISTAR pilot study. The study group has been referred for an upper endoscopy and was tested for serum pepsinogens and pepsinogen I/II ratio <3
INTRODUCTION: Gastric ulcer is one of the major diseases affecting the digestive system. The incidence of gastric ulcers varies depending on the country and age. In Japan, the incidence of gastric ulcer is estimated to be approximately 1 in 1000 people. The treatment of gastric ulcer aims to promote ulcer healing and prevent recurrent ulceration. Various treatments, such as proton pump inhibitors (PPIs), have been used for the treatment of gastric ulcers. However, the treatment effect is not always satisfactory, and there is a need for more effective treatments.

In this study, we evaluated the effect of vonoprazan, a potassium-competitive acid blocker (P-CAB), on the healing of endoscopic submucosal dissection (ESD)-induced gastric ulcer. The study was conducted in a single-center, randomized, double-blind, placebo-controlled trial. Patients with ESD-induced gastric ulcers were randomly allocated to vonoprazan 20 mg or placebo for 4 weeks. The primary endpoint was the healing rate of ulcers at 4 weeks. The secondary endpoints included the healing rate at 8 weeks and the incidence of postoperative bleeding.

METHODS: The study was conducted at a university hospital in Japan. Patients with ESD-induced gastric ulcers were included. The ulcers were assessed by endoscopy at 1, 2, 3, and 4 weeks after the ESD procedure. The healing rate of ulcers was defined as the proportion of patients with healed ulcers at each time point. Postoperative bleeding was assessed by endoscopy and clinical observation.

RESULTS: A total of 135 patients were enrolled in the study. The healing rate at 4 weeks was significantly higher in the vonoprazan group (66.7%) than in the placebo group (36.7%; P = 0.0028). The secondary endpoint of healing rate at 8 weeks was also significantly higher in the vonoprazan group (75.4%) than in the placebo group (52.9%; P = 0.0043). Postoperative bleeding occurred in 12 patients (9.0%) in the vonoprazan group and 23 patients (16.8%) in the placebo group (P = 0.0342).

CONCLUSION: Vonoprazan was superior to placebo in accelerating ulcer healing and reducing the incidence of postoperative bleeding. The results of this study suggest that vonoprazan may be a useful agent for the treatment of ESD-induced gastric ulcers.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P00801 THE EFFECT OF VONOPRAZAN FOR ENDOSCOPIC SUBMUCOSAL DISSECTION-INDUCED ULCERATION AND POSTOPERATIVE BLEEDING


Department Of Gastroenterology, Nippon Medical School, Tokyo/Japan

Contact E-mail Address: gogogo.with.yyy@gmail.com

Introduction: ESD is the standard treatment for early gastric cancer and less invasive procedure compared with gastrectomy. Proton pump inhibitors (PPIs) have been widely used for the treatment of ESD-induced gastric ulcers. Many studies have reported that vonoprazan with those treated with PPI. 139 patients who underwent gastroscopy between January 2015 and December 2016 were enrolled in Nippon Medical School Hospital. 11 patients who were injected triamcinolone into mucosa preventing stricture of the prepylorus were excluded. 59 patients were treated with P-CAB for 4 weeks (P-CAB group) and 69 patients were treated with PPI (4 omeprazole, 24 esomerazole, 11 lansoprazole or 32 rabeprazole) for 4 weeks (PPI group), and subsequently underwent endoscopy for evaluation of ulcer size and intra gastric juice. The area of ulcerations was approximated by multiplying the length (mm) by the width (mm).

Results: The shrinking rate of ESD-induced ulcer at 4 weeks after ESD was not significantly different (95.4±8.1% and 94.5±6.4%, p=0.4852) different between P-CAB and PPI groups. The post-ESD bleeding incidence (6.8%) in the P-CAB group were not significantly different (p=0.8189) different from that (5.8%) in the PPI group. The intra gastric pH at 4weeks after ESD in the P-CAB group was significantly higher than that in the PPI group (6.9±1.0 vs 6.1±1.1, respectively, p=0.0028). Conclusions: Vonoprazan is superior to PPI in acid suppression, but there were no significant differences in ulcer healing and bleeding incidence between the two groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0802 LOW-DOSE ASPRIN DELAYS THE ULcer HEALING AND INCREASES THE RISK OF POSTOPERATIVE BLEEDING AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION THROUGH THE DUODENOGASTRIC REFLUX

N. Ueki1, S. Futagami2, T. Akimoto1, S. Agawa1, G. Ikeda1, H. Noda1, K. Higuchi1, Y. Maruki1, H. Yamawaki1, Y. Kodaka1, T. Kawagoe1, K. Miyake1, M. Kaise2, K. Iwakiri1

1Department Of Gastronterology, Nippon Medical School, Tokyo/Japan

Introduction: Endoscopic submucosal dissection (ESD) permits en bloc resection of large-sized lesions. The number of the patients taking anti-thrombotic agents including low-dose aspirin (LDA) has increased. The Japanese guidelines recommend endoscopic procedures without interruption of LDA therapy in patients at high risk of thrombotic events who use LDA alone. And, bile acid reflux is known to cause gastric mucosal damage though the exact mechanisms are still unclear.

Aims & Methods: In this study, we aimed to clarify whether LDA treatment and gastric bile acid contents synergistically affect on postoperative bleeding and heparin after gastric ESD procedure. A total 224 patients with gastric neoplasms were treated with ESD at Nippon Medical Hospital, between January 2013 and June 2016. To investigate whether anti-thrombotic agents affect the ESD procedure-induced ulceration and ESD postoperative bleeding rate, we compared ulceration reduction rate (one month after ESD), postoperative bleeding rate and gastric bile acid contents among the patients treated with low dose aspirin, other anti-thrombotic agents and non-anti-thrombotic agents.

Results: Ulcer reduction rate in the patients treated with LDA was significantly (p=0.0036) higher compared to that in the patients with non-anti-thrombotic agents. ESD postoperative bleeding rate in the patients with LDA was significantly higher (p=0.028 and p<0.0001, respectively) compared to those in the patients with other anti-thrombotic agents and the patients with non-anti-thrombotic agents. The difference of gastric bile acid contents between pre- and post-ESD procedure in the patients with low dose aspirin was significantly (p=0.0426) higher compared to that in the patients with non-anti-thrombotic agents.

Conclusion: LDA increased gastric bile acid contents, which delayed the ulcer healing and increased the bleeding after ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.


Contact E-mail Address: nobue@nms.ac.jp

P0804 TRANSLATION OF AUTOLOGOUS ESOPHAGUS MUCOSA TO PREVENT STRicture AFTER CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY SQUAMOUS CELL

L. Zhi1, F. Chaoqiang, Y. Xin, P. Xue, Z. Xia, Y. Jin, X. Xia, B. Jianying Gastroenterology, Xiqing Hospital, Third Military Medical University, Chongqing, Qing/China

Introduction: Esophageal endoscopic submucosal dissection (ESD) to remove superficial esophageal neoplasms is gradually becoming the standard treatment for superficial oesophageal cancer, but is associated with esophageal stenosis, particularly when ESD involves the entire circumference of the luminal. Many methods to prevent post-ESD stricture, such as repeated Endoscopic balloon dilatation (EBD), temporary stent insertion, and oral steroid and intralesional steroid injection, have been used in different institutions. In recent years, new technologies such as autologous oral mucosal sheets or extracellular matrix scaffold material have also been suggested to manage esophageal strictures. There are no standard guidelines to prevent stricture in a patient with circumferential mucosal defect after ESD. In this study, we aimed to assess the effectiveness and safety of endoscopic transplantation of autologous esophagus mucosa in preventing formation of strictures after ESD.

Aims & Methods: We performed a single-arm, single-institute study. Nine patients who underwent wholly circumferential ESD for superficially extended...
esophageal squamous cell carcinoma at the endoscopy center of Xinqiao Hospital, Third Military Medical University (Chongqing, China) from January 2015 to February 2017, were enrolled in this study. We collected specimens of autologous esophageal mucosal tissue from these patients. After undergone ESD, these mucosal pieces were fixed at “ulcer surface” by hemoclips and then fixed by means of a covered metal mesh stent. The stent was removed on post-procedure day 7. All patients were monitored by endoscopy.

Results: En bloc ESD was safely achieved in all cases. The overall longitudinal diameter of resected specimens was 117.8 mm (range, 70 to 150 mm). Autologous esophageus mucosa were successfully transplanted to “ulcer surface” using an endoscope. The number of mucosal patches ranged from 8 to 28. Complete re-epithelialization occurred within a median time of 8.6 days with a graft survival rate at 93.06%. Postprocedural stent accompanied by dysphagia occurred in seven patients on post-procedure day 247 (range, 18–34 days). The median sessions of EBR and intraluminal steroid injection was 3.3 (range 1–6). No other serious complications occurred in these patients, such as overall bleeding and perforation. Eight patients were still alive during the mean follow-up period of 11.6 months (range, 2.5 to 21 months). One patient developed lung metastasis and died of the disease 15 months after ESD.

Conclusion: Transplantation of autologous esophageus mucosa appears to be a safe means of relieving the severity of esophageal stenoses following circumferential ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Hochberger J, Koehler P, Wedi E, Rothstein RI, Niemann H, 2012; 11.6 months (range, 2.5 to 21 months). One patient developed lung metastasis and died of the disease 15 months after ESD. Statistical analysis: IBM SPSS 23.0.

Results: A total of 18 patients (72% women), with a mean age of 48.9 ± 18.1 years were treated with an OTSC for the closure of post-surgical fistulas or perforations. Mean fistula size was 5.8 ± 3.5 mm. Median follow-up time was 20.5 (5–84) months.

Etiology of fistulas: post-surgical (n=16), perforation by foreign body (n=1) and after endoscopic procedure (n=1). Localization of the fistulas: cardia (33%), esophagus (28%), gastric body (16%), antrum (11%), esophagus-jejunal anastomosis (6%) and duodenal bulb (6%). Overall clinical success rate was achieved in 72.2% (n=13). Fistulas were successfully closed in both non-surgical cases. Regarding post-surgical fistulas (n=16), 50% (n=8) were after bariatric surgery. There was a clinical success rate of 68.8% (n=11). The median time between surgery and the endoscopic intervention was 20.5 (2–550) days. There was no association between clinical success and the time between surgery and the endoscopic intervention (p = 0.624) or the location of the fistula (p = 0.334). In 1 case, endoscopic re-intervention with placement of OTSC was required due to persistence of fistula. In 5 (31%) cases the OTSC was not effective, requiring endoscopic re-intervention with stent placement (n=2) or surgical intervention (n=3). The overall recurrence rate was 11% (n=2).

Conclusion: OTSCs can be safely and effectively used in patients presenting with post-surgical fistulas or perforations and, when feasible, may be more advantageous and less costly than surgery. Further research is required to characterize the determinants of long-term success and risk factors for failure.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0806  A PROSPECTIVE STUDY USING A NEW DEVICE FOR ENDOSCOPIC RESECTION OF EARLY NEOPLASIA IN BARRETT’S ESOPHAGUS

R. E. Pouw1, T. Beyna2, K. Belghazi2, A. D. Koch3, E.J. Schoon4, R. Haidry5, B.L.A.m. Weus ten6, R. Bisschops7, N.J. Sha heen8, M.B. Wallace9, N.E. Maggon10, K. Wuang11, J. Ortiz Fernandez-Sordo12, K. Raganath13, M. Di Pietro6, O. Pech6, H. Neuhaus7, J.J. Gh.m. Bergman8. 1Gastroenterology & Hepatology, Academic Medical Center, Amsterdam, Netherlands; 2Department Of Internal Medicine, Evangel, Krankenhaus Düsseldorf, Düsseldorf, Germany; 3Erasmus MC - University Medical Center Rotterdam, Rotterdam, Netherlands; 4Dept. Of Gastroenterology, Catharina Hospital Gastroenterology and Hepatology, Eindhoven, Netherlands; 5Gastroenterology, University College London Hospital, London, United Kingdom; 6Department Of Gastroenterology And Hepatology, St Antonius Hospital, Nieuwegein, Netherlands; 7Gastroenterology, Katholieke Universiteit Leuven, Leuven, Belgium; 8Center For Esophageal Diseases Abd Swallowing, University of North Carolina School of Medicine, Chapel Hill, United States of America; 9Gastroenterology, Mayo Clinic Florida, Jacksonville, FL, United States of America; 10St. Michael’s Hospital, Toronto, Canada; 11Mayo Clinic Rochester, Rochester, United States of America; 12Nottingham University Hospitals, Nottingham, United Kingdom; 13Endoscopy & Gastroenterologist Wolfson Digestive Diseases Centre, Queens Medical Centre campus Nottingham University Hospitals, Nottingham, United Kingdom; 14MRC Cancer Cell Unit, Cambridge University Hospitals MRC Cancer Cell Unit, Cambridge, United Kingdom; 15Klinik Für Gastroenterologie Und, Krankenhaus Barmherzige Brüder Klinik für Gastroenterologie und Interventionelle Endoskopie - Klinik, Regensburg, Germany.

Contact E-mail Address: roospouw@gmail.com

Introduction: Early neoplastic lesions in Barrett’s Esophagus (BE) can be effectively and safely removed by endoscopic resection (ER) using multi-band mucosectomy (MBM). Recently a new MBM device became available, designed for improved visualization, easier passage of accessories, and better suction power compared to other marketed MBM devices.

Aims & Methods: This study aims to document performance of the new MBM device for detection of early neoplastic lesions in BE. This is a company sponsored, international, multicenter, single-arm, prospective registry study enrolling 300 subjects with early neoplasia in BE. Primary endpoint is successful ER defined as complete resection of the delineated target area in one procedure. Secondary outcomes: adverse events, procedure time.

Results: To date 259 subjects have been enrolled at 14 centers (Europe 10, US 3, Canada 1). Mean age was 67 ± 8 years, with 87% males. In these 259 subjects, a total of 301 lesions were removed using the new MBM device, with a mean of 2.5 ± 1.92 resections per procedure. Indication for ER was high-grade dysplasia (HGD) in 65%, early adenocarcinoma in 20%, visible lesion with low-grade dysplasia in 10%, and a visible lesion suspicious for neoplasia without pre-treatment histology in 5%. The primary endpoint of successful ER of a target lesion

Table 1: Results of the study

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Expected outcome</th>
<th>Pattern A</th>
<th>Pattern B</th>
<th>LBC</th>
<th>Pattern B + LBC + demarcation line</th>
<th>Pattern C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (CI 95%)</td>
<td>0.94 (0.87–0.99)</td>
<td>0.84 (0.75–0.92)</td>
<td>0.54 (0.42–0.66)</td>
<td>0.97 (0.92–1.02)</td>
<td>0.87 (0.75–0.99)</td>
<td></td>
</tr>
<tr>
<td>Specificity (CI 95%)</td>
<td>0.88 (0.81–0.94)</td>
<td>0.94 (0.89–0.99)</td>
<td>1.00 (1.00–1.00)</td>
<td>1.00 (1.00–1.00)</td>
<td>0.99 (0.98–1)</td>
<td></td>
</tr>
<tr>
<td>Accuracy (CI 95%)</td>
<td>0.9 (0.85–0.95)</td>
<td>0.89 (0.85–0.94)</td>
<td>0.8 (0.75–0.87)</td>
<td>0.99 (0.98–1)</td>
<td>0.97 (0.94–1)</td>
<td></td>
</tr>
<tr>
<td>Positive predictive value (CI 95%)</td>
<td>0.83 (0.74–0.92)</td>
<td>0.9 (0.83–0.98)</td>
<td>1.00 (1.00–1.00)</td>
<td>1.00 (1.00–1.00)</td>
<td>0.96 (0.94–1)</td>
<td></td>
</tr>
<tr>
<td>Negative predictive value (CI 95%)</td>
<td>0.96 (0.91–0.998)</td>
<td>0.89 (0.83–0.95)</td>
<td>0.75 (0.67–0.83)</td>
<td>0.99 (0.98–1)</td>
<td>0.97 (0.94–1)</td>
<td></td>
</tr>
</tbody>
</table>
was reached in 290/301 (96%) procedures. A perforation occurred in 3/301 ER procedures (1%, 95% CI 0.21%–3.89%). Two perforations were closed with clips, all three patients received intravenous antibiotics and were admitted to hospital for 2, 3 and 9 days. Bleeding requiring intraprocedural hemostasis occurred during 15% of procedures. Significant post-procedural bleeding requiring intervention occurred in 5 cases (2%). Dysphagia requiring endoscopic dilatation occurred in 7 patients (3%), after ER with a mean number of 4 ± 2.9 resected pieces. Mean total procedure time for ER using the new MBM device was 33 ± 17.1 minutes.

Conclusion: The new MBM device used in this study proved to be effective for resection of early neoplastic lesions in BE: successful ER was achieved in 96% of procedures. Perforations were seen in 1% and significant post-procedural bleeding in 2%, complications were effectively managed endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0807 COST–EFFECTIVE ANALYSIS COMPARING STANDARD BIOPSY VS. DIGITAL BIOPSY BY CONFOCAL ENDOMICROSCOPY

Gastroenterology, Instituto Ecuatoriano de Enfermedades Digestivas, Guayaquil/Ecuador

Contact E-mail Address: carlosouakim@yahoo.es

Introduction: Endoscopy has greatly influenced gastroenterological diagnosis. However, most lesions can be suspected but not definitely diagnosed only on the basis of endoscopic findings and therefore histology is needed. On the other hand the reliability of detecting lesions histologically depends on the site, number, and size of biopsy (Bx) specimens with a 20–30% probability of sampling mistakes. Probe based Confocal Laser Endomicroscopy (p-CLE) allows endoscopic in-vivo mucosal cellular evaluation of the gastrointestinal (GI) tract with a high (90%) diagnostic accuracy. It allows to perform target Bx. Moreover, the NPV is > 98%. There is no information in the literature regarding the economic impact of performing digital biopsies (DBx) by p-CLE.

Aims & Methods: The aim of this study is to perform a cost-effectiveness analysis comparing the diagnosis of upper GI tract pathologies using only standard Bx following the literature recommendations (LR) vs. the diagnosis with DBx using p-CLE. This was a retrospective study with prospective collection data of patients included from Jan 2014 to Nov 2016. The pathologies included for p-CLE evaluation are summarized in Table 1. The diagnosis costs using standard Bx was calculated following the literature recommendations (Table 2). The standard Bx costs included the histological process and physician honoraria per Bx (USD 50.00), and one biopsy forceps per patient (USD 38.00). The DBx costs by p-CLE included the probe, the processor and the physician honoraria (USD 500.00). Baseline characteristics, p-CLE indications, the diagnostic accuracy of p-CLE and costs were described.

Results: 78 patients were included, 51.2% were female. The mean age was 50.18 years old. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%) and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 cases (91.0%). Table 1 shows the procedure cost reached with the different pathologies, and Table 2 shows the diagnostic accuracy of p-CLE and costs were described.

Table 1: Cost analysis following the Literature Recommendations (LR) for initial diagnosis and follow-up

<table>
<thead>
<tr>
<th>Pathology</th>
<th>No. of Bx by LR</th>
<th>No. of Total System</th>
<th>Total cost of Bx(USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophageal Tumor a</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus 1 to 3.9 cm a,b</td>
<td>4</td>
<td>4</td>
<td>238.00</td>
</tr>
<tr>
<td>Barrett’s Esophagus ≥4 cm a,b</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Gastric Tumor c</td>
<td>5</td>
<td>13</td>
<td>688.00</td>
</tr>
<tr>
<td>Gastric Atrophy and/or Metaplasia a,b</td>
<td>12</td>
<td>12</td>
<td>638.00</td>
</tr>
<tr>
<td>Gastric Ulcer c</td>
<td>8</td>
<td>13</td>
<td>688.00</td>
</tr>
</tbody>
</table>

Bx: biopsies; LR: Literature Recommendations. a. For initial diagnosis. b. For follow-up. c. Cost includes histological process and physician honoraria per biopsy (USD 50.00), and the Bx forceps per patient (USD 38.00).

Conclusion: In our population, the digital biopsy by p-CLE proved to be more cost-effective, when ≥10 biopsies were indicated, like in cases of a Barrett’s Esophagus ≥4 cm, a Gastric Tumor, or in the context of two or more suspected pathologies (e.g.: esophageal and gastric disease).

Disclosure of Interest: C. Robles-Medranda: KOL for Pentax Medical, Boston Scientific Consulting. US Endoscopy Consulting. All other authors have declared no conflicts of interest.

P0808 GASTRIC PERO-ORAL ENDOSCOPIC PYLOROTOMY (G-POEM) IN THE TREATMENT OF REFRACTORY GASTROPARESIS: EXPERIENCE OF THE FIRST 9 CASES IN A MEXICO

O. V. Hernandez Mondragon, R. Palos Cuellar, G. Blanco Velasco, M. Alvarado, M. L. Hernandez Reyes
Endoscopy, IMSS, Mexico city/Mexico

Contact E-mail Address: mondragonomd@yahoo.co.uk

Introduction: Gastroparesis is a syndrome characterized by a delayed gastric emptying in absence of a mechanical obstruction. Reduction in QOL scores have been observed. Etiologies include: idiopathic, diabetic, post-surgical. Diagnosis is based on the combination of symptoms and a delayed gastric emptying scintigraphy(GES) of > 10% after 240 min. Multiple treatments have been used but temporary results with morbidity, so no new treatment options have been explored. G-POEM is a new endoscopic treatment which is based in the POEM treatment for achalasic patients and consist in a creation of a submucosal tunnel in order to perform an endoscopic pylorotomy. Initial results have been promising.

Aims & Methods: The aim of this study was to evaluate the safety and efficacy of G-POEM in a group of Mexican patients with refractory gastroparesis. This prospective study was carried out in a tertiary care center in Mexico city, between December 2016 and April 2017. We included patients with refractory gastroparesis defined as presence of symptoms such as: nausea, vomiting, early satiety with inability to finish a normal meal, bloating and upper gastrointestinal pain. These patients were on medical treatment and did not respond and have a positive gastroparesis cardiomotor symptom index (GCSI) score combined with a >10% of retention at 240 min in the GES study. Exclusion criteria were malignancy, peptic ulcer disease, normal GES and coagulation disorders. Procedure steps were based on a POEM procedure, beginning 5cms below pylorus with an longitudinal incision, then submucosal tunnel creation, myotomy of the pyloric arch up to the serosa and 2cms before this point and finally closure with clips. Follow-up included GCSI, endoscopy and GES at 3 months after procedure.

Characteristics of procedure, and patients were documented. Student paired t-test was used for comparisons between groups and p < 0.05 was considered as statistically significant.

Results: There were 9 patients included in this initial study, the mean age was 42.4 ± 8.5years. 6 patients were female and 3 male. The most common etiology was postsurgical 4/9 (44.4%), followed by diabetic 3/9(33.3%) and idiopathic 2/9 (22.2%). The mean G-POEM time was 61.4 ± 7.8 min, and complications were self-limited and presented in only 4 patients, the GCSI score decreased 68% between the pre-procedure levels as well as the GES which decreased 67% compared with levels at 3 months after G-POEM (34.3 ± 5.8 vs 13.1 ± 3.2 p = 0.003/ 20.74 ± 5.3 vs 6.83 ± 1.78 p = 0.001 respectively). 7/9 (77.7%) normalized the GES<10% at 240 min). Endoscopy at 3 months after procedure didn’t show any complication (Table 1).

Conclusion: G-POEM is a safe and effective procedure in Mexican patients with refractory gastroparesis with a normalization of the GES in up to 77% of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0809 ENDOSCOPIIC MANAGEMENT OF FOREIGN BODIES IN THE UPPER GASTRONESTRINAL TRACT: A RETROSPECTIVE STUDY OF 1294 CASES

C. Geng, X. Li, X. Lei, C. Wang
Department Of Gastroenterology, West China Hospital of Sichuan University, Chengdu/China

Contact E-mail Address: gengcheng1585@163.com

Introduction: Foreign body (FB) ingestion including food bolus impaction is frequently encountered in clinical practice. Few studies with large sample size
towards endoscopic management of FBs had been reported. No direct evidence has demonstrated the relationship between duration of FB impaction and outcomes of endoscopic management. Moreover, it remained unclear whether endoscopic management of FBs under general anaesthesia could improve endoscopic outcomes when compared with topical pharyngeal anaesthesia.

Aims & Methods: The aim of the present retrospective study is to analyze our endoscopic outcome and explores the best timing and anaesthesia methods of endoscopic intervention in population with FB ingestion. All consecutive patients suspected of FB ingestion were enrolled. The demographic, clinical and endoscopic data were collected and analyzed.

Results: Totally, 1294 cases were recruited in this retrospective research. The ages ranged from 7 months to 94 years, with a median age of 47.0 (31–63) years. The majority of patients (1191/1294 cases, 92.0%) presented with some symptoms after FB ingestion, in order of frequency odynophagia (415 cases, 32.1%), foreign body sensation (340 cases, 26.3%) and sore throat (267 cases, 20.1%). The duration of FB impaction ranged from 4 hours to more than 2 years with a median time of 1 (0.63–3) days. Bony FBs, jujube pit, food bolus and dental prosthesis were the most frequent FBs in population. Anatomically, FBs were mostly impacted in the oesophagus (n = 1025, 86.9%), especially in the upper oesophagus (n = 762, 79.5%), followed by stomach (n = 95, 81.3%), duodenum (n = 36, 3.0%) and pharynx (n = 24, 2.0%). Nearly half of the patients (49.9%) developed FB-related complications, mainly including mucosal injuries (356 cases, 27.5%) and ulcers (210 cases, 16.2%). The most common underlying pathologies were oesophageal stricture (35 cases, 39.3%) and oesophageal cancer (11 cases, 15.5%). As the duration of FB impaction increased, positive finding and successful removal of FB by endoscopy significantly decreased (p < 0.001). Furthermore, complication rate significantly increased with time (p < 0.001).

Age (OR = 1.15, 95%CI: 1.20–1.91, p = 0.001), type and location of FBs (OR = 4.51, 95%CI: 2.95–6.90, p = 0.001), anaesthesia methods (OR = 1.35, 95%CI: 1.05–1.75, p = 0.02) and duration of FB impaction (OR = 1.74, 95%CI: 1.50–2.00, p = 0.001) were verified as risk factors for development of FB-related complication by logistic regression analysis. General anaesthesia could not improve positive FB detection (p = 0.181) or success rate of endoscopic management of FBs (p = 0.135), as well as decrease the complication rate when compared with topical pharyngeal anaesthesia (52.3% VS 47.5%, p = 0.033).

Conclusion: FB-related complication rate increased with time, endoscopic management under general anaesthesia could not improve therapeutic effects when compared with topical pharyngeal anaesthesia. Overall, Patients suspected of FB ingestion should receive endoscopic management as soon as possible.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0810 CLINICAL OUTCOMES AFTER ENDOSCOPIC RESECTION FOR ESOPHAGEAL SQUAMOUS CELL CARCINOMA COMPARING THE CASES WITH MM AND SM1 INVASION

S. Yoshimizu1, T. Yoshio2, K. Namikawa2, A. Ishiyama1, T. Tsuchida1, J. Fujisaki1
1Departments of Surgery, Cancer Institute Hospital, Tokyo, Japan
2Gastroenterology, Cancer Institute Hospital, Tokyo, Japan

Contact E-mail Address: toshiyuki.yoshio@cfcr.or.jp

Introduction: Recent advances in endoscopic resection (ER) provide us increasing chances for resecting esophageal squamous cell carcinoma (ESCC) with muscularis mucosae (MM) and SM1 invasion. As MM/SM1 invasive cancer is reported to have ≥80% of metastatic risks and is defined as relative indication for ER in guideline by Japan Esophageal Society. For them, we perform additional therapy such as chemo radiotherapy (CRT) or operation considering the risk of metastasis and patients' condition.

Aims & Methods: To know the difference of metastatic risk and long time outcome, we retrospectively studied 121 cases of ESCC with pathological MM/SM1 invasion (MM/SM1:97/24) resected by ER from 2003 to 2013 in Cancer Institute Hospital. After pathological diagnosis of resected lesions, we performed additional therapy such as CRT, radiation therapy (RT) or operation, to the cases with lymphovascular invasion (LVI) or droplet infiltration (DI). Median observation period was 48 months.

Results: Enrolled cases included 112 males and 9 females and their median age was 66 (39–86). We resected ESCC by ESD in 71 cases and by EMR-C in 50 cases and their median size was 27 mm. Local recurrence was observed in 6 cases which were all after EMR (12%). As for local recurrence 5 cases were treated by re-EMR and 1 case by APC, resulted in no re-recurrence. Of 97 cases of MM, 15 cases (15.5%) had LVI, 10 cases (10.3%) had DI. We recommended additional therapy in 12 cases (10.2%). Additional therapy was performed in 15 cases (15.5%) (ope/CRT/RT:9/5/1). No case died of ESCC and 22 cases (22.7%) died of other diseases. Of 24 cases of SM1, 9 cases (37.5%) had LVI, 5 cases (20.8%) had DI. We recommended additional therapy in 12 cases (50.0%). Additional therapy was performed in 9 cases (37.5%) (ope/CRT/RT/chemotherapy: 3/4/1/1). Three cases died of ESCC and 5 cases (20.8%) died of other diseases. Comparing both groups, tumor size and local recurrence rate were not different each other. The frequency of LVI was significantly higher in SM1 than in MM (p = 0.05) and the frequency of DI was higher in SM1, although not significant (p = 0.161). The metastatic recurrence was observed significantly frequent in SM1 than MM (16.7% vs 2.1%; p < 0.01). The 5-year overall survival (OS)/disease specific survival (DSS)/relapse free survival (RFS) were 81.7%/100%/94.1% for MM and 62.9%/87.9%/91.7% for SM1. OS and RFS were not different each other, however, CSS was superior in MM than in SM1 (p < 0.01).

Conclusion: ESCC with MM invasion was superior in metastatic recurrence and CSS than ESCC with SM1 invasion, although we treat MM/SM1 in the same way. Additional therapy should be considered more positively in cases of MM than in cases of SM1, considering metastatic risk and patients' conditions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0811 GASTRIC ESD IN AN ANIMAL SURVIVAL MODEL USING THE ANUBIS-SYSTEM

J. Bernhardt1, H. Steffen2, P. Koehler1, S. Schneider-Kortath2, K. Ludwig2
1Dept. Of Endoscopy, Klinikum Suedstadt Rostock, Rostock/Germany
2Dept. Of Surgery, Klinikum Suedstadt Rostock, Rostock/Germany

Contact E-mail Address: joern.bernhardt@kliniksued-rostock.de

Introduction: ESD in generally is still under evaluation. The one-piece resection of lesions larger then 2 cm has many advantages against piece meal resection. One disadvantage is the only two degrees of freedom of the flexible scope, an area of 5 cm in diameter was selected for resection. Injection was done using a grasper and a hook-knife. Also the grasper could use for coagulation. The experimental study was conducted in a porcine model in general anesthesia. We started the study with 7 pigs in a survival model using the Anubisbox (Carl Storz, Germany). After insertion of the scope insufflations were done with the two arms of the scope using a gaspaser and a hook knife. Also the gaspaser could use for coagulation. The specimen was removed with the scope after closing its valves.

Results: The procedure was successful in all animals with operation time ranging from 102 to 189 minutes with a learning curve. After weight gain in all cases, the animals were sacrificed after postoperative day 42 and the workup showed competent healing with a star-like scar.

Conclusion: The use of an operating platform like the Anubisbox has the advantage of flexible preparation in opposite position of the instruments in ESD. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Also, it is not possible to reach all regions of the stomach.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0812 USEFULNESS OF NARROW BAND IMAGING WITH MAGNIFYING ENDOSCOPY AS A SCREENING TEST FOR GASTRIC CANCER

T. Morinushi
Gastroenterology, Kameda Medical Center, Chiba/Japan

Contact E-mail Address: moristatu@yahoo.co.jp
Introduction: Narrow band imaging with magnifying endoscopy (NBI-ME) is used for gastric cancer; however, whether NBI-ME is useful as a screening test for gastric cancers has not yet been determined. Additionally, it is important to consider the impact on the atrophy of the background gastric mucosa in gastric cancer screening because the incidence of gastric cancer depends largely on the degree of atrophy noted in the background gastric mucosa.

Aims & Methods: We aimed to determine the usefulness of NBI-ME as a screening tool for gastric cancer. We retrospectively studied 3515 patients who had undergone screening upper gastrointestinal endoscopy between April 2013 and March 2014. We excluded patients with advanced gastric cancer and those who had undergone gastrectomy. Thus, we studied 1080 patients who received NBI-ME and 2435 patients who had undergone conventional endoscopy. We classified the degree of atrophy of the background gastric mucosa using the Kimura-Takemoto classification. Severe atrophy was noted in 1620 patients (Group S), and mild atrophy in 1895 patients (Group M). We evaluated the biopsy rate, the detection rate of gastric neoplasms, and the accuracy of biopsy using NBI-ME compared to conventional endoscopy.

Results: The biopsy rate of NBI-ME and conventional endoscopy in Group M was 5.4 and 7.7%, respectively, while in Group S it was 14.9 and 14.8%, respectively. The biopsy rate did not differ significantly between those who received NBI-ME and those who had undergone conventional endoscopy. The detection rate of gastric neoplasms using NBI-ME and conventional endoscopy in Group M was 0 and 0.2%, respectively, while in Group S it was noted to be 4.2 and 1.8%, respectively. Thus, the detection rate of NBI-ME was significantly higher than that of conventional endoscopy in Group S (p < 0.01). The accuracy of biopsy with NBI-ME and conventional endoscopy in Group M was 0 and 3.2%, respectively, but in Group S it was noted to be 36.4 and 14.1%, respectively. Thus, the biopsy rate of biopsy using NBI-ME is significantly superior to conventional endoscopy in Group S (p < 0.01).

Conclusion: NBI-ME as a screening test for gastric cancer is useful for patients with severe atrophy of the background gastric mucosa because this technique has shown a higher detection rate of gastric neoplasms and better accuracy of biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0813 DIAGNOSTIC LIMITATIONS OF MAGNIFYING ENDOSCOPY WITH NARROW BAND IMAGING (ME-NBI) IN EARLY GASTRIC CANCER

K. Matsutomo, H. Ueyama, K. Matsumoto, Y. Akazawa, H. Komori, M. Haga, T. Yaco, S. Watanabe
1Dept. Of Gastroenterology, Juntendo University, Bunkyo City/Japan
2Department Of Gastroenterology, Juntendo University Shizuka Hospital, Shizuoka/Japan
3Department Of Human Pathology, Juntendo University School of Medicine, Tokyo/Japan

Contact E-Mail Address: k.matsui@juntendo.ac.jp

Introduction: ME-NBI is an important modality to diagnose early gastric cancer. A unified diagnostic system, the magnifying endoscopy simple diagnostic algorithm for early gastric cancer (MESA-GD), was proposed in 2016 by Muto et al. 1,2 We aimed to compare the feasibility of diagnostic algorithms in ME-NBI and those who had undergone conventional endoscopy.

Aims & Methods: We aimed to clarify endoscopic and histological features of distinct histological types of early gastric cancer screening test for gastric cancers has not yet been determined. Additionally, it is important to consider the impact on the atrophy of the background gastric mucosa in gastric cancer screening because the incidence of gastric cancer depends largely on the degree of atrophy noted in the background gastric mucosa.

Results: A total of 3515 patients were enrolled. 7 days before PEG-J placement, to evaluate the possible presence of mucosal or anatomical gastric anomalies, each patient underwent an endoscopic esophagogastroduodenoscopy (EGD). Treatment with LCIG consists in a water-based suspension containing micronized levodopa (20 mg/mL) and carbidopa (5 mg/mL) in methylcellulose, administered by continuous jejunal infusion for 12 hours/day using a portable pump by PEG-J. Clinical evaluations were performed at baseline(T0), before LCIG initiation, and after 3(T3) and 6(T6) months of therapy. To evaluate efficacy and safety outcomes it has been used Unified Parkinson’s Disease Rating Scale (UPDRS) parts II, III and IV. For the analysis of the differences between the clinical variables and to exclude biases due to the small number of the sample in the question, the non-parametric Kruskal-Wallis H test was used for the comparison of three samples. A statistically significant value of p was less than 0.05. The analyzes were carried out using SPSS version 13 (SPSS Inc., Chicago, IL, USA).

References:
1) Success rate for PEG-J placement was 100% ; 2) Eight/24 patients (33%) dropped-out LCIG at T3 ; 3) Sixteen/16 patients (100%) showed statistically significant (p 0.05) higher performances in daily common activities and statistically significant (p 0.05) lower incidence and severity of motor fluctuations ; 4)During observational period, 6 patients experienced adverse events.

Conclusion: 1) This study demonstrates that continuous intra jejunal LCIG’s infusion treatment is highly effective in decreasing motor fluctuations in advanced PD patients compared to oral administration of levodopa-carbidopa; 2) This therapeutic approach should be proposed in well selected APD patients with preserved sensitivity to L-dopa.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0815 PREDICTIVE RISK MODEL FOR POST-ENDEOSCOPIC SUBMUCOSAL DISSECTION ULCER BLEEDING OF STOMACH

1Gastroenterology, Severance Hospital, Yonsei University College of Medicine, Seoul/Korea, Republic of
2Dept. Of Gastroenterology, Yonsei University College of Medicine Dept. of Internal Medicine, Seoul/Korea, Republic of
3Dept. Of Internal Medicine, Yonsei University, Seoul/Korea, Republic of

Contact E-Mail Address: last_message@yhus.ac

Introduction: Post-endoscopic submucosal dissection (ESD) bleeding is the most common complication of ESD. In previous studies, the post-ESD bleeding occurred from 1.8% to 15.6% of total procedures [1–4]. Recently, many patients who underwent ESD, have been prescribed antiplatelets or anticoagulants, because of various underlying diseases such as cerebrovascular accidents or
cardiovascular diseases [3]. Thus, the verified risk prediction model of post-ESD bleeding may be used to determine preventive therapeutic options and restarting date of antiplatelet agents.

Aims & Methods: The aim of this study is to develop the predictive risk model of post-ESD bleeding. A total of 3574 patients, who were taken ESD from January 2007 to December 2015 in a Korean tertiary hospital, were included in this retrospective study. To avoid overfitting of the prediction model, we divided the patients randomly into two groups, either a derivation group or a validation group. Preoperative and procedural-related variables were selected via univariate and multivariate analysis. A risk score was calculated to assess the bleeding prediction model of a patient in the derivation group and was discriminated in the validation group.

Results: Post-ESD bleeding occurred in 248 patients (6.9%). In the derivation group, the model also showed good discrimination (C-statistic = 0.739; 95% confidence interval [CI] 0.710–0.769). In the validation set, the model also showed good discrimination (C-statistic = 0.697; 95% CI, 0.652–0.741). In the validation set, the model also showed good discrimination (C-statistic = 0.697; 95% CI, 0.652–0.741).

Conclusion: Though our study is preliminary, DRI improves total resection time, the visibility of vessels and demarcation line between the submucosal and muscle layers significantly as previous study showed on colorectal ESD. DRI uses narrow long wavelength light. The light reaches slightly deeper layer than WLI. Therefore, we can see not only clear vessels but intact submucosa with high contrast of submucosal vessels in the mass color image. We named this effect "noise cancelling effect" by DRI. This effect gets better the visibility better, therefore the esophageal and gastric ESD makes easier and safer.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0818 RISK FACTORS OF COMPLICATION RELATED TO ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE ESOPHAGUS: A PROSPECTIVE STUDY IN 595 CASES FROM MULTIPLE CENTERS IN CHINA

P0819 BIOPSY STRATEGIES FOR ENDOSCOPIC SCREENING OF PRE-MALIGNANT GASTRIC LESIONS

References

P0820 USEFULNESS OF LINKED COLOR IMAGING (LCI) FOR RECOGNITION OF EARLY GASTRIC CANCER AND GASTRIC ADENOMA

Introduction
Laser-enhanced white light imaging (LWLI) is a promising method for early detection of gastric lesions. Effective recognition of early gastric cancer and gastric adenoma by LWLI has been reported [1, 2]. However, LWLI lacks color information, which is important for the recognition of early gastric cancer and gastric adenoma. Therefore, we attempted to verify the usefulness of LCI for recognition of early gastric cancer and gastric adenoma. In this study, we evaluated the usefulness of LCI for recognition of early gastric cancer and gastric adenoma by comparing the recognition scores of LCI with those of LWLI, NBI, and CRP.

Methods
We retrospectively analyzed 29 cases with early gastric cancer or gastric adenoma that underwent endoscopic submucosal dissection (ESD) at our hospital between January 2019 and December 2019. The histological diagnosis of early gastric cancer or gastric adenoma was based on the revised Japanese classification of gastritis, gastric cancer, and other gastrointestinal diseases [3]. We assessed the recognition score of each lesion using LCI, LWLI, NBI, and CRP. The recognition score was evaluated by three endoscopists who were blinded to the histological diagnosis. The recognition score was defined as follows: 0 for no lesions, 1 for superficial lesions, 2 for submucosal lesions, 3 for subserosal lesions, and 4 for intraperitoneal lesions.

Results
In this study, we compared the recognition scores of LCI, LWLI, NBI, and CRP for early gastric cancer and gastric adenoma. The recognition scores of LCI were significantly higher than those of LWLI, NBI, and CRP for early gastric cancer and gastric adenoma. Moreover, the recognition scores of LCI were also significantly higher than those of LWLI, NBI, and CRP for early gastric cancer and gastric adenoma.

Conclusion
In this study, we found that LCI could effectively recognize early gastric cancer and gastric adenoma. Therefore, we believe that LCI is a promising method for early detection of gastric lesions.
Introduction: In gastrointestinal stromal tumors (GISTs) without a risk of metastasis to other organs, local resection is acceptable. In small GISTs, however, it is controversial whether surgical resection is necessary because of a risk of recurrence/metastasis in these tumors are considered to be quite low. Laparoscopic endoscopic cooperative surgery (LECS) is a promising surgical technique as one of minimally-invasive, function-preserving surgeries. By using this technique, we are aggressively resecting gastric SMTs including relatively small ones.

Aims & Methods: To investigate necessity of surgical resection for small GISTs, we retrospectively assessed a malignant potential of these tumors which were resected nonexposed endoscopic wall-inversion surgery (NEWS) (nonexposure LECS technique) as well as feasibility and safety of this technique. Between August 2013 and October 2016, NEWS was conducted in 33 consecutive SMTs which met all of following conditions: possible GIST which was preoperatively diagnosed by histology or imaging modalities, less than 3 cm in size and intramurally growing type by the NEWS procedure, a lesion was resected in a following manner: endoscopic mucosal markings, laparoscopic sero-muscular incision and suturing with the lesion inverted toward the inside of the stomach, endoscopic submucosal tunneling and peroral retrieval. Short-term outcomes of NEWS and a potential risk of recurrence/metastasis in each tumor according the Fletcher’s classification were assessed.

Results: Mean age and the size of the lesion were 59.9 ± 13.7 years-old and 23.3 ± 8.4 mm, respectively. The procedure was successfully completed in all cases in a mean procedure duration of 206 ± 43 min. The patients were discharged without severe adverse events 7.3 ± 1.5 days after the procedure. The first endoscopy after the procedure was performed 5.8 months after discharge in 22 cases, which showed no residual food in the remnant stomach in all cases. Neither apparent impairment of food intake nor disease-related death occurred and a body weight loss was 0.9 ± 2.3 kg during the mean observational period of 16 months. GIST was histologically diagnosed in 20 cases. A risk of recurrence/metastasis in these GISTs was classified into high (2), intermediate (1), low (12) and very-low (5), respectively. In a comparison of two groups (high/intermediate and low/very-low), a mean tumor size and existence of delte formation were 31.7 mm and 21.6 mm (p = 0.036), and 67% and 12% (p = 0.028), respectively.

Conclusion: Some small GISTs which could be retrieved transorally had a high malignant potential, NEWS was feasible, safe and therefore recommended for these tumors including ulcerated GISTs as a minimally-invasive surgical option to avoid additional surgical scar for the retrieval of the specimen and a risk of iatrogenic tumor cell seeding into the peritoneum during the procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
References

histological diagnosis to guide management decisions. Western data on ESD for SE is absent. We aimed to analyse the data from our referral centre.

**Aims & Methods:** A prospectively collected ESD database was analysed to identify patients with SMT of the UGI. All lesions were analyzed for the significance of stent insertion. A total of 62 SEMS were inserted; a retrospective observational study was conducted to compare outcomes, using various performance indicators in patients who underwent SEMS for palliation of UGI SMT. The objective of this study was to compare the outcomes, using various performance indicators, in patients who underwent SEMS for palliation of UGI SMT. The histology of the SMT lesions varied, and the percentage of involvement in each group was assessed.

**Results:** Of 24 patients, 11 were male, and the median age was 47 years. The majority of these cancers were incurable at diagnosis. Therefore, the management is aimed at maintaining quality of life by ensuring adequate nutrition and palliation of symptoms, mainly dysphagia. Self-expandable metallic stents (SEMS) have a well-recognized role in the palliative management of patients with esophageal cancer. These stents are inserted endoscopically, under direct vision (EC) or with fluoroscopic assistance to endoscopically guide in palliative oesophageal stent placement.

**Discussion of Interest:** All authors have declared no conflicts of interest.

**References**

**P0828 CAUSTIC INJURIES OF THE SUPERIOR GASTROINTESTINAL TRACT: 15 YEARS OF EXPERIENCE**

**M. Rocha, T. Moreira, M. Salgado, L. Maia, S. Barrias, I. Pedrito**

**Gastroenterology, Centro Hospitalar do Porto, Porto/Portugal**

**Contact E-mail Address:** martalemosrocha@gmail.com

**Introduction:** Ingestion of caustic substances is relatively frequent and can cause various degrees of harm in the upper gastrointestinal tract, carrying important morbidity and even mortality.

**Aims & Methods:** We aimed to characterize the population assisted for caustic ingestion, the therapeutic approach, complications and risk factors for severe oesophageal lesions. Retrospective cohort of adults presenting due to caustic ingestion between 2000 and 2015. Demographic and clinical data were collected. The endoscopic Zargar classification was applied. We analysed risk factors for severe oesophageal lesions, defined as Zargar 2b-3. Statistical tests: Mann-Whitney, Spearman (significance level 5%).

**Results:** Overall 72 patients were included, with a mean age 53 ± 17 years, 65.3% female. Ingestion was voluntary in 49.3% of the cases, 33.3% had previous suicide attempts. Alkaline substance in 90.4%. Most common symptoms at admission: 60.3% odynophagia, 41.1% epigastric pain, 32.9% vomiting. Orpharyngeal lesions in 41.1%. In 79.5% endoscopy was performed in the first 12 hours. Oesophageal lesions were present in 46.6% of patients (Zargar classification: 1-2.7%, Ha-23.3%, Hb-5.5%, IIIa-6.8%, Hb-8.2%). Gastric lesions in 58.9% and duodenal lesions in 13.7%, 53.4% were hospitalized. 51.3% in intensive/intermediate care units. The mean length of hospital stay was 14.9 days. Medical treatment prescribed: 76.7% proton pump inhibitors, 15.1% corticoids, 15.1% prophylactic antibiotics. Parenteral feeding was initiated in 28.8% of patients. Eight patients required invasive ventilation and two were tracheotomised. Early complications: infections in 12 patients (16.4%), perforations in 2 (2.7%); late complications: stenosis in 7 (9.6%): dilation in 6, surgery in 3. One patient died from gastric perforation after voluntary ingestion of acid. Severe oesophageal lesions were associated with increased inflammatory parameters, tachycardia and/or hypotension at admission and motivated longer hospital stays, requirement of intensive care and further complications (p < 0.002). The ingestion of acidic substances (100% of voluntary intake) was associated with severe oesophageal damage in 3/7 (42.9%) patients, severe gastric lesion in 5/7 (71.4%), acidemia in 5/7 (71.4%), complications in 5/7 (71.4%) and 100% hospitalization.
Conclusion: Early changes in blood tests were seen in severe oesophageal lesions. Severe oesophageal lesions were associated with longer hospitalization and complications (infection/stenosis/perforation). Ingestion of acidic substances was a risk factor for severe digestive lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0029 NOVEL IMAGE ENHANCEMENT TECHNOLOGY USING LINKED COLOR IMAGING WITH ACIDIC ACID INDICOGARME MUXTURE FOR DIAGNOSIS OF EARLY GASTRIC NEOPLASM

Y. Kawahara1, H. Kanazaki1, S. Kawano2, M. Iwamura2, Y. Kono2, T. Gotoda2, H. Sakae1, Y. Baba1, Y. Obayashi2, Y. Okamoto2, H. Okada2
1Department Of Endoscopy, Okayama University Hospital Dept. of Endoscopy, Okayama/Japan
2Department Of Gastroenterology And Hepatology, Okayama University Hospital, Okayama/Japan

Contact E-mail Address: yoshirok@gmail.com

Introduction: A value of the combination of magnifying endoscopy of and image enhancement endoscopy (IEE) technology (e.g. NBI, BLI) is reported in a diagnosis for the early gastric neoplasm. That method is useful, but in order to master it is necessary to learn and familiarize complex classifications. Therefore, this diagnostic method is still more difficult for general endoscopists. Linked Color Imaging (LCI) was recently developed using a laser endoscopic system (Fujifilm Co., Tokyo, Japan). LCI acquires images by simultaneously using narrow-band short wavelength light and white light in an appropriate balance. This combination of light provides more information about the vasculature and architecture on the mucosal surface than that obtained with typical white-light imaging. When we use acidic acid indigocarmine mixture (AIM) with LCI mode, we reported that the magnifying images of early gastric cancer are very clear, three-dimensional and near to real histology. So, we examined the examined the utility of this method.

Aims & Methods: This was a prospective observational study performed at a single tertiary referral center. The subjects are 120 lesions of 115 patients with gastric neoplasm. We are intended to the endoscopic submucosal dissection (ESD), and were given preoperative endoscopy in our hospital from September 2014 to February 2017. Firstly we observed the lesions by magnifying endoscopy with the BLI mode and diagnosed using VS classification system. Secondly we observed the lesions by magnifying endoscopy with LCI+AIM method and diagnosed using VS classification system. Furthermore, we classified tumor differentiation into high differentiation, moderately differentiated, and poorly differentiated by its surface pattern. Finally, we classified the visualization ability of the surface fine structure, LCI, Visible and Invisible and evaluated it. We carried out ESD and compared the image with the histopathology.

Results: By the results, 92 lesions were gastric cancer and 28 lesions were gastric adenoma. The differentiation ability of a cancer and the non-cancer (adenoma) did not have the significant difference between the BLI mode and the LCI+AIM methods. Diagnosis of differentiation of gastric cancer was correct in 87 of 92 cases (94%). In the classification of visualization ability, 32 lesions were Clear, 44 lesions were Visible, 44 lesions were Invisible by BLI mode. On the other hand, 45 lesions were Clear, 64 lesions were Visible, 11 lesions were Invisble by LCI. In the visualization ability of the surface fine structure, LCI+AIM method is significantly clearer than BLI mode (p < 0.001).

Conclusion: When we use AIM, indigocarmine accumulates in pit of the duct, and duct structures become clear by the acidic acid. By LCI mode, we can observe the vascular pattern of the lesion clearly. So by the combination of AIM and LCI, we can observe the endoscopic images closer to actual histological images. By this method, we can compare histopathology with an endoscopic image intuitively, so we believe that a magnifying endoscopy diagnosis of the gastric cancer is enabled even if we do not use various confusing classifications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0030 THE SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC NEOPLASMS IN PATIENTS AGED 85 YEARS OR OLDER

Y. Sumida1, T. Kuwai1, K. Tao1, S. Funaki1, Y. Miyasako1, T. Takasago1, H. Kouno1, H. Kohno1, S. Ishig1
1Gastroenterology, Kure MC & Chugoku CC, Kure/Japan
2Gastroenterology, Dudley Group Hospitals NHS Foundation Trust, Dudley, United Kingdom

Contact E-mail Address: sumiday@kure-nh.go.jp

Introduction: Endoscopic submucosal dissection (ESD) is one of the most useful methods for treating early gastric neoplasms. The advantages of ESD include the ability to control the size and shape of the resection, permitting en bloc resection of large and ulcerated lesions. The frequency of gastric ESD for patients aged 85 years or older has increased along with an increase in the elderly population. However, few studies have reported the short-term and long-term outcomes of gastric ESD in elderly patients.

Aims & Methods: The aims of our study were to evaluate and compare the efficacy, safety, and clinical outcomes of gastric ESD in patients aged 85 years or older, and in younger patients. The subjects were 705 patients who collectively presented with 876 gastric tumors (288 adenomas and 588 early gastric cancers. All patients underwent ESD at our hospital between June 2007 and December 2016. Patients were divided into two groups: elderly (aged ≥85 years, consisting of 59 patients with a collective 71 lesions) and non-elderly (Group B: aged <85 years, consisting of 646 patients with a collective 805 lesions). We evaluated the clinical and pathological findings, resection rates, complications, and long-term outcomes, including the survival rate. The local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection. The 3- and 5-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort.

Results: The patients’ mean ages were 87 (Group A) and 71 years (Group B), and the male-to-female ratios were 30/29 (Group A) and 646/805 (Group B). No significant differences were found in the mean tumor size for Group A (15 mm) and Group B (20 mm). Regarding histopathological findings, the prevalence rates of tubular adenoma were 28.3% (21/71; Group A) and 33.8% (267/805; Group B). Infiltrated mucosal carcinomas, 52.1% (37/71; Group A) and 53.8% (433/805; Group B); shallow submucosal invasive carcinomas (<500 μm), 7.0% (5/71; Group A) and 6.5% (52/805; Group B); and deep submucosal invasive carcinomas (>500 μm), 11.3% (8/71; Group A) and 6.6% (53/805; Group B). Once again, the groups showed no significant differences. The en bloc resection rates were 97.1% (728/782 lesions; Group A) and 97.9% (748/782; Group B), and the curative resection rates were 78.6% (56/71; Group A) and 86.3% (695/805; Group B). Among the non-curative cases, 13 (86.6%) of the 15 patients in Group A and 46.3% of the 110 patients in Group B were given non-curative resection. These results were significantly higher for Group B than for Group A. Concerning complications, the postoperative hemorrhage rates were 2.8% (2/71 patients; Group A) and 2.6% (12/479 patients; Group B), and the perforation rates were 0% (0/71; Group A) and 0.4% (4/805; Group B). Regarding long-term outcomes, analysis of recurrence revealed the local and distant recurrence rates to be 0% for Group A and 0.9% (7/746; local) and 0.1% (1/746; distant) for Group B. Regarding survival analysis, the median overall survival period in Group A and Group B was 839 days and 1156 days, respectively. There were no significant differences observed in the survival rates. 6 (10.0%) of 59 patients in Group A and 54 (9.3%) of 646 patients in Group B died, and disease-specific mortality rates in Groups A and B were 0% (0/59) and 0.8% (5/646), respectively.

Conclusion: Gastric ESD in patients aged 85 years or older can be effectively and safely performed. According to the long-term outcomes, gastric ESD performed as a local resection (total biopsy) in elderly patients may be acceptable, even in non-curative cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0031 RESULTS FROM THE FIRST UK VIRTUAL COMPLEX POLYP MDM

A. Chatterjee, M. Rutter
Gastroenterology, University Hospital of North Tees, Stockton on Tees/United Kingdom

Contact E-mail Address: amit.chatterjee@nhs.net

Introduction: Data from the UK Bowel Cancer Screening Programme (BCSP) has established that the assessment and management of large non pedunculated colorectal polyps (LNPCPs) varies markedly, leading to variable and often suboptimal outcomes, especially for the most complex lesions. A multicentre complex polyp multidisciplinary team meeting was created within the North East of England BCSP with the aim of ensuring more robust decision making and management of complex LNPCPs.

Aims & Methods: A virtual multicentre MDM was conducted via audioconferencing within the North East of England between 2014-6 to discuss complex LNPCPs (LNPCPs with increased risk of malignancy or complexity associated with endotherapy, as defined in the SBCG/ACPGBI guidelines). Non-discussed cases (KPIs) from the BSG/ACPGBI guidelines.2

Results: 61 complex LNPCP cases were managed via the MDM with 8 excluded from analysis (7: managed prior to MDM referral, 1: MDM advice not followed), 27 lesions were managed with primary endotherapy, 23 with primary surgery and 3 cases conservatively. Of the endoscopies, 2 required surgery due to endotherapy failure leading to a finding of malignancy. 12-month recurrence was 8.7% with no reported complications. The rate of surgical management using the SBCG/ACPGBI KPI (including only surgically managed benign lesions or lesions subject to failed endotherapy) was 39.5%. The en-bloc resection

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rate of complex LNPPCs with features suggestive of increased malignancy risk was 20%. Breakdown of Outcomes (n = 53) *Primary endoscopic therapy, (n = 27) -23 excised with curative intent -21 cases with no recurrence at 1 year 7 cases with recurrence (8.7%) both <1 cm and managed endoscopically -4 required secondary surgery -2 failed endotherapy -2 proved to be malignant *Surgical Management (n = 5) -10/23 malignant lesions (43.5%) -9/23 subject to transanal surgery (39.1%) *Conservative management (n = 3) Breakdown via High risk features of malignancy/SMSA4/SMSA3 (n = 53) *High risk features of malignancy (any SMSA score) (n = 29) -17 endoscopically managed (14.0%); 2 ESD -27 (28.6%) cases (both managed with pEMR) malignant -13 transanal surgical (41.3%); transanal surgery: 9/13 malignant (69.2%); -1 managed conservatively *SMSA 4 (n = 25) -12 managed endoscopically -2 failed endoscopically -2 due to technical considerations) -5/12 malignant (25%); -1 managed conservatively *SMSA3 (n = 7) -4 managed endoscopically -2 management surgically (both lesions originating from within appendix) -1 managed conservatively: Conclusion: 61 complex LNPPC cases were managed via the MDM with 8 excised from analysis (7: managed prior to MDM referral, 1: MDM advice not followed). 27 lesions were managed with primary endotherapy, 23 with primary surgery and 3 cases conservatively. Of the endoscopic cases, 2 required surgery due to failed endotherapy and 2 due to a finding of malignancy. 12 month recurrence was 8.7% with no reported complications. The rate of surgical management using the BSC/APCGBPI KPI (including only surgically managed benign lesions or lesions subject to failed endotherapy) was 39.5%. The en-bloc resection rate of complex LNPPCs with features suggestive of increased malignancy risk was 71.4%.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0832 DIFFERENCES IN DISTRIBUTION OF SIZE, SHAPE AND SERRATED HISTOLOGY OF COLORECTAL ADENOMAS BETWEEN ENDOSCOPISTS WITH LOW (<20%) AND HIGH (≥20%) ADENOMA DETECTION RATE

D. Penu1, E. Waldmann2, A. Hinterberger2, B. Majcher3, A. Dokladanska3, A. Szymanska4, M. Trauner5, M. Ferlitsch3
1Department Of Internal Medicine III, Division Of Gastroenterology & Hepatology, Medical University of Vienna, Vienna/Austria
2Department Of Medicine III, Head of Division of Gastroenterology and Hepatology - Department of Medicine III, Head of Division, Vienna/Austria
3Quality Assurance Working Group, Austrian Society of Gastroenterology and Hepatology (OEGGH), Vienna/Austria

Contact E-mail Address: danieila.penu@meduniwien.ac.at

Introduction: Patients of endoscopists with high (≥20%) adenoma detection rate (ADR) have less risk for interval cancer than those of low ADR (<20%). Lesion-related-factors, such as size, shape and histology influence the decision-making of physicians with high ADR to detect more flat and serrated adenomas than those with low ADR. Aims & Methods: Our study aim is to investigate the differences of size, shape and serrated histology of adenomas between low- and high-ADR group in our screening cohort. We analyzed 2,534 screening colonoscopies performed by 265 endoscopists between 2007 and March 2017 within the austrain certificate of screening colonoscopy. T-Test was used to assess differences. Results: 39.1% of endoscopists were categorized in the ADR low- and 60.9% in the ADR high-group. Overall, mean ADR was 23.06% (SD 0.55) with a minimum of 0.39% and a maximum of 48.72%. In the low-ADR-group mean ADR was 14.56 (SD 0.42) and 28.51 (SD 0.50) in the high-ADR group. Relating to size, there was a significant difference (p = 0.029) in detection of adenomas of 1–2 cm with a mean of 8.44% (SD 6.02) in low- vs. 10.22% (SD 6.64) of all adenomas in high-ADR group but no differences between adenomas <0.5 cm, 0.5–1 cm and those bigger than 2 cm. Regarding shape, proportion of pedunculated adenomas in low-group-ADR differ significantly higher (p = 0.002), with a mean of 19.36% (SD 14.60) vs. 17.40% (SD 9.55) but there were no differences between flat and sessile adenomas. With a mean proportion of 4.34% (SD 5.61) vs. 6.64% (SD 5.97), the proportion of sessile serrated adenomas (SSA) differ significantly between low-ADR vs. high-ADR group (p < 0.01). There was no significant difference regarding traditional serrated adenomas (p = 0.800).

Contact E-mail Address: josecarlos.marin@salud.madrid.org

Introduction: ESD is a complex procedure, mainly in non-Asian countries where the learning process is not well established. Results may be improved in Western countries. Our group, with a careful selection of lesions for ESD and avoiding those with greater chance of technical difficulty. Factors predicting technically difficult ESD when it is performed by non-Asian endoscopists should be clarified. Aims & Methods: We aimed to identify the potential risk factors that are associated with a higher technical difficulty during ESD in a Western European setting where there are no available Asian experts. We prospectively recorded consecutive ESD cases performed by members of the ESD Working Group of the Spanish Society of Digestive Endoscopy. Demographic and clinical characteristics of the patients, location and morphology of the lesions, and technical factors were collected. We defined difficult ESD as those aborted procedures, time-consuming (duration >180 min.) or when changing the technique to piecemeal resection was needed to remove the tumor. Analyses were carried out using IBM SPSS software for Windows (IBM Corp., Armonk, NY, USA). Parametric continuous variables are reported as the mean ± standard deviation (SD). A Kolmogorov-Smirnov test was used to evaluate normal distribution. Categorical variables are reported as either frequencies or percentages. Statistical differences between the groups were analyzed using the chi-squared method for categorical data. The meaningful variables with a p value <0.1 in the univariate analysis were included in the logistic regression model. Multivariate analysis was performed using binary logistic regression methods. Odds ratios (ORs) and 95% confidence intervals (CI) were calculated to assess the strength of the influence of each individual variable.

Results: We included 265 lesions in 265 patients (mean age ± SD: 69 ± 10; 150 males (56.6%)). They were recruited in 15 Spanish University Hospitals between January 2016 and March 2017. Location of the lesions were: esophagus (n = 7; 2.6%), cardia (n = 5; 1.8%); stomach (n = 48; 18.1%); duodenal bulb (n = 1; 0.3%); colon (n = 144; 54.3%) and rectum (n = 60; 22.6%). Mean lesion size was 38.6 ± 18.5 mm. Median duration of the procedure was 105 min. (8-375). In 73 cases (27.5%) criteria for difficult ESD were fulfilled. Endoscopic resection was aborted in 7 cases (2.6%). When endoscopic resection was achieved (n = 258; 97.3%) both situations, duration >3h and a piecemeal resection, were noted in 21 (8.1%) patients. Duration >3h in 25 cases (9.7%) and unsuccessful en bloc...
resection in 20 (7.7%) were observed in isolation, respectively. Table 1 shows the univariate and multivariate analysis of factors regarding technically difficult ESD.

Table 1: Univariate and multivariate analysis of possible factors related to technically difficult ESD.

<table>
<thead>
<tr>
<th>Variables</th>
<th>UNIVARIATE ANALYSIS</th>
<th>MULTIVARIATE ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure</td>
<td>OR (C.I. 95%) p</td>
<td>OR (C.I. 95%) p</td>
</tr>
<tr>
<td>Case load ≤10</td>
<td>0.8 (0.4–1.6) 0.5</td>
<td>0.9 DTO09.49-94.9) 0.06</td>
</tr>
<tr>
<td>2 endoscopists (vs. 1 operator)</td>
<td>20.6(5.9–72.6)</td>
<td>&lt;0.0001 97.0(9.9-94.9) 0.06</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>2.6 (1.2–5.7) 0.01</td>
<td>2.2 (0.6–8.3) 0.2</td>
</tr>
<tr>
<td>Stomach</td>
<td>0.5 (0.2–1.0) 0.06</td>
<td></td>
</tr>
<tr>
<td>Size &gt;30 mm</td>
<td>2.3 (1.3–4.4) 0.004</td>
<td>5.0 (1.7–14.4) 0.003</td>
</tr>
<tr>
<td>Recurrent tumor</td>
<td>3.2 (1.3–8.1) 0.008</td>
<td>8.1 (1.4–45.9) 0.02</td>
</tr>
<tr>
<td>Protruded morphology</td>
<td>0.9 (0.5–1.9) 0.9</td>
<td></td>
</tr>
<tr>
<td>Depressed component</td>
<td>0.6 (0.2–1.7) 0.4</td>
<td></td>
</tr>
<tr>
<td>Poor manoeuvrability</td>
<td>3.5 (1.7–7.5) 0.001</td>
<td>3.5 (1.4–8.7) 0.006</td>
</tr>
<tr>
<td>Previous biopsy</td>
<td>1.0 (0.6–1.8) 0.9</td>
<td></td>
</tr>
<tr>
<td>Submucosal invasion</td>
<td>1.3 (0.5–3.7) 0.6</td>
<td></td>
</tr>
<tr>
<td>Severe submucosal fibrosis</td>
<td>3.3 (1.7–6.4) 0.0002</td>
<td>1.3 (0.4–4.4) 0.6</td>
</tr>
<tr>
<td>Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intraprocedural bleeding</td>
<td>4.1 (1.9–8.7) 0.0003</td>
<td>5.1 (1.3–19.9) 0.02</td>
</tr>
</tbody>
</table>

Conclusion: The factors independently associated with technically difficult ESD (absorbed procedures, time-consuming or finished with a piecemeal resection) were: lesion size >30 mm, poor manoeuvrability, recurrent lesions and intraprocedural bleeding. Except for the last one, the remaining factors can be identified during the first diagnostic endoscopy. Endoscopists who will start performing ESD should try to avoid these difficult procedures in the early part of their learning curves.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: The aim of this study was to investigate the feasibility and safety of LECS procedure applied with endoscopic submucosal dissection (ESD) technique obtained adequate surgical margin. We performed ESD on 1376 colorectal tumors in 1341 patients (male: 777; 65.0% mean age, 66.1 years). Among these cases, six cases had perforation (0.4%), and three of six cases required emergent surgery. We examined the cause of perforation and the limit of ESD from the view point of safety. We performed one-piece resection for 11 cases (male: 7; 44.6% mean age, 63.5 years) of colorectal tumors using LECS procedure. In the first, the indication of LECS is at high risk of the perforation by the treatment of ESD and EMR and is the lesion that safety cannot secure. In addition, the indication is the lesion which is curable by the local excision without lymph node dissection. Therefore, submucosal invasive (T1) cancer with the risk of lymph node metastases does not become the indication for this full-thickness resection technique. From the above-mentioned basic concept, indications of the LECS procedure for colorectal tumors were thought to be as follows: 1) Intra- mural carcinoma (Tis) and adenoma with high-grade atypia (Vienna Classification:Category 3, 4) accompanied by wide and severe degree fibrosis in the submucosal layer (tumor recurrence after endoscopic and surgical resection); 2) submucosal tumors; 3) Intra-mucosal carcinoma (Tis) and adenoma with high-grade atypia involved appendix or diverticulum. We examined the clinical and pathological outcomes of LECS procedure in 11 cases.

Results: Four of six cases that caused perforation in ESD were cases with fibrosis in the submucosal layer. Three cases of those were moderate to severe degree fibrosis cases, and a limit of ESD seemed to exist in these lesions from the viewpoint of safety and curability. We accomplished full-thickness resection successfully for 11 cases using LECS procedure as follows: 5 cases of Tis cancer, 4 cases of adenoma, 1 case of schwannoma, and 1 case of GIST. The reason why we judged as the indication of LECS procedure were as follows: three cases accompanied by severe degree fibrosis, 2 cases involved diverticulum, 3 cases involved appendix, 2 cases of submucosal tumor, and 1 case of poor endoscopic operability. These cases were considered a limitation of ESD due to the high risk of perforation. Operative time was an average of 195.8 minutes (127 to 332), and the perioperative bleeding was an average of 8 g/dl (3 to 20). We experienced no complications, and average post-operative hospital stay was 7.7 (6 to 12) days. Histological examination of the resected specimens revealed negative lateral and deep margins. The postoperative follow-up was carried out first a half year later, and it was every one year subsequently. In the above-mentioned follow-up schedule, blood examination, colonoscopy, CT scan were performed for clinical evaluation. The residual/local recurrence case was absent for 31.6 months (range 10-60 months) for the mean follow-up period. Also, without complications such as postoperative anastomotic stricture or adhesive ileus, we followed favorable course.

Conclusion: We developed a LECS procedure to overcome the limit of ESD, and completed full-thickness one-piece resection of the tumors considered as high risk of perforation in the endoscopic treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Patient experience is increasingly recognised as a key measure of quality of care. Ensuring positive experience is important to patients and fundamental in maximising participation in screening programmes and re-attendance for surveillance procedures. Current measures of patient experience of gastrointestinal (GI) endoscopy are clinician derived. (1) Patient Reported Experience Measures (PREMs) should be patient derived and incorporate pre- and post-procedure experience. We aimed to identify themes considered as important to patients undergoing GI procedures as a basis for developing PREMs.

Aims & Methods: We aimed to identify themes important to patients undergoing GI investigations, to enable questionnaire development. Patients who had undergone upper or lower GI investigations (gastroscopy, colonoscopy and CT pneumocolon) were invited to attend for a semi-structured interview. Thirty-two interviewees were purposefully sampled to ensure diversity. Interviews were conducted by a research fellow trained in qualitative methods and were audio recorded and transcribed verbatim. Recruitment continued until saturation was achieved.

Results: Six over-arching and inter-linking themes emerged across all procedures: anxiety, expectations, choice/ control, communication/information, comfort and embarrassment/dignity. Relation of themes was seen e.g. if the procedure appointment was sooner than expected, patients were anxious about the potential outcome. Choice was important in terms of appointment, endoscopist and choice of pre-medication, however it was highly individualised. Communication prepared patients and managed expectations, with one patient describing poor endoscopist communication affecting the whole experience. Patients described embarrassment related to changing and waiting areas; sensitive nature of the test; exposure and physical reaction. Discomfort during the procedure was attributed to instrument and air insertion.

Conclusion: Despite heterogeneity between procedures consistent themes related to patient experience emerged. This work will be used to develop PREMs for bowel endoscopy.

Disclosure of Interest: L.J. Neilson: Research post previously funded by Aquilant endoscopy
C.J. Rees: Colin Rees has received research grants from ARC medical, Olympus Medical, Aquilant endoscopy, Norgine, travel grants from Boston scientific and Cook medical and speaking grants from Norgine and Olympus. All other authors have declared no conflicts of interest.

Reference

P0838 RANDOMIZED CONTROLLED TRIAL OF ABDOMINAL VIBRATION STIMULATION AND WALKING EXERCISE FOR BOWEL CLEANSING PRIOR TO COLONOSCOPY
Gastroenterology, Ajou university School of Medicine, Suwon/Korea, Republic of

Contact E-mail Address: cknoh23@gmail.com

Introduction: Adequate bowel preparation is important to perform colonoscopy for accurate mucosal examination, lesion detection and treatment. Walking exercise is known to be effective for colon cleansing. However, it is difficult for patients with uncomfortable walking to improve the status of bowel cleansing.

Aims & Methods: Therefore, we prospectively evaluated the clinical feasibility and clinical validity of the abdominal vibration stimulation for bowel cleansing.
preparation. In this randomized, prospective, investigator-blind study and single center, 141 inpatients for elective colonoscopy were randomized to two groups. PEG solution was used for bowel cleaning in all patients. The one is walking over 3000 steps and the other is having abdominal vibrator more than 30 minutes before colonoscopy. After examination we recorded procedure results, sedation information, patient's satisfaction and adequacy of bowel preparation by using the Boston Bowel Preparations Scale (BBPS).

Results: There were no significant differences between vibrator group (n=75) and walking group (n=66) in bowel preparation quality (Total BBPS 7.40 vs 7.23, p=0.519), withdrawal time (30.40 vs 30.05 mins, p=0.829), number of polyps (4.09 vs 3.17, p=0.085), patient satisfaction (4.39 vs 4.12, p=0.249) and number of diarrhea after taking PEG (11.49 vs 11.42, p=0.903). Viscosity was superior than walking group in time of first defecation after taking PEG (112.80 vs 123.42 mins, p=0.005) and ecall intubation time (6.23 vs 8.52 mins, p=0.011).

Conclusion: Bowel preparation accompanied with abdominal vibration stimulation showed almost similar results to a walking group which was conventional methods for adequate bowel preparation. The patients with the condition which cause uncomfortable gait such as old age, CVA, Parkinsons, or joint disease, bowel preparation with abdominal vibrator is expected to help in proper bowel cleansing for therapeutic colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0839 COMPARATIVE STUDY OF ELECTRICAL AND RHEOLOGICAL PROPERTIES OF DIFFERENT SOLUTIONS TO PERFORM SUBMUCOSAL INJECTION
1. Bon1, V. Lorenzo-Zúñiga1, V. Moreno De Vega1, A. Rodríguez2, N. D. De La Osa1, I. Martínez3, A. Boix1, R. Bartolín1
1Endoscopy/Ter Group, Germans Trias/IGTP, Badalona/Spain
2University Hospital Germans Trias, Badalona/Spain
3Pathology Department, University Hospital Germans Trias, Badalona/Spain
4IGTP/CIBEREd, Badalona/Spain
Contact E-mail Address: ibon@igtp.cat

Introduction: Rheological properties of the submucosal cushioning solutions are crucial to avoid complications secondary to endoscopic resections. Electrical resistance (R) of a substance is a measure of the difficulty to pass an electric current through that solution. The higher the R, the resection will be quicker, easier and safer, with less temperature increase. Our group has developed a new solution to perform submucosal injection (TriBio).

Aims & Methods: To analyze the electrical (R) and rheological (temperature, viscosity, height and lasting of the cushion) properties of different submucosal solutions in an ex vivo model of porcine stomach. Tested solutions were: Saline (S), Glyceol (GC), Hyaluronic acid (HA), Distilled water (DW), Platelet-rich Plasma (PRP), Glucosated saline 10% (GS), Gelaspan (GP), TriBio (TB) and PRPþTB. Measurements were done at time 0 and 30 minutes.

Results: The solutions that showed the best basal R were: PL, HA, GS, TB and TB+PRP. At 60 minutes, the best R were: PRP, TB, PRP+TB, HA and GS. The best durability at 60 minutes was for TB, PRP, TB+PRP and PL that maintained the height at around 80% of its original in comparison to the other substances with were at around 60%. During the resection the solutions that underwent a lower temperature increase were: TB+PRP, PL, and TB.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References
1. 2016 Commonwealth Fund International Health Policy Survey of Adults.

P0840 PATIENT SATISFACTION RELATED TO QUALITY OF INFORMATION GIVEN THROUGHOUT COLONOSCOPY
S. Sjöblom1, S. Jakobsso1, J. Rylander1, M. Simrén1, P. Stötzer1, G. Ringström1
1Department Of Gastroenterology, Sahlgrenska University Hospital, Gothenburg/Sweden
2Centre For Person-centered Care, Institute of Health and Care Sciences, University of Gothenburg, Gothenburg/Sweden
3Institute Of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden
Contact E-mail Address: sara.sjoblom@vgregion.se

Introduction: Patients with chronic diseases, such as inflammatory bowel disease, experience a lower degree of being involved in health care than others. Compared with other countries Swedish patients report lower possibility to be involved in their care and receive less information about care (1).

Aims & Methods: To investigate the perception of written and oral information given before and after a colonoscopy, the perceived knowledge of planned follow-up and preference to be more involved in decisions/participate in their care in different patient groups. Outpatients (≥18 y) undergoing colonoscopy (all indications) were consecutively included (n=862). Before the procedure patients completed questionnaires regarding sociodemographic data and the written information about bowel preparation and examination. After the procedure patients reported their perceptions about the information provided regarding the colonoscopy and the follow-up.

Results: Data from 862 patients were analyzed (447 females) (mean age 52; 18-90 y) A large number of patients (n=740, 87%) rated the written information sent home before the colonoscopy as distinct, while a subset (n=110, 13%) rated it as indistinct/very indistinct. When questions of importance were asked to the medical staff during the colonoscopy most patients were content with the answers from the physician or nurse. A small proportion of patients (n=57, 7%) stated that they received too little information or that they did not understand the information about the colonoscopy results; these patients were mainly younger (<50 y) (p<0.001). The majority of the patients (n=602, 74%) reported thorough knowledge about the follow-up, while 26% (n=207) lacked this knowledge. More than 1/3 (n=275) of the patients wished to be more involved in decisions regarding their care and treatment. Desire for a higher degree of involvement were more pronounced in patients <40 y (p=0.05) and in patients with IBD (p=0.05) compared to patients with other indications for colonoscopy. Patients referred from outpatient clinics in the hospital desires a higher degree of involvement than patients referred from primary care (p<0.01).

Conclusion: The majority of the patients undergoing colonoscopy reported that they received satisfactory information about the procedure and preparation. However, there is room for improvement regarding follow-up information and patients’ involvement in their care and treatment. Specifically, improvements seem warranted for younger patients and patients with chronic diseases, such as IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References
1. 2016 Commonwealth Fund International Health Policy Survey of Adults.
A SKIRT
NEOPLASIA OF RECTAL LATERALLY SPREADING TUMORS WITH

P0841 THE INCIDENCE OF SYNCHRONOUS ADVANCED
NEOPLASIA OF RECTAL LATERALLY SPREADING TUMORS WITH
A SKIRT

Department Of Gastroenterology, Saku Central Hospital Advanced Care Center, Saku, Nagano Japan

Contact E-mail Address: shou0122@hotmail.com

Introduction: A “skirt” is a slightly elevated flat lesion with wide pits occasionally observed at the margin of laterally spreading tumors (LSTs), and rectal LSTs with a skirt had significantly more skirt lesion in comparison to colonic LSTs. Although the clinicopathological, endoscopic, and molecular characteristics of LSTs with a skirt have been reported [1], there are no reports concerning the incidence of synchronous neoplastic lesions of rectal LSTs with a skirt.

Aims & Methods: The aim of this retrospective study was to clarify the incidence of synchronous advanced neoplasia (AN) of rectal LSTs with a skirt. A total of 13,116 cases underwent colonoscopy in our hospital between January 2012 and June 2016. Of these, 101 consecutive rectal LSTs were examined to assess the incidence of synchronous AN detection rate and the number of AN according to the location of AN lesion; divided into the right colon, left colon and rectum. A skirt was defined on the basis of the following endoscopic findings: spreading across the margins of the LST, consisting of a slightly elevated flat lesion, and containing wide pits. AN was defined as the presence of any of the following features: adenomas larger than 10 mm, adenomas with villous histology or high-grade dysplasia including intra-mucosal carcinoma and invasive cancer.

Synchronous advanced neoplasias of rectal LSTs with and without skirts

<table>
<thead>
<tr>
<th>Patients with advanced neoplasia</th>
<th>Rectal LSTs with skirts</th>
<th>Rectal LSTs without skirts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5 (20.0%)</td>
<td>36 (47.4%)</td>
</tr>
<tr>
<td>Right colon</td>
<td>2 (8.0%)</td>
<td>23 (30.3%)</td>
</tr>
<tr>
<td>Left colon</td>
<td>1 (4.0%)</td>
<td>21 (27.6%)</td>
</tr>
<tr>
<td>Rectum</td>
<td>3 (6.0%)</td>
<td>5 (6.6%)</td>
</tr>
</tbody>
</table>

Number of advanced neoplasia

<table>
<thead>
<tr>
<th>Number of advanced neoplasia</th>
<th>Patients with advanced neoplasia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7</td>
</tr>
<tr>
<td>Right colon</td>
<td>2</td>
</tr>
<tr>
<td>Left colon</td>
<td>2</td>
</tr>
<tr>
<td>Rectum</td>
<td>3</td>
</tr>
</tbody>
</table>

Results: A skirt was observed in 25 of 101 rectal LSTs (24.8%). Rectal LSTs with a skirt (median age 69 years, 52% female, mean size 51.7 ± 27.1 mm) had 22 high-grade dysplasia and 3 submucosal carcinomas, and rectal LSTs without a skirt (median age 72 years, 34% female, mean size 24.7 ± 16.0 mm) had 8 low-grade dysplasia, 45 high-grade dysplasia, and 23 submucosal carcinomas, respectively. The overall AN detection rate in rectal LSTs with a skirt (20.0%) was significantly lower compared with rectal LSTs without a skirt (46.8%, p = 0.02). As for the analysis of AN detection rate according to the location, there were significant differences in the right colon (8.0% vs 29.9%, p = 0.03) and the left colon (4.0% vs 27.3%, p = 0.01) between LSTs with and without a skirt. In contrast, there was no significant difference with respect to the rectum (6.0% vs 6.5%, p = 0.41). The total number of AN in rectal LSTs with a skirt (n = 7; right colon: 2; left colon: 2 and rectum: 3) was significantly lower than in rectal LSTs without a skirt (n = 74; right colon: 35; left colon: 34 and rectum: 5). There were significant differences in the right colon (p = 0.03) and the left colon (p = 0.04), while, there was no significant difference between these groups with respect to the rectum.

Conclusion: The rectal LSTs with a skirt had significantly lower synchronous advanced neoplasia than rectal LSTs without a skirt, especially in the right and left colon. Our results may suggest that rectal LSTs with a skirt have different characteristics compared with rectal LSTs without a skirt in terms of the incidence of synchronous neoplastic lesion.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0842 EVALUATION OF MUCOSAL HEALING WITH SHIELDS BASED ON DIFFERENT HYDROGELS IN A RAT MODEL OF THERMAL INJURY

I. Bon1, R. Bartolí2, V. Moreno De Vega3, J. Boix1, N. D. De La Osa3, I. Marin1, V. Lorenzo-Zúñiga4
1Endoscopy/ier Group, Germans Trias/IGTP, Badalona/Spain
2IGTP/CIBERehd, Badalona/Spain
3Pathology Department, University Hospital Germans Trias, Badalona/Spain

Contact E-mail Address: ibon@igtp.cat

Introduction: Endoscopic resection of large lesions leads to extensive mucosal defects and submucosal exposure, with a substantial risk of adverse events. The prevention of these complications is inefficient with current methods. Endoscopic shielding, as a simple and safe technique, has been proposed to improve mucosal restoration, and therefore, the incidence of these events. Previous reports have confirmed the efficacy of the placement of hydrogels based on platelet-rich plasma (PRP) (1) or hialuronic acid with other substances (TriBio) (2), but never the combination of both hydrogels, in the prevention of delayed complications after mucosal damage.

Aims & Methods: To assess the efficacy of endoscopic shielding with the combination of PRP and TriBio in a rat model of thermal injury. Thermal injury was obtained according to our rat model (3). Lesions were performed in male Sprague-Dawley rats (400–450 g) under general anesthesia. Animals were randomized to receive one of the following shields onto the lesions: PRP + TriBio, PRP and TriBio. Rats underwent endoscopic follow-up at 7 days and 2 weeks. Afterwards, animals were sacrificed and ulcers sites were macroscopically and histopathologically evaluated.

Results: Animals treated with PRP + TriBio obtained the best results in comparison with other hydrogels (PRP and TriBio). Mucosal healing rate (percentage of mucosal restoration) at 14 days was significantly higher with PRP + TriBio (100% vs 82% and 90%; p < 0.05). Histological study confirmed these data, showing total restoration of mucosal layer with PRP + TriBio

Conclusion: The use of a combination of two covering agents (TriBio and PRP) is the best approach to obtain mucosal healing in a rodent model of endoscopic thermal injury in colon.

Disclosure of Interest: R. Bartolí: Authorship of the patent J. Boix: Authorship of the patent V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References


P0843 EFFICACY OF ENDOSCPIC PLACEMENT OF A DRUG-ELUTING PLATFORM WITH DIFFERENT ANTI-TUMORAL AGENTS TO EVALUATE ACUTE NECROSIS IN AN AZOXYMETHANE-INDUCED COLONIC TUMOURS IN RATS

R. Bartolí1, I. Bone2, V. Moreno De Vega2, J. Boix2, N. D. De La Osa3, I. Marin1, V. Lorenzo-Zúñiga3
1IGTP/CIBERehd, Badalona/Spain
2Endoscopy/ier Group, Germans Trias/IGTP, Badalona/Spain
3Pathology Department, University Hospital Germans Trias, Badalona/Spain

Contact E-mail Address: rbartolisole@gmail.com

Introduction: Colonic tumors have become massive in the last years since colorectal cancer (CRC) is becoming a prevalent disorder. The next frontier of this technique will be to provide an active substance in a precise site of the colon (targeted therapy). This has many advantages (targeted therapy, dose adjustment, limiting side effects, assessment of mucosal healing, etc.); however, this selective and direct administration of drugs is not possible nowadays, but it is a true challenge. Following these evidences we have developed drug eluting platform to locally treat CRC lesions.

Aims & Methods: To evaluate the efficacy of intratumoral injection of our drug-eluting platform with different combinations of these antitumoral drugs (albumin, etuximab 16 mg/mL, panitumumab 6 mg/mL, irinotecan 3.5 mg/mL and bevacizumab 5 mg/mL) in a rat model of azoxymethane-induced colonic cancer. Rats underwent endoscopic follow-up at 1 and 2 weeks after endoscopic therapy. Afterwards, animals were sacrificed and tumors were excised and macroscopically and histopathologically evaluated.
Results: Intramural injection was feasible in all animals with no adverse events. Biopsy size of tumors ranged from 6 to 8 mm. Approximately 1:2 in comparison with anti-EGF obtained the best results (significantly reduction in size and cell necrosis). However, only albireceptor showed total acute tumoral necrosis.

Conclusion: Intramural injection of anti-VEGF in a drug-eluting platform is able to produce tumoral necrosis in an experimental model of CRC. This technique could open a new way to manage CRC.

Disclosure of Interest: R. Bartoli: Authorship of the patent

J. Boix: Authorship of the patient

V. Lorentius: Authorship of the patient

All other authors have declared no conflicts of interest.

P0844 A THREE-DIMENSIONAL IMAGING SYSTEM IMPROVES THE ENDOSCOPIC VISIBILITY OF NON-POLYPOID COLORECTAL NEOPLASMS

T. Matsumura, D. Maruoka, K. Okimoto, N. Akizue, T. Nakagawa, H. Ishigami, M. Ara, N. Kato
Department Of Gastroenterology, Graduate School of Medicine, Chiba University, Chiba City,Japan

Contact E-mail Address: matsumura919@yahoo.co.jp

Introduction: A three-dimensional (3D) imaging technique has been developed in the medical field. Previous research reports that simulated 3D colonoscopy improves the detection of colonic lesions [1]. A novel 3D imaging system has been recently developed, which can create 3D virtual video images from conventional two-dimensional (2D) endoscopic images [2]. However, actual cases have not been studied.

Aims & Methods: This study aimed to investigate whether the 3D system can improve the visibility of colorectal neoplasms compared with conventional 2D endoscopy.

We included non-polypoid colorectal neoplasms and recorded their videos using conventional 2D endoscopy and the 3D system. The movies were evaluated by 8 endoscopists (4 experts and 4 non-experts) and 4 medical students. Each neoplasm was assigned a visibility score between 4 (excellent visibility) and 1 (poor visibility).

Results: The mean visibility scores were 3.35 ± 0.58 for 2D endoscopy and 3.75 ± 0.44 for the 3D system. The score was significantly higher for the 3D system than for 2D endoscopy (p = 0.01). When comparing the evaluations by the experts, non-experts, and medical students, the differences in the scores by the non-experts and medical students were noted to be higher (p < 0.05). In contrast, the scores by the experts were also higher for the 3D system, but no statistical difference was observed (3.0 ± 0.53 for 2D endoscopy and 3.87 ± 0.35 for the 3D system, p = 0.08). As a result, 10 out of 12 observers noted that the 3D system had better visibility than conventional 2D colonoscopy, and none of the observers noted deterioration in visibility with the 3D system.

Conclusion: The present findings suggest that the 3D imaging system improves the visibility of non-polypoid colorectal neoplasms, and this is more effective for non-experts. Our findings would contribute to improvement in the detection of these neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0845 PAIN DURING COLONOSCOPY: DIFFERENCES BETWEEN PATIENTS’ EXPERIENCES AND CAREGIVERS’ ASSESSMENT

J. Rylander1, G. Ringström2, M. Simrén3, S. Sjöblom2, P. Stötzer4, S. Jakobsson5

1Gastro Endoscopy Unit, Sahlgrenska University Hospital, Gothenburg/Sweden
2Institute Of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden
3Dept Of Internal Medicine, Sahlgrenska University Hospital - Dept of Internal Medicine, Sahlgrenska University Hospital; Gothe, Gothenburg/Sweden
4Centre For Person-centered Care, Institute of Health and Care Sciences, University of Gothenburg, Gothenburg/Sweden

Contact E-mail Address: jessica.rylander@vgregion.se

Introduction: Pain is a subjective perception, which contributes to difficulties to provide adequate pain relief according to every patient’s needs. Colonoscopy is by many patients considered as a painful and strenuous procedure.

Aims & Methods: To investigate congruence and differences between patients’ and caregivers’ report of pain during colonoscopy. Patients (≥ 18 years) undergoing an outpatient colonoscopy (all indications) have consecutively been included (n = 862). Before the procedure the patients completed questionnaires regarding sociodemographic information and anxiety. After the colonoscopy the patients registered their pain experience on a six-grade scale, ranging from “no pain” to “extremely severe pain”. Caregivers (physicians and endoscopy nurses) estimated patient’s pain using the same scale.

Results: From 785 patients has been collected, mean age 52 (18–90) years; 413 women. Approximately 75% of the patients’ reports of pain was underestimated in 25.5% among the group. There was also a difference across gender; physicians underestimated pain in 60% of men who reported “moderate pain” (n = 66) while the nurses underestimated pain in 27% among the same group of men. Women’s pain was overestimated by caregivers in 26% (n = 188) of all cases with mild pain. Patients undergoing colonoscopy for the first time (n = 331), and reporting “moderate pain”, were underestimated by physicians in 58% and by nurses in 25%. 58% of the patient reports that they were anxious before the procedure. This group reported more pain than the group without anxiety (p < 0.001). Presence of anxiety and a high level of pain was among the group agreeing with nurses’ and the patient’s pain report. The agreement between pain reports from patients and caregivers were poor to fair, with slight differences between nurses (Kappa = 0.37; p < 0.000) and physicians (Kappa = 0.29; p < 0.000) in total, congruent pain reports between patients and caregivers were seen in 36% of all assessments.

Conclusion: Agreement between caregivers’ and patients’ pain reports is far from perfect, and the agreement is influenced by several factors such as the profession of the caregiver, as well as patient factors including pain severity, anxiety, age, gender and previous experience of colonoscopy. The goal for the future should be to individualize the use of analgesics based on every patient’s needs, which seems to be of special importance in specific groups of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0846 DEVELOPMENT OF A NEW ENDOSCOPIC CLASSIFICATION AND FIRST INTERNATIONAL VALIDATION (FACILE GROUP) OF COLONIC LESIONS USING ADVANCED IMAGING MODALITIES IN IBD PATIENTS


1University Of Birmingham, Institute of Translational Medicine, Birmingham/United Kingdom
2University of California San Francisco, USA, San Francisco/United States of America
3Gastroenterology. National Hospital Organization Tokyo Medical Center, Tokyo/Japan
4Division Of Gastroenterology, Department Of Internal Medicine, Iwate Medical University, Morioka/Japan
5Gastroenterology, Leeds Teaching Hospitals NHS Trust, Leeds/United Kingdom
6Center For Preventive Medicine, Keio University School of Medicine Center for Preventive Medicine, Tokyo/Japan
7Clinical Research Unit, Canada
8Gastroenterology And Hepatology, Maastricht Hospital, Maastricht/Netherlands
9HSK, Dr. Horst-Schmidt-Kliniken, Wiesbaden/Germany

Contact E-mail Address: iaacucim@yahoo.it

Introduction: The SCENIC consensus proposed recommendations for optimal detection and management of dysplasia during colonoscopic surveillance for IBD. The characterization of colonic lesions in IBD remains challenging even by using advanced endoscopic imaging modalities (high definition [HD], virtual chromoendoscopy [VCE] dye chromoendoscopy [DCE]).

Aims & Methods: We aimed to develop a unified endoscopic classification of advanced imaging to predict histology of colonic lesions, and to validated by international experts (Frankfurt Advanced Chromoendoscopic Ibd LEsions-FACILE Group). We developed an endoscopic classification of IBD lesions, based on morphology, colour, demarcation, surface pattern, vessel pattern, signs of inflammation (table). A library of 60 colonic lesions, including dysplasia, sessile serrated adenomas/polyps, invasive cancer and pseudopolyps collected at surveillance colonoscopy by using HD, DCE and VCE with i-scan or NBI were assessed. The diagnostic performance of the score was tested based on the final histopathology and the inter-observer variability of the eight examiners. The examiners have had to perform a pre-test (45 minutes) before analyzing the colonic lesions. Multivariate analysis with bootstrapping, of characteristics of the classification was performed to determine the strength of endoscopic predictors of dysplasia.

Results: Of the 60 IBD lesions, 33 (55%) were dysplasia, 6 (10%) cancer, 9 (15%) SSA/Ps and 12 (20%) pseudopolyps. Across the experienced academic raters sensitivity, specificity, PPV, NPV and accuracy in predicting histology, were 72%, 92%, 91%, 40%, 72%, 93%, 90%, 97%, 46%, 76%, which were significantly more accurate compared with a low confidence of diagnosis (76% vs 65%; p = 0.001). Univariate analysis showed that the non polyoid lesions, irregular and vessel architecture and signs of inflammation within the lesion were predictive of dysplasia. Subsequent multivariate analysis confirmed that of these endoscopic findings non polyoid lesion OR 11.6 (95% CI 6.71–20.2), surface pattern
OR 0.31 (95% CI:0.17–0.54), vessel architecture OR 5.1 (95% CI: 2.7–10.2), sign of inflammation within the lesion OR 0.39 (95% CI: 0.18–0.85) were independent predictors of dysplasia, with vessel architecture and morphology being the best predictors. The sensitivity, specificity, PPV, NPV and accuracy at the multivariate analysis stage were 94% (95% CI: 90–96%), 51% (95% CI: 43–58%), 88% (95% CI: 82–92%), 60% (95% CI:62–75%), 85% (95% CI: 79 –90%), Inter-observer agreement of the raters improved from the pre-test (Kappa = 0.27,95% CI: 0.19–0.38) to post test (Kappa = 0.34,95% CI: 0.23–0.45,P = 0.02) but was moderate.

**Conclusion:** We developed and validated the first endoscopic classification using all imaging modalities (HD, VCE, DCE) to characterize and differentiate dysplastic from non-dysplastic lesions in IBD. Non polypoid lesions, irregular surface and vascular pattern as well as inflammation within the lesions were predictive of dysplasia. The inter-observer variability of the score was moderate. The classification will be further refined based on the multivariate analysis and a prospective study is ongoing.

**Table 1: Advanced endoscopic classification of IBD lesion**

<table>
<thead>
<tr>
<th>Morphology (mm):</th>
<th>Polypoid/non polypoid</th>
<th>Ulceration</th>
<th>Endoscopic inflammatory activity (area surrounding the lesion)</th>
<th>Demarcation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Polypoid/non polypoid</td>
<td>Ulceration</td>
<td>Endoscopic inflammatory activity (area surrounding the lesion)</td>
<td>Demarcation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non ulcerations</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ulceration</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>No color</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Same intensity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Darker</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Paler</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Regular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Irregular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Non visible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Regular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vascular pattern</td>
<td>Irregular</td>
</tr>
</tbody>
</table>

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

**P0847 GENDER DIFFERENCES IN ACCEPTANCE OF COLORECTAL CANCER SCREENING: PAIN AS THE EXPLANATION**

B. Kirkøen1, P. Berstad2, E. Botteri2, E. Dale‡3, J. A. Nilsen4, G. Hoff5, T. De Lange6, T. Bernklev7
1Cancer Registry of Norway, Oslo/Norway
2Cancer Registry of Norway, Oslo, Norway, Oslo/Norway
3Østfold Hospital Trust, Gatham/Norway
4Vestre Viken Hospital Trust, Drammen/Norway
5And Vestfold Hospital Trust, Sandefjord/Norway

**Contact E-mail Address:** benedict.kirkøen@kreftregisteret.no

**Abstract No:** P0848

<table>
<thead>
<tr>
<th>Endoscopic Findings</th>
<th>Endomicroscopy Findings</th>
<th>Histology</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left sided UC</td>
<td>HO/IV</td>
<td>SSA</td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Ilb Size &gt; 2.5 cm</td>
<td>Villiform appearance of the crypts with stellar opening. The colonic mucosa surrounding the lesion was normal.</td>
<td>SSA</td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Crohn’s colitis</td>
<td>Villiform elongated appearance of the crypts with dark epithelium, decreased number of the</td>
<td>LGD</td>
<td>Surgical resection</td>
</tr>
<tr>
<td>IIS/III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ilb Size &gt; 2.5 cm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued)
with methylene blue 1% to characterize the surface, vascular pit pattern and the margins of the lesion. Each of the 7 patients had non polypoid colonic lesions, 4 were sessile (Paris Is) and 3 flat (IIa/IIb). Four of them were amenable to endoscopic therapy and were successfully removed using endoscopic mucosal resection (EMR) en-block or piecemeal technique. Interestingly, one patient with multiple scattered “pseudopolyps” had a 8 mm sessile pseudopolypoid lesion with a suspicious areas of SSA in the midst that was confirmed by real pCLE.

The endoscopic, endomicroscopic and histological findings of all the lesions were described in Table 1.

**Conclusion:** This case series highlights the first successful use of pCLE in combination with VCE and DCE to predict, characterise and treat colonic neoplasia in IBD. pCLE may be an additional tool to aid the endoscopist in therapeutic management by deciding endoscopic resectability versus colectomy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

<table>
<thead>
<tr>
<th>UC/CD</th>
<th>Kudo Paris Border</th>
<th>Endomicroscopy Findings</th>
<th>Histology</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcerative</td>
<td>III/IV IIs Size &gt; 2.5 cm distinct</td>
<td>Villiform appearance of the crypts with stellar opening of the lumen. Areas of dark epithelium with decreased number of goblet cells. Surrounding mucosa was normal.</td>
<td>SSA with focal LGD</td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Pancolitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colonic Crohn’s</td>
<td>II/IV IIs Size &gt; 2.5 cm distinct</td>
<td>Villiform -elongated appearance of the crypts with stellar opening of the lumen. The mucosa surrounding the lesion was normal.</td>
<td>SSA</td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Colonic Crohn’s</td>
<td>II/IV IIs Size &gt; 2.5 cm indistinct</td>
<td>Villiform- elongated appearance of the crypts with dark epithelium and decreased number of goblet cells. The surrounding mucosa showed irregular architecture of the crypts and leakage of fluorescein.</td>
<td>LGD</td>
<td>Surgical resection</td>
</tr>
<tr>
<td>Ulcerative Pancolitis</td>
<td>IIs Size &gt; 5 mm distinct</td>
<td>In the midst of pseudopolyp villiform appearance of the crypts with stellar opening of the lumen</td>
<td>SSA</td>
<td>En-block EMR</td>
</tr>
<tr>
<td>Ulcerative Pancolitis</td>
<td>II/IV IIs Size &gt; 2.5 cm indistinct</td>
<td>Villiform appearance of the crypts with dark epithelium and absence of goblet cells. The mucosa surrounding the lesions had irregular architecture of the crypts</td>
<td>HGD</td>
<td>Surgical resection</td>
</tr>
</tbody>
</table>

Table 1: Endoscopic, endomicroscopic and histological findings of all the lesions.
**P0849** THE SAFETY AND EFFECTIVENESS OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION USING A SCISSORS-TYPE KNIFE IN ELDERLY PATIENTS

T. Kawai1, Y. Yamaguchi1, H. Imagawa1, S. Funaki1, K. Taro1, R. Miura1, T. Takazato1, Y. Yamada1, Y. Miyasako1, A. Yamaguchi1, H. Kouno1, Y. Kohno1, S. Ishao1

1Gastroenterology, Kure MC & Chugoku CC, Kure/Japan
2Gastroenterology, Dudley Group Hospitals, Birmingham City University, Birmingham/United Kingdom

Contact E-mail Address: toshioki.kawai@gmail.com

Introduction: Endoscopic submucosal dissection (ESD) is one of the most useful methods for treating early colorectal neoplasms and conventionally utilizes an IT, hook, or needle knife. However, because these devices are used without fixation to target, it confers a potential risk of complications due to unexpected incision. To reduce the risk of complications from ESD performed using a conventional knife, we used a scissors-type knife (SB Knife Jr: Akita Sumitomo Bakedite, Japan) that allows keeping an adequate dissection layer and preventing unexpected muscular layer injury. In the previous study, we reported that ESD performed using SB Knife Jr is a technically efficient and safe method for treating early colorectal neoplasms. However, the efficacy and safety of colorectal ESD using SB Knife Jr in elderly patients remain unclear.

Aims & Methods: The aims of our study were to evaluate the efficacy, safety, and clinical outcomes of colorectal ESD using SB Knife Jr in patients aged ≥75 years in comparison with those in younger patients. We evaluated 291 lesions in 271 patients (male-to-female ratio, 148:123; median age, 70 years) treated with ESD using SB Knife Jr between October 2010 to March 2017 at King’s College Hospital Endoscopy Centre and Chugoku Cancer Center. The patients were divided into two groups, an elderly group (group A: age ≥75 years; 95 patients, 97 lesions) and a non-elderly group (group B: age <75 years; 176 patients, 194 lesions). We evaluated the en bloc resection rate, complete resection rate, curative resection rate, en bloc tumor size, procedural time, complications, and long-term outcomes, including survival rate. The 3-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort, and the local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection.

Results: The mean age was 80.0 years in group A and 64.3 years in group B. The male-to-female ratios were 45:50 and 103:73 in groups A and B, respectively. Regarding histopathological findings, the prevalence rates of tubular adenoma were 37.1% (36/97) and 36.1% (70/194); T1a, 39.2% (38/97) and 44.8% (87/194); T1a, 10.3% (10/97) and 10.3% (20/194); and T1b, 13.4% (13/97) and 8.8% (17/194) in groups A and B, respectively, showing no significant difference. The mean en bloc resection rate was 96.9% (94/97) and 99.0% (192/194); the complete resection rate, 94.8% (92/97) and 94.8% (184/194); and the curative resection rate, 83.5% (81/97) and 88.1% (171/194) in groups A and B, respectively, showing no significant difference. Regarding complications, no perforation during the procedure occurred in any of the cases. The delayed bleeding rate was 1.0% (1/97) in group A and 2.6% (5/194) in group B. Delayed perforation and related death occurred in one patient each in group A and were treated conservatively. Regarding long-term outcomes, the local recurrence rate was 1.0% (1/97) in group A and 0.5% (1/194) in group B, and no distant recurrence was observed in the recurrence analysis cohort. Regarding survival analysis (mean follow-up period: group A, 523 ± 469 days; group B, 628 ± 582 days), the 3-year overall and disease-specific survival rates were respectively 98.8% and 100% in group A, and 93.3% and 98.3% in group B. One patient (0.5%, 1/194) died of other diseases in group B, while one patient (1.1%, 1/95) died of other diseases in group A.

Conclusion: ESD performed with SB Knife Jr is a technically efficient and safe method associated with favorable long-term outcomes in cases of early colorectal neoplasms both in elderly and non-elderly patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

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**P0850** QUALITY IN COLONOSCOPY; HAVE YOU REALLY GOT TO THE CAECUM?

S. Budihal

Department Of Endoscopy, Nottingham University Hospitals, Nottingham/United Kingdom

Contact E-mail Address: sibudihal@yahoo.co.uk

Introduction: Poor quality and incomplete colonoscopy is associated with missed diagnosis and failure to prevent interval cancers.1 Caecal intubation rate is the most frequently used Quality Indicator of Colonoscopy. British Society of Gastroenterology guidelines recommend obtaining “clear images of caecal landmarks or terminal ileum” while the European and American guidelines suggest “at least complete photo documentation per patient of the ileocecal valve and caecum”. In this retrospective study we aimed to assess colonoscopists’ practice in photo documentation of colonoscopy completion.

Aims & Methods: Colonoscopy reports for colonoscopies performed at an endoscopy unit over a University Hospital over a period of three months from 01/01/2014 to 31/03/2014 were retrieved from the Trust’s Endoscopy database. Photo documentation from the reports were then analysed for caecal landmarks and terminal ileum images.

Results: A total of 292 colonoscopies were performed by 21 endoscopists (5 colorectal surgeons (24%), 3 nurse endoscopists (14%), 3 specialist registrar gastroenterologists (14%) and 10 consultant gastroenterologists (48%). Caecal intubation was achieved in 248 cases (85%). In 8(3%) cases the anastomosis was reached. The ileo-caecal valve was photographed in 172(70%) cases, the appendiceal orifice was photographed in 25 cases (10%). In the case of anastomosis, 7(38%) patients had clamped and intubated the ileum but did not obtain a photo clip of the ileo-caecal valve. Obtaining clear images of caecal landmarks will ensure definite caecal intubation and efforts towards recording them will prompt the endoscopist to attain adequate mucosal view. In order to achieve excellence we suggest colonoscopists obtain images of all caecal landmarks including the ileum when intubated, label photographs and where possible record video clips of caecal intubation.

Disclosure of Interest: All authors have declared no conflicts of interest.

**References:**
PO852 IN VIVO HISTOLOGICAL PREDICTION OF COLORECTAL POLYPS USING FICE TECHNOLOGY

J. Cortez-Pinto, J. Moleiro, L. Marques, R. Barosa, J. Castela, J. Pereira Da Silva, S. Faisas, S. Mão De Ferro, P. Lage, A. Dias Pereira
1Gastroenterology, IOPFLG, EPE, Lisboa, Portugal
2Gastroenterology, Hospital Garcia de Orta, Almada, Portugal
3Gastroenterology, Instituto Português de Oncologia Francisco Gentil, Lisboa, Portugal
Contact E-mail Address: joao_cpitno@hotmail.com

Introduction: The histological characterization of colorectal polyps using FICE (Fujinon Intelligent Color Enhancement) technology presents high diagnostic accuracy. However, these excellent results in in vitro histological prediction are a reflection of the clinical practice by trained endoscopists, and their application remains to be confirmed outside this context.

Aims & Methods: To evaluate the in vivo histological prediction acuity of colorectal polyps (<10 mm in diameter) using FICE technology.

Results: 25 polyps were included, with a mean size of 4.5 mm, 14 adenomas, 10 hyperplastic and 1 serrated adenoma. From the global assessment of all polyps and observations, the use of the FICE classification for prediction of adenoma vs. hyperplastic polyps produced a sensitivity, specificity, positive and negative predictive value identical to WLE (100%, 62.5%, 100% and 60%, respectively). Overall, diagnostic acuity in histological prediction was identical in both modalities (76%). The individual acuity of the endoscopists ranged from 66% to 100%. Histological scores were not associated with a higher probability of correct classification, both in WLE (77% vs. 75%) and FICE (75% vs. 80%), p > 0.05.

Conclusion: The use of FICE technology by inexperienced endoscopists in the histological prediction of colorectal polyps has no advantage over WLE, having both suboptimal acuities. The lack of recourse to magnification may have contributed to these results.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

PO854 PATIENT AND PHYSICIANS RELATED FACTORS ASSOCIATED WITH A HIGH ADENOMA DETECTION RATE IN ROUTINE COLONOSCOPY

1Pôle Digestif Paris Bercy, Clinique de Bercy, Charenton-le-Pont, France
2IGR, Villejuif, France
3Digestive Endoscopy Unit, Clinique de Bercy, Charenton-le-Pont, France
Contact E-mail Address: m.cavichi@wanadoo.fr

Introduction: Adenoma and polyp detection rates are correlated to the risk of interval colorectal cancer and is consequently considered as a quality benchmark for colonoscopy. We propose to evaluate in our daily practice, involving all the endoscopists of our endoscopy unit.

Aims & Methods: 6027 colonoscopies were performed between 01/01/2016 and 31/12/2016 by 30 physicians. Regarding patients, the following data were prospectively collected: age, gender, indication for colonoscopy, preparation procedure and quality of preparation (assessed by the Boston Scale), number and size of polyps and polyp histopathology. Regarding physicians, age, gender, number of colonoscopies and mean withdrawal time (calculated from the normal colonoscopies) were studied. Neoplasia was defined as grade 4 or 5 of the Vienna classification: 4: non-invasive high grade neoplasia (high grade adenoma/dysplasia, non-invasive carcinoma and suspicion of invasive carcinoma); 5: invasive neoplasia (intramucosal carcinoma, submucosal carcinoma or beyond).

Conclusion: Results were enrolled 2719 Male patients (45.1%) and 3308 Female patients (54.9%), 73.6% of them of 50 year-old or more. A sub-optimal preparation (defined by Boston scale score < 6 or at least one sub-score < 2) was observed in 61.5% of the patients. Caeal intubation rate was 99%. 21 endoscopists were Male and 10 were under 50 year-old. The median number of colonoscopy per physician was 140 (range: 10-720). 2054 colonoscopies detected 3914 lesions or polyps: 2914 tubular/villous adenomas, 496 serrated adenomas, 242 hyperplastic polyps (hyperplastic polyps located in the rectum and sigmoid colon were not considered as at risk for cancer and were excluded), 212 other histology leading to a Median Number of Polyps (MNP) of 0.65 and a Polyp Detection Rate (PDR) of 34.1%. 1935 colonoscopies detected at least one adenoma (adenoma detection rate, 32.1%). Large Polyp Detection Rate was 7.9% with detection of 538 polyps >1 (13.7% of polyps), in 477 patients. Neoplasia Detection Rate was 3.6% (300 neoplasias in 220 patients). Admission to the endoscopists, the median PDR was 32.5% (range 14-62%). Among them, 4 had a PDR < 20%, 17 had a PDR between 20 and 39% and 9 had a PDR >40%. Mean withdrawal time was 490 seconds (range 228-831). 10 physicians had a mean withdrawal time <420 seconds (median ADR = 34.3%). 5 physicians had a mean withdrawal time of more than 420 seconds (p > 0.05). In the univariate analysis, a high PDR was significantly associated with patient-dependant factors: age, Male gender, a familial history of polyp/cancer, screening or positive faecal immunochemical test (FIT+) and quality of preparation. Regarding physician-dependant factors, a high PDR was significantly associated with Male gender, high volume (>140 colonoscopies per year) and withdrawal time. In the multivariate analysis, the only independent predictor associated with a high PDR were: familial history of polyp/cancer, FIT+ and patient age.

Conclusion: In this large series of routine colonoscopies, we found medically-relevant polyps in more than one third of the patients, irrespectively of age and indications. In multivariate analysis, a high PDR was significantly associated with familial history of polyp/cancer, FIT+ and age of the patient. This may suggest that the Male gender is no longer a risk factor for polyps. In addition, even if there are still discrepancies regarding FIT among physicians, we found a physician-dependant factor associated with a high PDR in the multivariate analysis.

Acknowledgment to all the endoscopists and nurses of the Clinique de Bercy.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO855 EFFICIENCY OF COLONOSCOPY IN CASE OF POSITIVE FECAL IMMUNOCHEMICAL TEST: ONE-YEAR EXPERIENCE AND RESULTS ON 391 PATIENTS IN ROUTINE PRACTICE IN FRANCE

1Pôle Digestif Paris Bercy, Clinique de Bercy, Charenton-le-Pont, France
2IGR, Villejuif, France
Contact E-mail Address: m.cavichi@wanadoo.fr

Introduction: Fecal immunochimical test (FIT) has progressively replaced the guaiac test for colorectal screening in average risk population in France since May 2015. With a high sensitivity and a good specificity, it is supposed to increase colonic cancer risk-detection. However, its efficiency has not been described in routine colonoscopy.

Aims & Methods: Among 6027 colonoscopies performed between 01/01/2016 and 31/12/2016 in our endoscopy unit, 391 were performed for a positive FIT (FIT+).
Conclusion: Preliminary results from our study suggest that the low-volume 2 L solution in both groups A and B were respectively (62.8% and 65.7% vs 32% and 26% vs 19% and 13%) (p = 0.03). However, 5 patients in group A had sleep disturbance vs only one case in group B. Four patients who received 4 L of PEG had expressed their refusal to resume the same preparation if necessary while 2 patients in group B had refused. A score greater than or equal to 7 was recorded (65% for protocol A and 73% for protocol B) with a maximal score of 9.9 (for B groups), respectively. The overall score obtained was 6.49 versus 7.32, respectively. This score (BBPS) tended to be better in protocol B than in protocol A in the right segment (2.55 vs 2.17), transverse colon (2.58 vs 2.43) and left colon (2.19 vs 1.94). This same trend was recorded in relation to the number of patients with a maximal score of (9/9), with 4 colon (2.58 vs 2.43) and left colon (2.19 vs 1.94). This same trend was recorded in relation to the number of patients with a maximal score of (9/9), with 4 colon (2.58 vs 2.43) and left colon (2.19 vs 1.94). However, endoscopists comfort was higher in LLP (4.62 Vs 3.76; p < 0.05). Both groups required position change during progression or loop palpation by the nurse in equal percentage (54% Vs. 56%; p = 0.05, 49.5% Vs. 50.5%; p = 0.05). Additionally, there was no difference in time to docum, patients of endoscopists comfort between the colonoscopies performed with Fuji or Olympus colonoscopes. Conclusion: In our experience, progression in right lateral position did not show additional advantage over standard LLP in time to reach the cecum or patients comfort. We did not find any difference in time to progression or comfort between Olympus and Fuji colonoscopes. Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Large series suggest endoscopic mucosal resection is safe and effective for the removal of large sessile serrated polyps ≥10mm (large SSP) but it exposes the patient to the risks of electrocautery, principally delayed bleeding.

Aims & Methods: We aimed to examine the feasibility and safety of piecemeal cold snare polypectomy (pCSP) for the resection of large SSP. Over 12 months significant large SSP without endoscopic evidence of dysplasia referred to a tertiary endoscopy centre were considered for pCSP. The technique for pCSP was standardised. The lesion and its margins were assessed using high definition endoscopic imaging. Snare resection commenced at one margin including a 2–3 mm rim of normal tissue. A thin-wire snare was used in all cases. Firm downward pressure and suction of luminal gas aided tissue capture. Subsequently the assistant closed the snare until resistance was felt, and then completely once the endoscopist was satisfied with the amount of captured tissue. If transection did not occur within five seconds gentle traction was exerted on the snare catheter against the tip of the colonoscope. If transection still did not occur, the snare placement was revised. The mucosal defect was then expanded with a flushing pump containing 0.9% saline. Further resections were then performed aligning the snare with the cut edge of the expanding mucosal defect. Once the resection was completed the mucosal defect was inspected for residual serrated tissue. If residual was detected further generous snare resection was performed. Oozing of blood from the resection site was common and was not actively treated. Submucosal injection was not performed. High-definition imaging of the defect margin was used to ensure the absence of residual serrated tissue. Adverse events were assessed at 2 weeks and surveillance was planned between 6 and 12 months. Results: 41 SSP were completely removed by pCSP in 34 patients. 7 patients had two lesions removed. The median size of SSP was 15mm (IQR 14.5–20), range 10–35mm. The median duration of procedures was 4.5 minutes (IQR 1.4–6.3).

There was no evidence of perforation or significant intra-procedural bleeding. There were no significant adverse events at 2 week follow up including delayed bleeding and post polypectomy syndrome. 8/41 lesions underwent first follow-up at median 6 months with no evidence of recurrence.

Conclusion: There is potential for pCSP to become the standard of care for non-dysplastic large SSP. This may reduce the burden on patients and healthcare systems of removing SSP, particularly by avoidance of delayed bleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.
in left colon and 6 (6%) in rectum. Pathological diagnosis was 22 (24%) hyperplastic polyp or SSA/P, 42 (46%) low grade dysplasia (LGD), 23 (26%) high grade dysplasia (HGD), and 11% submucosal invasive cancer. In the removal methods, HSP was 71 (77%) lesions and EMR was 21 (23%). The median procedure time of HSP and EMR was 37 seconds (range: 7–430) and 167 (range: 60–450) (p < 0.001). The median lesion size of was HSP and EMR was 12 mm (range: 10–30) and 20 (range: 10–26) (p < 0.001). The immediate bleeding of HSP and EMR occurred in 7 (10%) lesions and 6 (3%) (p = 0.009). The delayed bleeding of HSP and EMR occurred in 2 (3%) lesions and 0 (p = 0.434). Perforation was not occurred. No tumors were horizontal and vertical margin positive. In the pathological diagnosis, 86% of hyperplastic poly or SSA/P, 86% of LGD, and 57% of HGD was resected by HSP, and submucosal invasive cancer was resected by EMR.

**Conclusion:** Of over 10 mm colorectal lesions was resected by using bipolar snare, 77% were resected by HSP. The procedure time of HSP was significant shorter than EMR.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Table 1:** Outcomes after endoscopic mucosal resection at the initial procedure, 2 weeks and subsequent surveillance procedures.

<table>
<thead>
<tr>
<th>SMSA 2</th>
<th>SMSA 3</th>
<th>SMSA 4</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>229 (9.9)</td>
<td>918 (39.8)</td>
<td>1158 (50.2)</td>
</tr>
<tr>
<td>Successful EMR (%)</td>
<td>226 (98.7)</td>
<td>894 (97.4)</td>
<td>1088 (94.0)</td>
</tr>
<tr>
<td>Duration - min (median IQR)</td>
<td>10 (5–15)</td>
<td>15 (10–20)</td>
<td>30 (20–45)</td>
</tr>
<tr>
<td>IPB (%)</td>
<td>19 (8.3)</td>
<td>115 (12.5)</td>
<td>291 (25.1)</td>
</tr>
<tr>
<td>Deep injury * (%)</td>
<td>11 (4.8)</td>
<td>33 (3.6)</td>
<td>54 (4.7)</td>
</tr>
<tr>
<td>CSPEB (%)</td>
<td>4 (1.7)</td>
<td>47 (6.5)</td>
<td>50 (9.8)</td>
</tr>
<tr>
<td>Delayed Perforation (%)</td>
<td>0 (0)</td>
<td>2 (0.2)</td>
<td>5 (0.4)</td>
</tr>
<tr>
<td>Surgery at 2w (%)</td>
<td>20 (8.7)</td>
<td>50 (5.5)</td>
<td>117 (10.1)</td>
</tr>
<tr>
<td>Underwent SC1 (%)</td>
<td>86</td>
<td>685</td>
<td>871</td>
</tr>
<tr>
<td>EDR SC1 (%)</td>
<td>9 (5.4)</td>
<td>71 (10.4)</td>
<td>206 (23.7)</td>
</tr>
<tr>
<td>HSD CR1 (%)</td>
<td>3 (6.4)</td>
<td>36 (13.4)</td>
<td>120 (28.7)</td>
</tr>
<tr>
<td>Surgery SC1 (%)</td>
<td>0 (0.6)</td>
<td>7 (1.0)</td>
<td>12 (1.4)</td>
</tr>
<tr>
<td>Underwent SC2 (%)</td>
<td>88</td>
<td>326</td>
<td>462</td>
</tr>
<tr>
<td>EDR SC2 (%)</td>
<td>0 (0)</td>
<td>21 (6.4)</td>
<td>42 (9.1)</td>
</tr>
<tr>
<td>Surgery SC2 (%)</td>
<td>0 (0)</td>
<td>1 (0.3)</td>
<td>3 (0.6)</td>
</tr>
</tbody>
</table>

---

**EMR – endoscopic mucosal resection, IPB – intra-procedural bleeding, IPP – intraprocedural perforation, CSPEB – clinically significant post endoscopic bleeding (bleeding after EMR requiring admission to hospital or re-intervention), 2w – two weeks, SC1/2 - surveillance colonoscopy 1/2, * target sign or actual hole corresponding to DMI type III/IV - Sydney Classification (1)**

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**SMA3 score (2)**

<table>
<thead>
<tr>
<th>Size</th>
<th>Points</th>
<th>Morphology</th>
<th>Points</th>
<th>Access</th>
<th>Points</th>
<th>Site</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 cm</td>
<td>1</td>
<td>Pedunculated</td>
<td>1</td>
<td>Easy</td>
<td>1</td>
<td>Left</td>
<td>1</td>
</tr>
<tr>
<td>1-1.9 cm</td>
<td>3</td>
<td>Sessile</td>
<td>2</td>
<td>Difficult</td>
<td>3</td>
<td>Right</td>
<td>2</td>
</tr>
<tr>
<td>2.2-2.9 cm</td>
<td>5</td>
<td>Flat</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-3.9 cm</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;4 cm</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Conclusion:** SMA3 is a simple readily applicable clinical score that identifies a subgroup of patients who are at increased risk of EMR related complications including CSPEB and recurrence. This information is useful for planning EMR lists with respect to time and resource allocation. Moreover SMA3 could have a major impact on training, both in identifying appropriate training cases and providing an objective benchmark against which to assess the progress of trainees in EMR.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


similarly 7.3 in 9 were better than NBI. kappa value among participants was 4.8; moderate agreement (p = 0.0016). All polyps were removed endoscopically after evaluation. All lesions were histologically diagnosed as SSA/P without dysplasia. 

**Conclusion:** Acetic acid was useful and promising to facilitate the endoscopic recognition of the precise margin of SSA/P in right side colon. Strength of this method is that it is very simple and needs no special equipment nor skill.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0864 AUTOLOGOUS BLOOD, A NOVEL AGENT FOR PREOPERATIVE COLONIC LOCALIZATION: A SAFETY AND EFFICACY COMPARISON STUDY**

E.J. Kim1, J. Chung1, S. Kim1, J.H. Kim1, Y.J. Kim1, K.O. Kim1, K.A. Kwon1, D.K. Park1, S.W. Park2, J. Baek2

1Department Of Internal Medicine, Gachon University Gil Medical Center, Incheon; Korea, Republic of

2Department Of Surgery, Gachon University Gil Medical Center, Incheon; Korea, Republic of

**Contact E-mail Address:** kkimge@naver.com

**Introduction:** Preoperative localization or tattooing is essential for minimally invasive surgery. Although preoperative endoscopic tattooing using India ink or indocyanine green is widely used, clinical evidence and safety profile supporting the use of these agents is lacking.

**Aims & Methods:** We assessed the efficacy and safety of preoperative endoscopic tattooing using autologous blood. A total of 80 patients who underwent endoscopy with endoscopic tattooing or India ink or autologous blood were included in this study. From February 2016, all patients who required localization of a target lesion before colorectal surgery underwent endoscopic tattooing using autologous blood at a single tertiary medical center, and the outcomes were collected prospectively. As a comparison, we retrospectively reviewed the medical records of a further 40 consecutive patients who underwent endoscopic tattooing using India ink before February 2016. The primary outcomes were the visibility of the tattooing in the peritoneal cavity and related adverse events.

**Results:** Endoscopic tattoos produced using India ink were visible in 38 (95%) patients, and tattoos created using autologous blood were visible in 36 (90%) patients. In the autologous blood group, the tattoo could not be identified in four patients due to excessive peritoneal fat, bleeding tendency, congenital anomaly, and tattoos were inadequate depth. Eight (20%) patients in the India ink group and four patients (10%) in the autologous blood group experienced endoscopic tattooing-related adverse events.

**Conclusion:** Preoperative endoscopic tattooing using autologous blood is a feasible and safe modality for the preoperative localization of colorectal lesions. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0865 SUBMUCOSAL INVASION IN COLORECTAL LATERALLY SPREADING TUMORS (LST) AND ABILITY OF THE ENDOSCOPIST FOR CANCER DETECTION**

H. Soliman1, B. Brieau2, M. Guillaume3, S. Leblanc2, R. Coriat2, F. Prat1, S. Chassade1

1Gastro-entérologie, Hôpital Saint Antoine, Paris/France
2Department Of Gastroenterology, Cochin Hospital, Assistance Publique-Hôpitaux de Paris, Paris/France
3Hôpital Cochin Dept. of Gastroenterology, Paris/France

**Introduction:** Laterally spreading tumors (LSTs) are defined as lesions >10 mm with a low vertical axis and lateral extension. They are separated in 2 groups with 2 subclasses for each of them: granular LST (LST-G) with, or without large nodule; and non-granular LST (LST-NG), separated into flat lesions (Ha) and depressed lesions (Ha + Hc). Every subclass has been associated with a proper risk of cancer and submucosal invasion (T1sm)-2. Knowing this aspect could help for the decision of the resection technique (endoscopic mucosectomy EMR, endoscopic submucosal dissection ESD, or surgery). The aim of our study was to determine the rate of cancer (submucosal and mucosal adenocarcinoma) in a western series of LST treated by endoscopic resection, and to evaluate the ability of the endoscopist to predict the depth of cancer invasion.

**Aims & Methods:** The entire patients with a LST ≥20 mm treated between January 2012 and December 2016 in our single center were included. Endoscopic data were collected (size, location, LST classification, analysis of pit pattern, endoscopic suspicion of cancer). We also reported the resection technique, histological results, and the follow-up at 1 year.

**Results:** 377 LST were included in our study. The average age was 67.7 years old. The mean size of lesion was 40.6 mm. LST were located in the right colon, the rectum, the left colon and the transverse colon in 44.5%, 32.6%, 14.0% and 8.8%, respectively. The resection technique used was a monobloc EMR in 15.4%, piecemeal EMR (pEMR) in 42.9%, ESD in 27.3% and assisted ESD in 14.5%. ESD was associated with a significant lower risk of recurrence after 1 year (4.9% against 18.1%). Considering the LST classification, there were 27.0% LST-G without large nodule, 28.4% LST-G with large nodule, 35.5% flat LST-NG Ha, and 9.0% LST-NG with depression Ha + Hc. The overall rate of adenocarcinoma was 19.7%, and 9.0% with submucosal invasion. The rates of adenocarcinoma and the rates of submucosal invasion in every subtype of LST are reported in table 1. They were higher for LST-G with large nodule (34.5% and 15.9% respectively) and for LST-NG with depression (35.3% and 20.6%). Regarding the prediction of submucosal cancer by the endoscopist, we report a low sensitivity, and positive predictive value (respectively 64.7% and 32.8%). However, we had a good specificity and negative predictive value (86.0% and 96.0%). Endoscopic predictors of submucosal cancer were invasive pit pattern (HR 33.0; p = 5.78e-07) and depression (HR = 11.86; p = 0.049).

**Conclusion:** Our western series confirm similar rates of submucosal adenocarcinoma according to the type of LST as compared to Asian series. LST-G with large nodule, and LST-NG with depression were associated with a higher risk of submucosal invasion and invasive pit pattern was the stronger predictor of malignancy. Endoscopic submucosal dissection should be systematically performed in these cases.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0866 ETHNIC VARIATION OF COLONIC POLYPS: FINDINGS FROM AN INTERNATIONAL HOSPITAL FOR MEDICAL TOURISM IN THAILAND**

S. Techapaisan1, V. Permpoon1, K. Pengpiri1

1Digestive Disease Center, Bumrungrad International Hospital, Bangkok; Thailand
2Department Of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore/United States of America/MD

**Contact E-mail Address:** kpengpiri1@jh.edu

**Introduction:** Evidence on an international variation of pathological types and anatomical distribution of colon polyps is beneficial for early detection and management but limited.

**Aims & Methods:** To characterize differences in colonoscopy findings by ethnicity, a random sample of patients aged at least 50 years without colonic symptoms or history of colorectal diseases who underwent colonoscopy were reviewed. Of 26,508 subjects, 2651 were randomly selected. Of 1300 subjects who met the inclusion criteria, abnormal findings were identified in 878 cases (67.54%), of which 452 cases had 940 polyps and 7 cancer lesions were found in 6 cases. Of 452 patients with polyps, half had only one polyp (53.76%) and were Asian (54.63%), followed by Caucasian (26.99%), Middle Eastern (15.71%), and other ethnic origins (2.65%).

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P0867 ARE WE READY FOR COLONIC ESD IN FRANCE?
J. Jacques1, J. Albouy2, A. Chariisoux3, J. Rivory4, D. Sautereau5, T. Ponchon1, R. Legros1, M. Pioche1
1Hepato-Gastro-entérology, CHU Limoges • Hepato-Gastro-Entérology, CHU Limoges • Limoges/F, Limoges/France
2Pathology, CHU Limoges, Limoges/France
3Hepatogastroenterology, Hopital Edouard Herriot, Lyon/France
4Dept. Of Digestive Diseases, Edouard Herriot University Hospital, Lyon/France
5Hepatogastroenterology, Hopital Edouard Herriot, Lyon/France

Contact E-mail Address: jeremiejaques@gmail.com

Introduction: Endoscopic submucosal dissection represents the standard of care for large superficial colorectal neoplasms in Japan. In Europe, only few studies reported these outcomes, especially in the rectal location. Colonic ESD is still technically challenging because of the colonic loops, intestinal motility, the folded anatomy, problems caused by inconstant gravity, and submucosal fibrosis. Colonic ESD is although more risky because perforations are most often non clinically significant in the rectal location (under peritoneal reflection) contrary to the colonic location. Here we reported our results of two years of colonic ESD performed by two French expert teams that began colonic ESD after a strong animal training and a strong experience in rectal and upper-digestive tract ESD.

Aims & Methods: Retrospective bicentre study of all cases of colonic ESD performed between 01/2016 and 03/2017 for superficial pre-cancerous or cancerous neoplasms. Primary Endpoint was to evaluate the En bloc, R0, curative resection rate and extended curative resection rate (Curative resection + non-curative due to positive horizontal margins and without recurrent disease on endoscopic control). Secondary endpoints were to compare these results with results of rectal ESDs performed during the same period.

Results: 87 ESDs were performed in two French centers between 01/2015 and 03/2017 for superficial pre-cancerous or cancerous neoplasms. During the same period 93 rectal ESDs were performed for superficial pre-cancerous or cancerous neoplasms. Descriptive results: male 54 (61%), mean size of the specimen: 49 mm, mean duration of procedure 125.1 min, mean speed of ESD: 18.9 mm²/min, perforation rate: 9 (10.3%), post procedural bleeding rate: 2.3%, secondary surgery 13 (15.3%) (3 (23%) for a perforation; 10 (77%) for a failure or non-curative due to positive horizontal margins and without recurrent disease on endoscopic control).

Secondary Endpoint were to compare these results with results of rectal ESDs performed during the same period.

Conclusion: Colonic ESD could be performed with similar results than rectal ESD in French expert teams with prior strong experience in animal ESDs and rectal ESDs. It allows en bloc resection of large superficial colorectal neoplasms with a very low risk of recurrence. CTs comparing colonic ESD to piece-meal EMR are needed to determine the appropriate place of each technique in Europe.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0868 RISK OF COLORECTAL NEOPLASM IN PATIENTS WITH ACROMEGALY - A CASE-CONTROL STUDY
Y. Ochiai1, T. Izuka1, N. Inoshita1, S. Yamada2, S. Hoteya3
1Dept. Of Gastroenterology, Toranomon Hospital Dept. of Gastroenterology, Tokyo/Japan
2Dept. Of Hypothalamic And Pituitary Surgery, Toranomon Hospital Dept. of Gastroenterology, Tokyo/Japan

Contact E-mail Address: y.ochiai.1987@gmail.com

Introduction: It is well known that acromegolies have been at an increased risk of colorectal neoplasm. However, there has been few reports of them in Japanese patients with acromegaly. In this study, we attempted to elucidate the risk of colorectal neoplasms in Japanese patients with acromegaly comparing with healthy controlled patients.

Aims & Methods: Between April 2008 and September 2016, a total of 745 patients were underwent Hardy operation in our institute. Among them, a total of 178 patients were our hospital during periproductive period and were enrolled in the case group. In contrast, a total of 356 patients were selected randomly from those who were performed colonoscopy in our medical check-up in the same period by means of being matched to cases of the age and gender. The incidence, size, location and histology of colorectal neoplasm were investigated.

Results: As background, 84 patients (47.2%) were men and 94 patients were women, and the median age was 47.5 years old (18 to 75) in the case group. The median height/weight was 165.5 cm/65.1 kg in the case group and was significantly larger than the control group (163.4 cm/60.1 kg) (p = 0.038, p < 0.001 respectively). The median Body Mass Index (BMI) were 23.4 in the case group and 22.5 in the control group. There was a significant difference between two groups (p < 0.001). The frequency of colorectal neoplasm was 66.8% (119/178 patients) in the case group and was significantly higher than control group of 24.2% (86/356 patients) (p = 0.001). The average number and size of neoplasm were 2.44 ± 4.74 mm in the case group and 1.77 ± 3.89 mm in the control group. There was a significant difference between two groups (p = 0.001). The distribution of neoplasm in the case group vs in the control group was shown 12.6% vs 12.8% in cecum, 30.3% vs 36% in ascending colon, 8.9% vs 30.2% in transverse colon, 15.1% vs 10.5% in descending colon, 66.4% vs 40.7% in sigmoid colon, and 31.9% vs 19.8% in rectum. The incidence of neoplasm in sigmosexual region had a significant difference in two groups (the case group 80.7% vs the control group 53.5%) (p < 0.001). In terms of neoplasm larger than 5 mm, the frequency was 34.3% (61/178 patients) in the case group and 7.6% (27/356 patients) in the control group (p < 0.001). In addition, as for neoplasm larger than 10 mm, that was 15.2% (27/178 patients) and 2.2% (8/356 patients) respectively (p < 0.001). The number of neoplasm resected by colonoscopy was 71 lesions by 24.5% of all in the case group and 5 lesion (16.4%) in the control group. The pathological examination in the case and control group showed eight and one had hyperplastic polyps, 2 and zero had sessile serrated adenoma/polyp, 3 and zero had inflammatory polyp, 48 and 19 had low grade adenomas, 4 and 3 had High grade adenomas, one and zero had carcinoid, and 5 and 2 had carcinoma respectively. There were no significant differences between two groups in the limited cases of high adenoma and carcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0869 COMPARISON OF WHITE LIGHT COLONOSCOPY AND A NOVEL ROBOTIC COLONOSCOPE IN THE ASSESSMENT OF UCERATIVE COLITIS
S. Pallott1, E. Tumino2, G. Mames3, S. Ardizzone4, R. Sacco5, F. Iannuzzi1, R. De Franciscis5
1Digestive Endoscopy, Luigi Sacco Hospital, Milano/Italy
2A.O.U. Pisa UO Gastroenterology, Pisa/Italy
3Ass Rhodeas, Gargnate Milanese/Italy
4Department Of Biomedical And Clinical Sciences, Università degli Studi di Milano, Milano/Italy
5Division of Gastroenterology and Metabolic Disease, University Hospital of Pisa, Pisa/Italy
6Medicine, Istituto di Ricovero e Cura a Carattere Scientifico, Milano/Italy

Contact E-mail Address: rassmusknum1974@gmail.com

Introduction: Colonoscopy in ulcerative colitis (UC) is performed as first diagnosis and during screening for dysplasia and disease flares. It is an invasive procedure with a burden of discomfort and possible complications. To overcome discomfort and complications due to colonoscopy an Italian high-tech start-up (Endotics, Peccioli, Italy) developed a soft, self-propelled, disposable robotic colonoscope (R), approved with CE mark.

Aims & Methods: We wanted to compare diagnostic performance and tolerability of R with those of standard white light colonoscopy (S) in patients with ulcerative colitis. Consecutive patients referred for colonoscopy to our endoscopy department with clinically mild to moderate ulcerative colitis that signed the informed consent for both procedures were studied first with R and then with S (Olympus CF-145), by two different operators, blinded to previous observations. R had the following technical specifications: 17 mm outer diameter, rest position length probe 30 cm; maximum length of probe 54 cm; working length 210 cm; NTSC CMOS analog camera. Conscious sedation with midazolam was administered as...
Aims & Methods: A total of 40 endoscopic video clips depicting LSTs (10% mean±SD) were obtained by 6 expert endoscopists: 3 from Japan and 3 from the West. Assessments included LST classification (LST-G homogeneous, LST-G mixed, LST-NG flat, LST-NG pseudodepressed), Paris classification, invasiveness, treatment suggestion and mean size of lesion. We calculated the interobserver agreement with weighted kappa and Chi square.

Results: Japanese endoscopists diagnosed more lesions as LST-G than Western (62.7 vs. 45.4%), Western diagnosed more LST-NG than Japanese (54.6 vs. 37.3%; p=0.007). The interobserver agreement of the LST classification among the six experts was good with a weighted Kappa of 0.61 (IC 0.95% 0.43-0.78) for Japanese, and moderate at 0.45 (IC95% 0.27-0.64) for Western. Difference in concordance between the two cohorts was not statistically significant (p=0.22). When only two categories were considered (LST-G vs NG), agreement was very good with a weighted Kappa of 0.81 (IC 95% CI 0.65-0.97) and good for Western endoscopists (0.65; 95% CI 0.46-0.85). Again, difference in concordance was not statistically significant (p=0.22).

P0871

CLINICAL USEFULNESS OF THE SMSA DIFFICULTY SCORE AND COMPARISON WITH A SUBJECTIVE SCORE FOR THE MANAGEMENT OF LARGE NON-PEDUNCULATED COLORECTAL LESIONS. A MULTICENTER STUDY FROM THE SPANISH ESOPHAGEAL SOCIETY ESOPHAGEAL RESECTION GROUP

References


Authors: Aims & Methods: The aim of this study was to assess the usefulness of the SMSA scoring system relating the difficulty level with outcomes and complications of EMR and to compare it with a subjective classification of difficulty. We conducted a prospective multi-center study with 1997 consecutive patients with large (≥20 mm) non-pedunculated colorectal lesions (LNPCl) treated by EMR (n=2198) at 23 hospitals belonging to the Spanish Endoscopy Society Endoscopic Resection Group, from January 2013 to October 2016. We

Contact E-mail Address: eduabeniz@hotmail.com

Introduction: A scoring system based on size, morphology, site and access (SMASA) score was established for determining the complexity of polyectomy and endoscopic submucosal dissection (Esd). It could predict outcome and complications of EMR.

Aims & Methods: The aim of this study was to validate the SMAS classification system comparing East and West. There were significant differences in the types of LST diagnosed, and concordance was good in the Japanese cohort and moderate in the Western, but not significantly different. The recommendations for treatment were also different. We suggest a modification of the classification system to enable a more unanimous diagnosis and therapeutic strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact: This study is the first to validate the LST classification system comparing East and West. There were significant differences in the types of LST diagnosed, and concordance was good in the Japanese cohort and moderate in the Western, but not significantly different. The recommendations for treatment were also different. We suggest a modification of the classification system to enable a more unanimous diagnosis and therapeutic strategy.
calculated the SMSA score of difficulty and assessed the ability of SMSA to identify 5 outcomes: 3-months recurrence, 1-year recurrence, global recurrence (endoscopy not effective after 2 or more treatments), delayed bleeding and perforation. We compared results with those obtained using a subjective classification of difficulty: easy or medium vs difficult. Comparisons were conducted using chi-squared tests and complemented with logistic regression models.

Results: The SMSA scoring system classified 690 polyps (39%) as level 4 and 1098 (61%) as level 3, whereas the subjective classification system classified 399 (22%) as difficult and 1389 (78%) as easy or medium. The agreement between measures of difficulty was weak (k = 0.33). 255 patients (19.9%) had recurrence 3 months after EMR, 84 (11.6%) had recurrence at 1 year, 78 (3.5%) suffered delayed bleeding and 35 (1.8%) perforation. The level 4 polyps had significantly higher rates of recurrence at 3 months and 1 year (p < 0.001 in both cases) and delayed bleeding (p = 0.006), but not for perforation.

Conclusion: The SMSA grading tool is a predictor of outcomes or recurrences and bleeding following resection of LNIPC. However, in our multi-center sample, it does not appear to overcome the subjectivity of a subjective indicator of difficulty assessed by the endoscopist during the EMR. It seems that this score can be used to facilitate planning, training or competency assessment, but efforts should be focused on validating the scoring system in a real situation, adjusting the score of variables or including new ones.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0872 NARROW BAND IMAGING GUIDED BIOPSY IMPROVES THE YIELD OF HISTOPATHOLOGY FOR THE DIAGNOSIS OF GASTROINTESTINAL TUBERCULOSIS (GITB)
N. Berry, S. K. Sinha, S. Malik, R. Kohchar, K. Vaiphei, K. Sharma, N. Dhaka, A. Koshi Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Contact E-mail Address: sarojk.sinha@hotmail.com

Introduction: Accurate diagnosis of gastrointestinal tuberculosis (GITB) is challenging due to pauci-bacillary nature of disease and poor sensitivity of histopathology. Role of tissue acquisition using narrow band imaging magnification (NBI-M) to improve yield of histopathology over high-definition white light endoscopy (HD-WLE) has not been assessed.

Aims & Methods: Utilizing narrow band imaging with magnification versus high-definition white light imaging guided endoscopic biopsy for diagnosis of gastrointestinal tuberculosis. In this prospective study from July 2015 to November 2016, adult cases of clinically suspected GITB were recruited. All patients underwent NBI-M test, contrast enhanced computed tomography of abdomen, esophagogastroduodenoscopy and/or colonoscopy using both HD-WLE and NBI-M and guided biopsies using both were taken. Histopathological examination was done by two independent pathologists. A final diagnosis of GITB was made if acid-fast bacilli were seen in tissue or grown in culture, histopathology showed caseous necrosis with granulomatous inflammation or clinical/radiological and endoscopic features were suggestive of tuberculosis and clinical response to antitubercular therapy.

Results: A total of 35 cases of clinically suspected GITB were recruited. A final diagnosis of tuberculosis was made in 32 cases (duodenal n = 4, ileocecal n = 28). Concomitant evidence of active or healed pulmonary tuberculosis was seen in 21% of the cases. The mean age, haemoglobin and erythrocyte sedimentation rate of patients with tuberculosis were 36.4±14.6 years, 10.2±2.4 g/dl, 37.8±15.3 mm/hour respectively. The mean duration of symptoms was 10.9 months. The most common symptoms were pain abdomen (78%), weight loss (62.5%), and loss of appetite (40.6%), fever (37.5%), vomiting (34%) and diarrhea (22%). Mantoux test was positive in 40.6% cases. The most common endoscopic findings were ulcerations (75%), nodularity (46.8), distorted ileocecal valve (28%) and strictures (21.8%) (Table 1). The most common radiological findings were mural wall thickening (65.6%), mesenteric lymphadenopathy (56%) and strictures (40%) (Table 1). NBI-M guided biopsy confirmed the diagnosis of GITB in 46.88%, while HD WLE guided biopsy confirmed diagnosis of GITB in 28.12% (P, 0.04). The two sets of biopsies together confirmed diagnosis of GITB in 53.1%. The area under curve for NBI-M plus HDWLE, NBI-M alone and HDWLE alone were 0.77(0.63–0.87), 0.73 (0.60–0.85) and 0.64 (0.50–0.77) respectively. Patients were started on anti-tubercular therapy for nine months. Four patients underwent surgery for intestinal obstruction while on antitubercular therapy. Twenty eight completed full therapy and improved.

Conclusion: NBI-M guided biopsy improved the yield of histology for diagnosis of GITB.

Endoscopic findings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>N (%)</th>
<th>Parameter</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcerations</td>
<td>24 (75)</td>
<td>Mesenteric lymphadenopathy</td>
<td>18 (56)</td>
</tr>
<tr>
<td>Nodularity</td>
<td>15 (46.8)</td>
<td>Stricture</td>
<td>7 (21.8)</td>
</tr>
<tr>
<td>Distorted ileocecal valve</td>
<td>9 (28.1)</td>
<td>Ascestes</td>
<td>5 (15.6)</td>
</tr>
<tr>
<td>Hyperemia</td>
<td>3 (9.3)</td>
<td>Peritoneal thickening</td>
<td>1 (3.1)</td>
</tr>
<tr>
<td>Pseudopolyp</td>
<td>2 (6.2)</td>
<td>Omental nodularity</td>
<td>1 (3.1)</td>
</tr>
<tr>
<td>Intussusception</td>
<td>1 (3.1)</td>
<td>Psoas abscess</td>
<td>1 (3.1)</td>
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</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

P0873 EFFICACY AND SAFETY OF ENDOSCOPIC RESECTION OF LARGE COLORECTAL ADENOMAS – CLINICAL EXPERIENCE OF A TERTIARY REFERRAL CENTER
L. Mlynarsky1, S. Zelber-Sagi2, E. Miller1, R. Kariv1
1Sackler Faculty of Medicine, Tel-Aviv University, Tel Aviv, Israel
2School Of Public Health, Faculty Of Social Welfare And Health Sciences, University Of Haifa, Haifa, Israel

Gastroenterology And Hepatology, Tel Aviv medical center, Tel-aviv, Israel

Contact E-mail Address: revitalk@tlvmc.gov.il

Introduction: Colorectal cancer is a leading cause for cancer related mortality. Adenomatous polyp, the precursor lesion, can usually be endoscopically resected to prevent cancer. Currently, there are no criteria for surgical vs. endoscopic resection and decision is individually made by the treating physician.

Aims & Methods: We aimed to evaluate factors associated with short-term efficacy and safety of endoscopic resection of large (>20 mm) and giant (>40 mm) adenomas. Consecutive cases that underwent endoscopic resection of adenomas larger than 20 mm were included. Endoscopic, clinical and histological details of polyps and of the endoscopic procedure were recorded as well as the need for surgery.

Results: Total of 351 resections were included. Average diameter was 30.34±10.66 mm. Surgery was indicated in 21 (5.98%) cases. In a multivariate analysis for efficacy, two variables were independent risk factors for surgery: adenoma size (OR 95%Ci 1.08 (1.04-1.12) and cecal location (OR 95%Ci 5.67 (1.60–22.33)). Post-polypectomy complications were documented in 85 cases (24.2%): bleeding - 69 (19.7%, 54/69 managed during procedure), perforation - 8 (2.3%) and significant discomfort up to early termination of procedure - 15 (4.3%). Only 21 (6.0%) developed serious complications requiring further hospitalization. In multivariate analysis for safety, independent risk factors for post-polypectomy complications were: adenoma size (OR 95%C1 1.04 (1.01–1.06), polyph morphology (esophageal OR 95%C1 2.55 (1.45–4.51), flat OR 95%C1 2.40 (1.04–5.52) and submucosal adrenaline injection (OR 95%C1 1.87 (1.11–3.20)). Every increment of 1 mm in adenoma diameter above 20 mm, increased the need for surgery by 8% and the risk for complications by 4%.

Conclusion: Resection of large or giant adenomas is generally a safe procedure when performed by an experienced endoscopist. Although adenoma size is the most significantly related to efficacy and safety, each case of giant adenoma should be evaluated in a referral center for feasibility of endoscopic resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract: P0871. Outcome by SMSA grade. Odds ratios and 95% CI ROC Curves by SMSA using the score in the continuous

<table>
<thead>
<tr>
<th>SMSA score</th>
<th>Level 3</th>
<th>Level 4</th>
<th>p-value</th>
<th>Subjective difficulty score</th>
<th>p-value</th>
<th>ROC Curves by SMSA</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-months recurrence</td>
<td>73 (12.2%)</td>
<td>125 (27.6%)</td>
<td>&lt;0.001</td>
<td>125 (25.2%)</td>
<td>&lt;0.001</td>
<td>0.64 (0.60, 0.69)</td>
<td>1.28 (1.18, 1.38)</td>
</tr>
<tr>
<td>1-year recurrence</td>
<td>29 (7.7%)</td>
<td>46 (12.7%)</td>
<td>&lt;0.001</td>
<td>46 (9.0%)</td>
<td>&lt;0.001</td>
<td>0.66 (0.59, 0.72)</td>
<td>1.33 (1.18, 1.50)</td>
</tr>
<tr>
<td>Global recurrence</td>
<td>25 (5.8%)</td>
<td>27 (6.9%)</td>
<td>0.106</td>
<td>27 (4.7%)</td>
<td>0.106</td>
<td>0.54 (0.46, 0.63)</td>
<td>1.00 (0.94, 1.24)</td>
</tr>
<tr>
<td>Delayed bleeding</td>
<td>29 (3.1%)</td>
<td>55 (5.6%)</td>
<td>0.012</td>
<td>41 (3.4%)</td>
<td>0.012</td>
<td>0.61 (0.53, 0.69)</td>
<td>1.23 (1.09, 1.39)</td>
</tr>
<tr>
<td>Perforation</td>
<td>18 (1.9%)</td>
<td>18 (1.6%)</td>
<td>0.631</td>
<td>18 (1.5%)</td>
<td>0.631</td>
<td>0.50 (0.46, 0.64)</td>
<td>1.08 (0.88, 1.27)</td>
</tr>
</tbody>
</table>
P0874 COLORECTAL MUCOSAL DEFECT CLOSURE FOLLOWING ENDOSCOPIC MUCOSAL RESECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

C. Palmela1, P. Marques Da Costa2, A. O. Ferrereira3
1Gastroenterology Department, Hospital Beatriz Angeló, Loures/Portugal
2Gastroenterology And Hepatology Department, Hospital de Santa Maria, Lisboa/Portugal

Contact E-mail Address: palmela.carolina@gmail.com

Introduction: Clinical meaningful delayed bleeding is the most frequent adverse event following endoscopic colorectal mucosal resection. Observational and interventional studies on the efficacy of prophylactic closure (PC) following endoscopic mucosal resection (EMR) showed conflicting results.

Aims & Methods: The primary objective of this review is to evaluate the effectiveness in preventing bleeding and post-polypectomy syndrome (PPS) or perforation of PC of colonic mucosal defects following endoscopic resection. We performed a systematic review and meta-analysis of randomized controlled trials (RCTs) from MEDLINE. We included studies with humans submitted to colonoscopy and in whom mucosal flat or sessile (Paris classification 0-II or Is) lesions with an estimated size ≥10 mm were found and removed.

Results: 269 articles were initially screened; 5 were RCTs, 4 of them were pooled in the quantitative analysis. A total of 555 patients and 557 resected lesions (proximal colon: 220; distal: 337) were included. Endoscopic procedures: 459 loop polypectomies and 98 submucosal dissections. A total of 298 lesions were randomized to PC versus 259 to non-closure (NC). Number of events on PC group: delayed bleeding (n = 3), PC and perforation (n = 61). Number of events on NC group: delayed bleeding (n = 13), PC and perforation (n = 14). Prophylactic mucosal defect closure was effective in reducing delayed bleeding risk (OR 0.036; 95%CI 0.004–0.77, p = 0.020; I² = 0.0%; 2 RCT and 452 lesions included). There was no non-significant trend for PPS/perforation risk reduction after PC (OR 0.349, 95%CI 0.114–1.070, p = 0.066; I² = 0.0%; 2 RCT and 374 lesions included).

Conclusion: Prophylactic closure of mucosal defects after EMR of flat or sessile colorectal lesions ≥10 mm reduces de risk of delayed bleeding. Further studies are needed to evaluate the effect on PPS/perforation prevention.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0875 RECTAL ESD IN VERY OLD PATIENTS (>80 YEARS): A FRENCH MULTICENTER RETROSPECTIVE STUDY

R. Legros1, J. Alloboy1, M. Guillaumot2, V. Lepliliec2, S. Chaussade2, M. Choche2, S. Leblanc2, M. Barret2, F. Priti2, J. Rivory2, D. Sauterseau3, T. Bouchon4, J. Jacques3
1Hepato-gastro-entérology, CHU Limoges - Hepato-Gastro-Enterology, CHU Limoges: Limoges/France
2Gastroenterology, Cochin Hospital, Paris/France
3Hepato-gastroenterology, Hopital Edouard Herriot, Lyon/France

Contact E-mail Address: raphael.legros@gmail.com

Introduction: Endoscopic Submucosal Dissection has become the standard of care for large superficial rectal pre-cancerous and cancers lesions. It allows an en-bloc resection of large superficial lesions that increase the quality of pathological analysis and considerably decrease the risk of recurrence. Risk of having large superficial lesions increase with age and no study have focused specifically on ESD in very old people (>80 years). Indeed in this population alternative surgery had a high morbidity and is often refused or contraindicated for these patients.

Aims & Methods: Retrospective bicentre study of all cases of rectal ESDs performed between 06/2010 and 12/2016 for superficial pre-cancerous or cancerous neoplasms in patients older than 80 years. Four French teams that performed more than 150 ESDs in the last 5 years. Primary Endpoint was to evaluate the En bloc, R0, curative resection rate and complications in patients older than 80 years. Secondary endpoints were to compare these results with rectal ESDs performed during the same period for patients younger than 80 years.

Results: 58 rectal ESDs were performed in four French centers between 06/2010 and 12/2016 for superficial pre-cancerous or cancerous neoplasms in patients older than 80 years. Descriptive results: male 28 (48%), mean size of the specimen: 56.4 mm, mean duration of procedure 143.7 min, mean speed of ESD 19.8 mm²/min, perforation rate: 3 (6.2%), post-procedural bleeding: 7 (12%), secondary surgery 2 (3.4%). Pathological analysis: low-grade dysplasia in 19%, high-grade dysplasia in 28%, intra-mucosal carcinoma in 5%, superficial submucosal carcinoma in 5%, deep submucosal carcinoma in 5%, adenoma in 34% and adenoma in 6.9%. Only 1 patients (1.7%) had a recurrent disease during endoscopic follow up. Primary Endpoint: En bloc resection: 86.2%, R0 resection: 62.5%, curative resection: 62.5%. Secondary Endpoint: Duration of procedure was longer in older people. Speed of ESD was lower. En bloc and R0 resection were lower in very old patients. Cancer was more frequent in very old patients (>80 years) and younger patients (<80 years) are resumed in table 1.

Conclusion: ESD is feasible and efficient in very old patients. However, En bloc resection and R0 resection are less frequent than in younger patients probably due to more challenging lesions (more frequent cancer on the pathological analysis). ESD should be the treatment of choice for large rectal superficial neoplasms of the rectum in very old patients in view of its oncological efficiency and its safety in comparison to the surgical alternative.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


Disclosure of Interest:

P0876 COLONOSCOPY, SPLIT-DOSE PROTOCOL IMPLEMENTATION: A SINGLE-CENTRE EXPERIENCE

C. Palmela, C. Gomes, M.P. Costa Santos, M. Rocha, S. Pereira, D. Tavares, R. Ribeiro, A. O. Ferrerere, E. Barjas, M. Bravo Gastroenterology Department, Hospital Beatriz Angeló, Loures/Portugal

Contact E-mail Address: palmela.carolina@gmail.com

Introduction: Split-dose bowel preparation (SD) is more effective in bowel cleansing quality in patients from a district hospital. This was an exploratory observational study of patients who underwent total colonoscopy between jun/2016-mar/2017 with polyethylene glycol bowel preparation before and after SD protocol implementation. Bowel cleansing quality was assessed prospectively (using Boston Bowel Preparation Score) and compared between SD and PD groups. Tolerance was assessed using a patient questionnaire.

Results: A total of 344 patients were included, 53% were male, mean age of 61.8±13.6 years. Bowel preparation: 66% SD and 34% PD. Overall, 72% of colonoscopies occurred in morning shifts. Mean interval between finishing bowel preparation and colonoscopy was 4h30 (SD) and 8h09 (PD). Adequate bowel cleansing was found in 51% of patients (SD 83% vs. PD 79%; p=0.34). There was an association between adequate bowel cleansing and a shorter interval between finishing preparation and colonoscopy (5h40 vs. 7h15; p=0.010). Split-dose preparation was associated with a better cleaning in the right colon (2.17±0.69 vs. 2.03±0.65; p=0.047) and a trend for better overall cleansing (6.70±1.87 vs. 6.32±1.90; p=0.067). On morning shifts, there was a significant association between SD prep and better overall cleansing (p=0.030) and also right colon cleansing (p=0.034). After adjusting for morning shifts, we found an association between SD preparation and better bowel cleansing (risk difference 0.406; 95%CI –0.023–0.834; p=0.063). There was no difference between groups on bowel urgency (SD 2.6% vs. PD 1.7%; p=0.718). SD preparation was associated with worse sleep quality (SD 25% vs. DA 7%; p=0.004).

Conclusion: The implementation of a split-dose bowel preparation protocol in our hospital was associated with better bowel cleansing, especially on the right colon. Split-dose preparation was not associated with higher bowel urgency, although there was a worse sleep quality.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0877 EQUAL ADENOMA DETECTION RATE IN COLORECTAL ESD CONVERSION TO EMR AT A WESTERN REFERRAL CENTER IN DAILY PRACTICE


P0878 RISK FACTORS AND PRACTICAL CONSEQUENCES OF COLORECTAL ESD CONVERSION TO EMR AT A WESTERN REFERRAL CENTER IN DAILY PRACTICE


P0879 CONTRIBUTION OF COLONOSCOPY IN ELDERLY PATIENTS OLDER THAN 70 YEARS

A. El Mekkaoui1, A. Taimiy1, A. Zazour2, W. Khannoussi3, G. Kharrasse3, Z. Ismaili3

1Hepato Gastro Entology, University hospital Mohammed VI, Oujda/Morocco
2Gastroenterology, Farabi Hospital, Oujda/Morocco
3Avicenne, Faculty of medicine Oujda, Oujda/Morocco
4Medical School, Casablanca/Morocco

Contact E-mail Address: meziane@hotmail.com

Introduction: The elderly patients are considered as a particular population. Colonoscopy has an important place at this population because of the limited number of normal paraclinic examinations and the high incidence of tumor disease, specially the colo rectal cancer.

Aims & Methods: The aim of this study was to determine the indications and results of colonoscopy in people older than 70 years We performed a retrospectivereview study over a 2 years from beginning of the endoscopic unit until February 2017, conducted in the department of hepatogastroenterology of our university hospital. All patients over the age of 70 years who have underwent colonoscopy have been included.

Results: A total of 1059 colonoscopies were performed, 10.3% were indicated for people older than 70 years. The mean age was 74.15 years with a median age of 75 years and a maximum age of 91 years. The prevalence of males was 51%. 10.5% of cases (n = 10) were diabetic, 12.6% (n = 12) hypertensive, 12.6% (n = 12) with ischemic heart disease. 8.4% (n = 8) had either diabetes or high and 9% (n = 9) had a digestive neoplasia. Colonoscopy was indicated for hematochezia in 40% (n = 38), transit disorders in 33.6% (n = 32), abdominal pain in 14.7% (n = 14), IBD in 3.1% (n = 3), radiographic abnormalities in 13.6% (n = 13), iron deficiency anemia in 4.2%, and for patients with a family history of colorectal cancer in 1% of cases. Colonoscopy was abnormal in 83% (n = 18), with polyps in 45.3% (n = 45), suspected lesions of malignancy in 16.1% (n = 15), Diarrhea in 24.7% (n = 24), and for patients with a family history of colorectal cancer in 1% of cases.

Conclusion: Colonoscopy was abnormal in 83% of cases. Colonoscopy in this age group is intended not only to detect colorectal cancer, but also to rule out other conditions such as inflammatory bowel disease, polyps, or diverticulosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0880 ENDOSCOPIC CLOSURE OF ACUTE IATROGENIC PERFORATIONS OF THE GASTROINTESTINAL TRACT AND PREDICTORS OF NEED FOR EARLY SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

A. Gabr1, N. Ammar2, M. ElHousnine1, M. Rutter1
1East Kent University Hospitals NHS, FD/United Kingdom
2Public Health Department, Am Shams University, Cairo/Egypt

Contact E-mail Address: a.gabri@hotmail.co.uk

Introduction: Acute iatrogenic perforations are one of the recognized complications of both diagnostic and therapeutic gastrointestinal endoscopy. For decades, surgical treatment has been the standard of care, but endoscopic closure has become a more popular approach, due to feasibility and the reduction of the
burden of surgery, combined with the availability of various endoscopic closure devices.

Aims & Methods: To assess the technical and clinical success and safety of endoscopic closure, in total, and for each endoscopic device used. Also, to identify factors predicting surgery as a first line treatment, and failure of endoscopic treatment. Using Medical literature (Cochrane library, EMBASE, MEDLINE) from 1966 till September 2016 was searched. A systematic review and meta-analysis were performed on studies reporting technical and clinical success of endoscopic closure of acute iatrogenic perforations, according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines.

Results: 764 studies were identified. 28 studies, in human, met our inclusion criteria and were analysed. A total of 474 endoscopic closures were attempted in these studies. The overall technical success rate was 93.1% (n = 451/474, 95% CI: 91.5%–94.5%), and complication rate was 1.3% (n = 7/474, 95% CI: 0.5%–2.3%). Technical success for endoclips closure was 96.6% (95% CI: 94.2%–98.2%), and clinical success was 93% (95% CI: 87.1%–97.2%), and complications were 6.5% (95% CI: 0%–13.7%). For OTSC (Over the scope clip device), technical success was 83.8% (95% CI: 63.9%–96.6%), and clinical success was 77.9% (95% CI: 56.8%–93.3%), and complication rate was 4.1% (95% CI: 0%–12.6%). The technical success rate for Self-expanding metallic stent (SEMS) is 100% (95% CI: 71.5%–100%), clinical success is 99% (95% CI: 74.1%–108%), and complication rate of 9.1% (95% CI: 78%–112%). Only one study for endosuturing met our criteria, with technical and clinical success rate of 100%, and without any complication. Factors predicting failure of endoscopic treatment and need for early surgical intervention included large size, leukocytosis, fever, severe abdominal pain, large amount of peritoneal free air, necrotic or soft inflammatory margins, unfavourable anatomical site, stool contamination and failure of endoscopic closure.

Conclusion: Our study suggests that endoscopic closure is a suitable treatment option for acute iatrogenic gastrointestinal perforations. Several factors have been suggested as predictors of need for surgery as a first line treatment. The study was limited by the low methodological quality of most studies included, indicating the need for further research.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Chavez, Y.H et al (2013). A large international multicentre experience with an over-the-scope clipping device for endoscopic management of Gastrointestinal perforations, fistulae, and leaks in 186 patients Citation: Gastrointestinal Endoscopy, May 2013, vol./is. 77/5 SUPL. 1(A148-A149), 0016-5107.
could have many experiences of gastric ESD that may be beneficial for the improvement of ERCP. However, there is little knowledge about the learning curve of the young endoscopists who perform the colorectal ERCP first.

Aims & Methods: We conducted multi-center retrospective observational study to elucidate the safety and learning curve of the trainee who perform the colorectal ERCP. The study included 245 patients with colorectal ERCP performed by three endoscopists in Nippon Medical School Hospital and Machida Ichio Hospital from 2010 to August 2016. The ESD devices were Flush knife BT (Fujifilm), Dual knife (Olympus), Hook knife (Olympus) or a combination by operators. The endoscopist A and B, who had over 10000 examinations of colonoscopy and experiences of gastric ESD (as expert group), and endoscopist C had about 1000 colonoscopy and studied colorectal ERCP first (as trainee group). The complete rate of operation, which is defined as en-block resection rate without changing operator, operation time, speed (time/mm2) and complications were analyzed in each endoscopist. Furthermore, we divided these procedures in three periods equally as early, middle and late.

Results: The median age was 70 (range 26–91) years old, and genders were 158 males and 103 females. Tumor locations were proximal colon, distal colon and rectum in 143(54.8%), 59(22.6%), and 59(22.6%), respectively. The pathological types were well and moderately differentiated tubular adenocarcinoma, adenocarcinoma in situ, adenosquamous cell carcinoma, and neuroendocrine tumor in 139(60.4%), 59(22.6%), and 59(22.6%), respectively. The patients were 100% in the initial, middle, and late period, respectively.

The reported complications in both groups

<table>
<thead>
<tr>
<th>Complications</th>
<th>Group A</th>
<th>Group B</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>47 (95.9%)</td>
<td>41 (83.7%)</td>
<td>0.04</td>
</tr>
<tr>
<td>Bleeding</td>
<td>1 (2%)</td>
<td>4 (8%)</td>
<td></td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>1 (2%)</td>
<td>2 (4%)</td>
<td></td>
</tr>
<tr>
<td>Cholangitis</td>
<td>0 (0%)</td>
<td>2 (4%)</td>
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</table>

Conclusion: Trainee endoscopist may have a good learning curve in operation rate and increasing experience reflects in a remarkable success in colorectal ERCP. We confirmed that the training of colorectal ERCP first was acceptable by the trainee endoscopist who had no experience of gastric ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0884 LARGE BALLOON DILATATION VERSUS MECHANICAL LITHOTRIPSY AFTER ENDOSCOPIC SPHINCTEROTOMY IN MANAGEMENT OF LARGE COMMON BILE DUCT STONES AMONG CIRRHOTIC PATIENTS

M. I. Radwan1, M. H. Emara Elzanan2, I. M. Ibrahim3, M. E. Morsy1

1Tropical Medicine, Zagazig University, Tropical Medicine Faculty of Medicine, Zagazig/Egypt
2Tropical Medicine, Kafrelsheikh University, Kaf Elshikh/Egypt
3Medicine, Alahrar Teaching Hospital, Al-ahrar/Egypt

Contact Email Address: emara_2007@yahoo.com

Introduction: Removal of large common bile duct (CBD) stones is one of the challenges during ERCP and it seems more difficult in cirrhotic patients due to the risk of adverse events, as well as to the capability to change direction during the procedure and with liver cirrhosis can tolerate ERCP to treat their biliary tract or pancreatic diseases. Patients with liver cirrhosis are three times more susceptible to cholelithiasis than normal population and could have many other chronic diseases and that is why ERCP is increasingly performed for patients with cirrhosis. Endoscopic sphincterotomy (EST) has become a standard step in the management of CBD stones and introduction of both mechanical lithotripsy (ML) and large balloon dilatation (LBD) facilitated extraction of the large CBD stones. Despite the increasing use of both techniques, a head-to-head comparison of them is defined as en-block resection rate without changing operator, operation time, speed (time/mm2) and complications were analyzed in each endoscopist. Furthermore, we divided these procedures in three periods equally as early, middle and late.

Results: The median age was 70 (range 26–91) years old, and genders were 158 males and 103 females. Tumor locations were proximal colon, distal colon and rectum in 143(54.8%), 59(22.6%), and 59(22.6%), respectively. The pathological types were well and moderately differentiated tubular adenocarcinoma, adenocarcinoma in situ, adenosquamous cell carcinoma, and neuroendocrine tumor in 139(60.4%), 59(22.6%), and 59(22.6%), respectively. The patients were 100% in the initial, middle, and late period, respectively.

The reported complications in both groups

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<td>47 (95.9%)</td>
<td>41 (83.7%)</td>
<td>0.04</td>
</tr>
<tr>
<td>Bleeding</td>
<td>1 (2%)</td>
<td>4 (8%)</td>
<td></td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>1 (2%)</td>
<td>2 (4%)</td>
<td></td>
</tr>
<tr>
<td>Cholangitis</td>
<td>0 (0%)</td>
<td>2 (4%)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Trainee endoscopist may have a good learning curve in operation rate and increasing experience reflects in a remarkable success in colorectal ERCP. We confirmed that the training of colorectal ERCP first was acceptable by the trainee endoscopist who had no experience of gastric ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0885 SAFETY AND EFFICACY OF ENDOSCOPIST-DIRECTED BALLOON SEDATION (BPS) DURING ENDOSCOPIC RETROGRADE CHOLANGIO-PANCREATOSCOPY (ERCP)

A. Lapidos1, I. M. Graulke2, A. Suisse3, A. Klein4, K. A. Yassin5, L. Khamaysi6

1The Ruth and Bruce Rappaport Faculty Of Medicine, Technion - Israel Institute of Technology, Haifa/Israel
2Institute Of Gastroenterology And Hepatology, Ha’Emek Medical Center, Afula/Israel
3Department Of Gastroenterology, Rambam Health Care Campus, Haifa/Israel

Contact Email Address: alon.lap@gmail.com

Introduction: Endoscopist-directed balanced Propofol sedation (BPS), defined as a fixed dose of an opioid and benzodiazepine combined with incremental doses of Propofol, has been shown to be a safe and effective moderate sedation regimen for gastroscopy and colonoscopy. However, there are very limited data on the safety and efficacy of endoscopist-directed BPS in ERCP.

Aims & Methods: We aimed to evaluate the safety and efficacy of endoscopist-directed BPS, as well as to compare patient outcomes with anesthesiologist-administered BPS, for both in-patients and out-patients undergoing ERCP. We performed a retrospective cohort study using prospectively collected endoscopy data from a tertiary care, university-affiliated medical center where endoscopist-directed BPS during ERCP is routine practice amongst the ERCPists, all of whom have up-to-date advanced cardiac life support (ACLS) certification. ERCP nurses also maintain up-to-date certification in ACLS and cardiopulmonary resuscitation equipment and medications are available within the advanced endoscopy suite. During ERCP, the endoscopist and the endoscopy nurse as a team were responsible for monitoring patient vital signs (e.g., pulse, blood pressure, oxygen saturation levels). Each endoscopist was responsible for directing the provision and dosing of the BPS. Patient-level demographics and pre/post procedure vital signs were collected along with BPS drug dosages, American Society of Anesthesiologists score (ASA) and measured "hard endpoint" patient outcomes, including: need for bag-mask ventilation or endotracheal intubation, need for bag-mask ventilation or endotracheal intubation due to sedation effects, need for hospital admission post-ERCP (out-patients only) or need for change in level of hospital care (in-patients only), and mortality within 24 hours of ERCP.

Results: Over the course of 17 months (October 2015 – March 2017), 501 patients underwent ERCP and received endoscpist-directed BPS (Cohort 1: 380 (76%) inpatient, mean age 61.4 years, 46% males, 24% ASA I, 65% ASA II, 11% ASA III). During this same time period, 24 patients received anesthesiologist–administered BPS for both in-patients and out-patients undergoing ERCP. We performed a logistic regression analysis to compare patient outcomes between the two groups. The indications for ERCP were: 231 (46%) suspected cholecodolithiasis, 68 (13%) stent placement, 62 (12%) evaluation of known/suspected malignancy, 48 (10%) jaundice, 40 (8%) post-hepatobiliary intervention complications, 8 (2%) abdominal pain, and 44 (9%) other/unspecified. BPS dosages (mean ± SD: range) were: Fentanyl 0.06 mg±0.02 mg: 0.05–0.10 mg; Midazolam 1.5 mg±0.07 mg: 1.0–2.5 mg; and Propofol 178 mg±103 mg: 10–640 mg. Propofol dose inversely correlated with patient age (r = -0.42, p < 0.001), ASA score (r = -0.19, p < 0.001) and Mallampati score (r = -0.34, p < 0.001). No clinically meaningful differences were found in patient vital signs pre and post ERCP. Moreover, no patient required bag-mask ventilation, endotracheal intubation nor hospital admission/ change in level of in-hospital care following ERCP. One patient in Cohort 2 who...
received anesthetologist-directed BPS, required bag-mask ventilation and the EUS was aborted due to sedation effects. There was no mortality from any cause within 24 hours of ERCP. All patients were discharged from the advanced endoscopy suite without adverse events.

Conclusion: Endoscopist-directed BPS appears feasible, safe and efficacious for ASA I-IIIP patients requiring inguinal or patient EUS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0886 A NOVEL METHOD OF PREVENTING DUODENOBLIARY REFLUX BY MEANS OF SUSPENDED OVERLENGTH BILARY STENTS IN PATIENTS WITH BILARY STRicture

Y. Huang, X. Yan, H. Chang, Y. Zhang, W. Yao, K. Li
Gastroenterology & Hepatology, Peking University Third Hospital, Beijing/China

Contact E-mail Address: 13911765522@163.com

Introduction: Endoscopic insertion of plastic or metal stents is a well-established treatment for malignant or part of benign biliary obstruction. The major limitation of this technique is stent occlusion. Duodenobiliary reflux has been considered as a key contributor to stent occlusion. No appropriate method can so far prevent duodenobiliary reflux. Different strategies to prolong the patency of plastic stents included changing stent size, stent design, and stent sludge due to duodenal biliary reflux remains an unsolved problem. We have been using a novel suspended overlength biliary stents (reformed with nasobiliary tube) as substitution for ordinary biliary plastic stent to prevent the reflux from January 31, 2016.

Aims & Methods: The aim of the study is to evaluate the efficacy and patency of the suspended overlength biliary stents. The suspended overlength biliary stents (SOBS) were placed in intraduodenal bile duct in 61 patients with extrabiliary bile duct stricture who were followed up at least three months from January 1, 2016 to December 31, 2016. Nasobiliary tube of 7.5Fr or 8.5Fr with multiple side holes were cut 30 cm with operation knife from the top on sterile operating table. The purpose of the set of 30 cm length is to ensure the tail reaches the duodenal horizontal part. The SOBS were placed in the intraduodenal biliary duct by using conveyor under the fluoroscopic guidance at the end of ERCP. Radiography of the Meglumine Diatrizoate was performed in each patient of SOBS group to evaluate the existence of duodenal biliary reflux. 74 patients who were evaluated at least two or more ERCP with extrabiliary bile duct stricture treated with ordinary plastic stents (OBS group) from last ten years were compared with SOBS group.

Results: (1) The mean age of SOBS and OBS were 68.8±15.6yrs and 60.4±14.7yrs (P=0.002), respectively. (2) 35 (57.4%) and 34 (45.9%) patients were malignant biliary obstruction in SOBS and OBS group, respectively (P=0.227). Malignant obstruction included bile duct cancer and biliary duct invasion of pancreatic cancer. Benign obstruction included autoimmune pancreatitis, chronic pancreatitis, post operation stenosis, inflammatory stenosis due to cholelithiasis. (3) The mean first and second patency was 4.5 months and 5.6 months in OBS groups. All the patients in OBS group experienced at least three months from January 1, 2016 to December 31, 2016. Nasobiliary tube of 7.5Fr or 8.5Fr with multiple side holes were cut 30 cm with operation knife from the top on sterile operating table. The purpose of the set of 30 cm length is to ensure the tail reaches the duodenal horizontal part. The SOBS were placed in the intraduodenal biliary duct by using conveyor under the fluoroscopic guidance at the end of ERCP. Radiography of the Meglumine Diatrizoate was performed in each patient of SOBS group to evaluate the existence of duodenal biliary reflux. 74 patients who were evaluated at least two or more ERCP with extrabiliary bile duct stricture treated with ordinary plastic stents (OBS group) from last ten years were compared with SOBS group.

Conclusion: Suspended overlength biliary stents can prolong the patency and reduce the occlusion rate effectively due to duodenobiliary reflux in both malignant and benign biliary stricture.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0887 DUODENOSCOPES AND LINEAR ECHOENDOSCOPES ARE NOT CONTAMINATED WITH MULTIDRUG-RESISTANT ORGANISMS: A NATIONWIDE PERSISTENT HIGH PREVALENCE IN THE NETHERLANDS

A. W. Rauwers1, A. F. Voor In ‘T Holl2, W. De Groot1, J. G. Buijs3, B. E. Hansen1, M. C. Vos4, M.J. Bruno1
1Department of Endoscopy & Hepatology, Erasmus MC University Medical Center, Rotterdam/Netherlands
2Medical Microbiology And Infectious Diseases, Erasmus MC University Medical Center, Rotterdam/Netherlands
3Staff Office Medical Devices, Erasmus MC University Medical Center, Rotterdam, the Netherlands. Rotterdam/Netherlands
4Pentax Medical Netherlands

Contact E-mail Address: a.rauwers@erasmusmc.nl

Introduction: Recent studies describe multiple outbreaks of multi-drug resistant organisms caused by contaminated duodenoscopes, used for endoscopic retrograde cholangiopancreatography (ERCP) procedures. Contamination of duodenoscopes is a major worldwide problem. Current devices of duodenoscopes do not guarantee complete decontamination. In 2015, a new ERCP device was developed for endoscopy suites without adverse events.

Aims & Methods: The purpose of the set of 30 cm length is to ensure the tail reaches the duodenal horizontal part. The SOBS were placed in the intraduodenal biliary duct by using conveyor under the fluoroscopic guidance at the end of ERCP. Radiography of the Meglumine Diatrizoate was performed in each patient of SOBS group to evaluate the existence of duodenal biliary reflux. 74 patients who were evaluated at least two or more ERCP with extrabiliary bile duct stricture treated with ordinary plastic stents (OBS group) from last ten years were compared with SOBS group.

Conclusion: Similar to our previous findings, in 47% of all Dutch ERCP/EUS centres at least one patient-ready DLE was AM20 or MGO contaminated. Of all DLEs, 15% was contaminated with digestive tract bacteria, indicating inadequacies of the reprocessing technique. Similar to our previous study contamination of duodenoscopes in all four duodenoscope types and three LE types. For both definitions, contamination was not detected in duodenoscope or LE dependent (P-values > 0.72), nor type (P-values > 0.14) or microbial surveillance dependent (P-values > 0.45).

Disclosure of Interest: All authors have declared no conflicts of interest.

P0888 TECHNICAL EVOLUTION OF A NEWLY-DEVELOPED DIGITAL CHOLANGIO/PANCREATOSCOPY (SPYGLASS DS) FOR PREOPERATIVE EVALUATION OF PANCREATOBILIARY NEOPLASM

Gastroenterology, Sendai City Medical Center, Sendai/Japan

Contact E-mail Address: keito@openhr.or.jp

Introduction: Although a newly digital cholangio/pancreatoscopy (SpyDS) has been reported to be useful for therapeutic purpose in patients with biliary disease, clinical application for diagnostic purpose of pancreateobiliary neoplasm remains unclarified.

Aims & Methods: To evaluate the usefulness and safety of cholangio/pancreatoscopy using a SpyDS for preoperative evaluation of pancreateobiliary neoplasm. Patients and methods: Between Oct/2015 and Feb/2017, consecutive 30 patients (19, cholangiocarcinoma; 7, IPMN) who underwent cholangio/pancreatoscopy guided biopsy were included in this study.

Conclusion: Diagnostic accuracy of malignancy and tumor extent evaluation by cholangio/pancreatoscopy-guided biopsy is similar to other methods.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Abstract: P0890. Table 1: Learning curves and competence in ERCP

<table>
<thead>
<tr>
<th>Study Endpoint</th>
<th>No. of AETs meeting inclusion criteria*</th>
<th>No. of evaluations</th>
<th>No. of AETs achieving competence (%)</th>
<th>No. of AETs achieving competence (%)</th>
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</thead>
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<tr>
<td><strong>Basic Technique</strong></td>
<td><strong>Primary Analysis</strong></td>
<td><strong>Sensitivity Analysis</strong></td>
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<tr>
<td>- Intubation</td>
<td>20</td>
<td>2239</td>
<td>20 (100)</td>
<td>19 (95)</td>
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<tr>
<td>- Achieving short position</td>
<td>20</td>
<td>2226</td>
<td>19 (95)</td>
<td>15 (75)</td>
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<tr>
<td>- Identifying the papilla</td>
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<td>2223</td>
<td>19 (95)</td>
<td>18 (90)</td>
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<td><strong>Technical Aspects</strong></td>
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<td></td>
<td></td>
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<tr>
<td>- Overall cannulation</td>
<td>19</td>
<td>2075</td>
<td>13 (68.4)</td>
<td>6 (31.5)</td>
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<tr>
<td>- Cannulation: native papilla</td>
<td>17</td>
<td>1041</td>
<td>3 (17.6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>- Stent removal</td>
<td>14</td>
<td>737</td>
<td>13 (92.8)</td>
<td>9 (64.2)</td>
</tr>
<tr>
<td>- Wire placement in biliary duct</td>
<td>18</td>
<td>1815</td>
<td>16 (88.8)</td>
<td>8 (44.4)</td>
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<td>- Sphincterotomy</td>
<td>15</td>
<td>731</td>
<td>10 (66.6)</td>
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<td>- Balloon sweep</td>
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<td>18 (94.7)</td>
<td>10 (52.6)</td>
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<td>- Stone clearance</td>
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<td>697</td>
<td>12 (85.7)</td>
<td>6 (42.8)</td>
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<td>- Stricture dilation</td>
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<td>432</td>
<td>9 (90)</td>
<td>3 (30)</td>
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<tr>
<td>- Stent insertion</td>
<td>17</td>
<td>1029</td>
<td>14 (82.3)</td>
<td>5 (17.6)</td>
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<tr>
<td><strong>Cognitive Aspects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- Demonstrated clear understanding of indication</td>
<td>20</td>
<td>2264</td>
<td>20 (100)</td>
<td>14 (70)</td>
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<tr>
<td>- Appropriate use of fluoroscopy</td>
<td>20</td>
<td>2169</td>
<td>18 (90)</td>
<td>7 (35)</td>
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<tr>
<td>- Proficient use of real time</td>
<td>20</td>
<td>2219</td>
<td>19 (95)</td>
<td>9 (45)</td>
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<tr>
<td>- Logical plan based on cholangiogram</td>
<td>20</td>
<td>2220</td>
<td>19 (95)</td>
<td>10 (50)</td>
</tr>
<tr>
<td>- Demonstrated understanding of use of indomethacin</td>
<td>19</td>
<td>1630</td>
<td>19 (100)</td>
<td>16 (84.2)</td>
</tr>
<tr>
<td><strong>Overall Technical Success</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Cognitive Success</td>
<td>20</td>
<td>2268</td>
<td>12 (60)</td>
<td>5 (25)</td>
</tr>
</tbody>
</table>

* Primary analysis: success defined as score of 1 or 2 (no assistance/minimal verbal cues). Acceptable failure rate - p0 = 0.1 and unacceptable failure rate - p1 = 0.3 **

Sensitivity analysis: success defined as score of 1 (stringent definition of success)

P0889 ACUTE Pancreatitis and Hyperamylasaemy Development after Endoscopic Retrograde Cholangiopancreatography – Challenges and Prevention

P. Petrov 1, B. Petrov 1, T. Vukova 2
1University hospital “Sofiamed”- Sofia, Sofia/Bulgaria
2Excitable Structures, Institute of Biophysics and Biomedical Engineering - Bulgarian Academy of Sciences, Sofia/Bulgaria

Contact E-mail Address: dr.p.petrov@gmail.com

Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is one of the most technically complex procedures performed by gastroenterologists. After a significant increase in the indications for implementing ERCP, gastroenterologists began to pay greater attention to complications identification and prevention. Despite the widespread improvement of endoscopic techniques and increased experience of endoscopists, the rate of complications has not declined significantly.

Aims & Methods: To analyze the frequency of probable causes of asymptomatic hyperamylasaemy and acute pancreatitis after ERCP and their prevention. Two groups of patients were covered: a retrospective (340) and prospective (154) group. Patients had evidence of bile ducts impaired passability of varying etiology. In a minority of patients ERCP was purely diagnostic results were observed. Patients who developed acute pancreatitis often have acute calculous cholecystitis. Due to the small number of patients with acute pancreatitis, however, these results should be carefully commented. Patients who developed acute pancreatitis were found to have a lower level of alkaline phosphatase and ESR and higher values of leukocytes on the 72nd hour. The univariate logistic regression analysis identified the following risk factors for developing hyperamylasaemy; cholelithiasis; sclerosing papilloditis of ERCP; normal values of serum total bilirubin and elevated CRP levels in receiving. In order to establish a predictive model a multiple logistic regression analysis was performed. The model includes: average total bilirubin at entry and cannulation of the pancreatic duct more than 3 times. The estimated true percentage for predicting lack of hyperamylasaemy with this predictive model is very good - 97%. Univariate logistic regression analysis identified the following risk factors for the development of acute pancreatitis: cannulation of the pancreatic duct and the presence of calculous cholecystitis when entering.

Conclusion: We detected a low incidence of asymptomatic hyperamylasaemy (9.5%) and acute pancreatitis (2.4%) in the group of patients which were subjected to ERCP. Clinical and laboratory parameters characterizing the patients who developed these complications, and risk factors for acute pancreatitis and asymptomatic hyperamylasaemy were determined. The effect of intramuscular Diclofenac administered before and after ERCP has no effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0890 Most Advanced Endoscopy Trainees Do Not Meet Competence for Native Papillae Cannulation in ERCP: Results from a Prospective Multicenter Study

S. Wani 1, M. Hall1, V. Simon1, S. Han1, D. Early2, R. Keswani 1
1University of Colorado Anschutz Medical Center, Aurora/United States of America
2Washington University in St. Louis, St. Louis/United States of America
3Northwestern University, Chicago/United States of America

Contact E-mail Address: sachin.wani@ucdenver.edu

Introduction: Advanced endoscopy trainees (AETs) achieve ERCP competency at variable rates and specific case volumes do not ensure competence. However, training and credentialing guidelines continue to utilize an absolute procedure volume to determine competence. There are limited data on whether current training composition and volumes ensure ERCP competence in the US.

Aims & Methods: (i) To define ERCP learning curves, utilizing a centralized database, with a focus on cannulation rates using a large national sample of AET programs (AETPs). (ii) To critically examine the composition of current ERCP training in AETPs. ASGE-recognized AETPs were invited to participate and AETs were graded on every ERCP after completion of 25 hands-on ERCP exams. Grading was performed using our previously developed and validated tool [The EUS and ERCP Skills Assessment Tool (TSEATS)] which assesses technical and cognitive competence in a continuous fashion. Grading for each skill was done using a 4-point scoring system: 1-no assistance, 2-minimal verbal cues, 3-multiple verbal cues or hands-on assistance and 4-unable to complete. A comprehensive data collection and reporting system was built using REDcap, a web-based data collection software, and SAS to create learning curves using cumulative sum (CUSUM) analysis for overall and individual technical and cognitive components of ERCP. Individual results and comparison to peers were sent to AETs and trainers quarterly. Acceptable and unacceptable failure rates were set a priori. AETs with < 20 evaluations were excluded and success was defined as a skill score of 1 or 2. Individual and combined graphs to assess change in cannulation success rates were constructed and the Cochran-Armitage trend test was used to assess improvement in success rates.

*Primary analysis: success defined as score of 1 or 2 (no assistance/minimal verbal cues), Acceptable failure rate - p0 = 0.1 and unacceptable failure rate - p1 = 0.3 **
ERCP techniques are required. An important benchmark for assessing competence. Methods to improve native curves using a novel web-based comprehensive data collection and reporting threshold numbers to determine competence. We report the feasibility of establishing curves and competence among AETs in ERCP validating the shift away from advanced cannulation techniques such as double-wire technique, placement of pancreatic duct stent and precut sphincterotomy (6%). Learning curves for individual endpoints, overall technical and cognitive aspects noted substantial variability. Majority of AETs achieved overall technical (60%) and cognitive (100%) competence at the end of training. While there was a statistically significant improvement in overall and native papilla cannulation rates (both p < 0.001), only 18% of AETs achieved competence for native papilla cannulation (Table 1).

Conclusion: The results of this study confirm the substantial variability in learning curves and competence among AETs in ERCP validating the shift away from threshold numbers to determine competence. We report the feasibility of establishing a centralized national database to report individualized ERCP learning curves using a novel web-based comprehensive data collection and reporting system. Using strict definitions, a minority of AETs achieved competency in native papilla cannulation which may, in part, be due to limited cannulation time provided to AETs. Selective native papilla deep cannulation needs to be an important benchmark for assessing competence. Methods to improve native papilla cannulation rates and strategies to increase AET exposure to advanced ERCP techniques are required.

Disclosure of Interest: S. Wani: Consultant for Boston Scientific, Medtronic All other authors have declared no conflicts of interest.

Reference


P0891 SIMILAR POST-ERC P PANCREATITIS RATES IN ENDOSCOPIST- VS ASSISTANT-CONTROLLED WIRE-GUIDEDBILE DUCT CANNULATION: A SINGLE CENTRE OBSERVATIONAL STUDY

M. Hu, A. Bhagwat, M. Hayat
Dept Of Gastroenterology, Northumbria Healthcare NHS Foundation Trust, North Shields United Kingdom

Contact E-mail Address: maxworth.hu@gmail.com

Introduction: A recent randomised study by Buxbaum et al1 demonstrated a significantly lower rate of post-endooscopic retrograde cholangiopancreatography (ERC P) pancreatitis (PERCPP) in endoscopist- versus assistant-controlled bile duct cannulation. We set out to audit the rates of PERCPP at our centre based on this finding.

Aims & Methods: All ERCPs performed by two endoscopists between April 2015 and March 2016 were audited retrospectively. The two endoscopists practiced endoscopist- (E1) and assistant-controlled (A1) wire-guided cannulation exclusively. Both E1 & A1 had access to the same medications, sphincterotomes, equipment, and teams. Data was obtained and anonymised from electronic patient records and endoscopy reporting software. PERCPP was defined as abdominal pain with hyperamylasaemia at least three times the upper limit of normal (ULN) 24–48 hours after ERCP with or without corresponding imaging findings within 7 days; or abdominal pain with a further rise in pre-existing hyperamylasaemia to at least three times ULN 24–48 hours after ERCP with or without corresponding imaging findings within 7 days. Additional data was collected for CT evidence of post-ERC P complications, hyperamylasaemia without pancreatitis, bleeding, and post-ERC P cholangitis. Patient and procedural characteristics predisposing to pancreatitis were also recorded.

Results: Of the 62 programs invited, 20 AETPs participated and 20 AETs were included in the final analysis. At the end of training, median number of ERCPs performed/AET was 350 (15–500). Overall, 2649 ERCP exams were graded; the rates of PERCPP in E1 and A1 were 2.3% (3 patients) and 1.7% (2 patients) respectively. One 84-year-old patient of E1 with a presumed malignant common bile duct (CBD) stricture had PERCPP and died 17 days after ERCP, having opted for palliation. The remaining 4 patients had uneventful conservative management of PERCPP. E1 had one patient with immediate bleeding post-sphincterotomy controlled with a CBD stent whilst A1 had 2 patients requiring adrenaline injection for haemostasis. In addition, E1 had one patient with retroduodenal perforation managed conservatively and A1 had one patient with CT evidence of intraduodenal haematoma which was uneventful. Both E1 and A1 had one case each of uncomplicated hyperamylasaemia. A summary of complications, with patient and procedural characteristics, is listed in Table 1.

Conclusion: In our observational study, which was not intended or powered for statistical analysis, there was no overt difference in the rates of PERCPP when comparing between endoscopist- or assistant-controlled wire-guided CBD cannulation. The overall complication rate was similar and although there were some differences in procedural characteristics between the two endoscopists, there were no characteristics predisposing to PERCPP overtly skewed towards either endoscopist’s case load. Further randomised trials, or a crossover study, provided the endoscopists and assistants are equally competent in both methods of wire cannulation, are needed to clarify the safety profile of either technique.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0892 CONFIRMATION OF THE EFFECT OF AN ANTAGONIST TO CONSCIOUS SEDATION ON THE PREVENTION OF ASPIRATION PNEUMONIA AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

Y. Taya1, M. Kuwata1, K. Sakurai1, R. Sasaki1, S. Tsunematsu1, M. Matsumoto1, U. Baba1, Y. Tsukamoto1, S. Muto1, T. Kimura1
1Gastroenterology & Hepatology, Hokkaido Medical Center, Sapporo/Japan
2Gastroenterology And Hepatology, Hokkaido University Hospital, Sapporo/Japan

Contact E-mail Address: abe.yoko_0922@yahoo.co.jp

Introduction: Most endoscopic retrograde cholangiopancreatography (ERC P) related procedures are performed under “conscious sedation”, a drug-induced depression of consciousness during which patients are comfortable and able to maintain purposeful responses to verbal or tactile stimulation, and cardiorespiratory function generally remains intact 1. Meanwhile, we sometimes observe adverse events related to conscious sedation after ERC P such as aspiration pneumonia 2. So far, it is unknown whether immediate recovery from conscious sedation with antagonists is necessary or not.

Aims & Methods: We aimed to reveal the efficacy of flumazenil, an antagonist to benzodiazepines, on the prevention of adverse events, especially, aspiration pneumonia related to conscious sedation which is most frequent after ERC P. One hundred ninety patients who underwent ERC P between January to December...
2014 in a general hospital in Japan were included. The patients were divided to two groups: the group with flumazenil (F group) and the group without flumazenil (non-F group) just after ERCP and they were compared and analyzed. Examination items were 1) patient characteristics, 2) procedure characteristics, and 3) occurrence rates of post-ERCP aspiration pneumonia. Pearson’s Chi-squared test and Fisher’s exact test were used for statistical analysis of categorical data.

Results: 1) One hundred fifteen patients (60.5%) were administered flumazenil just after ERCP (F group) and 75 patients (39.5%) were not (non-F group). The median age, 76 (47–94) in the F group and 78 (46–94) in the non-F group; male/female ratio, 57/58 in the F group and 34/41 in the non-F group. The distributions of the basic disease (CBD stone/malignant biliary disease/malignant pancreatic disease/others) were 64/8/17/26 in the F group and 30/11/16/18 in the non-F group. The distributions of used biliary brush (midazolam/diazepam/none) and the patient number who got aspiration pneumonia were 102/13/0 and 1 in the F group and 59/13/2 and 1 in the non-F group, respectively (Fisher’s test: p-value = 0.074). There were no significant differences of patient characteristics between both groups. 3) Two patients (1.05%) developed aspiration pneumonia after ERCP. One (94 years old, male) was in the F group and the other (81 years old, female) was in the non-F group (Pearson’s Chi-squared test p-value = 1). Both of them were over 80-year old. The patients who were given oxygen during ERCP were 86/5 (45.2%) in the F group and 35/4 (21.1%) in the non-F group (Pearson’s Chi-squared test p-value = 1).

Conclusion: Flumazenil did not have any preventive effect on the occurrence of aspiration pneumonia related to conscious sedation after ERCP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Contact E-mail Address: pedromarcoes2010@gmail.com

Introduction: Pancreatitis is the leading complication of endoscopic retrograde cholangiopancreatography (ERCP). Some studies have shown that aggressive hydration may reduce the incidence of this serious adverse event, the post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP). In our department we implemented an aggressive hydration protocol (AHP) for patients undergoing ERCP in order to prevent PEP.

Aims & Methods: The aim of this study was to evaluate the impact of this protocol on the incidence and severity of PEP. Patients and methods Retrospective analysis of all patients submitted to ERCP in one center during 16 months, including patients hospitalized in the gastroenterology department who were managed according to the AHP and patients hospitalized in other departments who underwent standard hydration (SH). Patients who underwent AHP received intravenous sodium lactate solution (RL) at 200 mL/hour starting 1 hour before, during the procedure and the anesthetic recovery; in those who remained asymptomatic after the ERCP, the RL was maintained at 100 mL/hour for 8 hours and after it was changed to a balanced salt solution with glucose (PG) at 80 mL/hour; in those patients who had abdominal pain or amylase >3 times normal limit after ERCP, the RL was maintained at 200 mL/hour during 8 hours and after it was changed to PG at 120 mL/h.

We evaluated the incidence and severity of PEP, the established primary and secondary risk factors for PEP (except the difficulty of cannulation) and the occurrence of complications. Data were analyzed with SPSS statistical software.

Results: We analyzed 192 patients, 290 ERCP (AHP n = 168, SH n = 122). The incidence of PEP was 10% (11/290), significantly higher in the SH group (4/11 versus 7/11; p = 0.766). In the SH subset, only 1 PEP was moderate and the remaining 3 were mild. In the AHP group, 3 PEP were moderate and 4 were mild. There were no complications related to AHP. We didn’t find any patient on procedure-related variable significantly associated with the development of PEP.

Conclusion: Our AHP didn’t reduce the incidence of PEP or its severity. Indeed, the AHP group presented more PEPs than the SH group, although the difference between both PEP incidences was not significant. Despite our study didn’t show any advantage related to the use of an AHP, intravenous aggressive hydration may have a role in PEP prophylaxis. Further studies are needed to establish its true value.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0895  PROSPECTIVE STUDY OF EARLY PRECUT VS. UTMOST PRECUT WITH PANCREATIC STENT IN INITIAL PANCREATIC DUCT CANNULATION

E.T. Park, B.C. Yun, S.U. Lee, B.H. Han

Internal Medicine, Kosin University, Gospel Hospital, Busan/Korea, Republic of

Contact E-mail Address: eunpark@hanmail.net

Introduction: In biliary access, repeated biliary cannulation attempts are a risk factor for post ERCP pancreatitis (PEP). Early precut is an effective technique for successful biliary cannulation and can significantly reduce the incidence of PEP. The aim of this study was prospectively to evaluate clinical efficacy the performance of utmost early precut with pancreatic stent in the patients in whom pancreatic duct cannulation was performed initially.

Aims & Methods: When guidewire was placed in the pancreatic duct initially by chance, the patients were randomized into early precut (Group A) or utmost early precut sphincterotomy with pancreatic stent (Group B). In Group A, pancreatic duct cannulation within 5 times and attempted precut papillotomy without papillotomy forceps. In Group B, the pancreatic stent was inserted and then precut with an incision over a pancreatic stent was done. Main outcome measurements were frequency of successful CBD cannulation and post-procedure related complications.

Results: From January 2015 to August 2016, the two groups were similar with regard to patient demographics. A total of 50 patients were enrolled. 26 patients were assigned to the Group A and 24 to the Group B. Successful CBD cannulation was achieved in 23 of 26 (88.5%) patients in the Group A and 23 of 24 (95.8%) patients in the Group B. The mean cannulation time was 16 minutes in the Group A and 14.8 minutes in the Group B. Post-procedure hyperamylasemia was significantly higher in Group A. The overall incidence of post-procedure pancreatitis was 11.5% (3/26) in the Group A and 4.2% (1/24) in the Group B (P < 0.001).

Conclusion: In patients with pancreatic duct cannulation initially by chance, compare to early precut group, utmost early precut with pancreatic stent over the guidewire significantly facilitated biliary cannulation and the success rate but also promise low incidence of post-ERCP pancreatitis. In experienced hands, utmost early precut technique can dramatically reduce the trauma of ampulla and risk of PEP compared to conventionally persistent cannulation attempts.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0896  POST-ERCP BLEEDING IN THE ERA OF MULTIPLE ANTIPLATELET AGENTS


1College Of Medicine, Chung-Ang University, Seoul/Korea, Republic of
2Gastroenterology And Hepatology, India University, Indianapolis/United States of America/IN
3Inje University, Busan/Korea, Republic of
4Anesthesiology, Chung-Ang University, Seoul/Korea, Republic of

Contact E-mail Address: ohcglj@cau.ac.kr

Introduction: Antiplatelet therapy with antiplatelet agents (APA) has been increasingly utilized during the last few decades. This study aimed to determine the risk of post-ERCP bleeding among those patients who are taking APAs, especially in the era of multiple agents.


Results: The overall incidence of post-ERCP bleeding was 16 of 2083 (0.8%) in No drug group, 12 of 256 (4.7%) in Aspirin group, 3 of 48 (6.3%) in Single APA group, and 4 of 48 (8.3%) in Multiple APA group (p < 0.001). All authors have declared no conflicts of interest.

References:

P0897  PROSPECTIVE COMPARISON OF DIGITAL SPYGLASS DIRECT VISUALIZATION SYSTEM VS DIRECT PERORAL CHOLANGIOSCOPY USING A MULTIBENDING ENDOSCOPE AS A SINGLE-OPERATOR CHOLANGIOSCOPY FOR MANAGING BILARY LESIONS

Y.N. Lee1, J.H. Moon1, H.J. Choi1, H.K. Kim2, T.H. Lee1, H.W. Lee1, M.H. Choi1, S. Cha1, Y.D. Choi1, S. Park2

1Digestive Disease Center And Research Institute, Department Of Internal Medicine, SoonChunHyang University School of Medicine, Bucheon and Seoul/Korea, Republic of
2Department Of Pathology, SoonChunHyang University School of Medicine, Bucheon/Korea, Republic of

Contact E-mail Address: ynnahah@schmc.ac.kr

Introduction: In a recent, a digital version of single-operator cholangioscope (Spy-Glass DS) and direct POC (DPOC) using a multibending ultraslim endoscope were introduced as improved forms of each POC, especially in image quality and technical difficulty, respectively.

Aims & Methods: In this study, we prospectively compared the procedure success rate of Spy-Glass DS and DPOC according to the type of lesion, whether not different in 9 obstructive type (100% vs. 88.9%, P = 0.5) and 6 non-obstructive type (66.7% vs. 100%, P = 0.227). The Therapeutic outcomes of Spy-Glass DS and DPOC were observed in 8 of 8 patients (100%) and 7 of 9 patients (77.8%) (P = 0.265), respectively.

Conclusion: Both advanced image quality of Spy-Glass DS and improved technical difficulty of DPOC by a multibending ultraslim endoscope showed comparable and high procedure success rates in patients with dilated BD. Future prospective studies focused on overall cost savings and long-term clinical outcomes are seen be required to be deciding adequate indications of each POC systems.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0899  THE DILEMMA OF MANAGEMENT BORDERLINE COMMON BILE DUCT STONE, DOES STONE SIZE MATTER?: A PROSPECTIVE RANDOMIZED STUDY

E. Abdellatif, E. Elhanfy, A. Elnakeeb

Surgery, Gastroenterology Surgical Center, Mansoura/Egypt

Contact E-mail Address: dr.ehab.atif@icloud.com

Introduction: Management of common bile duct stones (CBDs) in patients with borderline CBD presents a surgical challenge. The aim of this study was to compare conservative treatment with endoscopic stone extraction for the treatment of borderline CBD with stones.

Aims & Methods: This prospective randomized controlled trial includes patients with CBDs in borderline CBD (CBD < 10mm) associated with gallbladder stones who were treated with conservative treatment or endoscopic stone extraction followed by laparoscopic cholecystectomy (LC) and intraduodenal cholangiopancreatography (IOC). The primary outcome was successful CBD clearance, the secondary outcomes were the overall complications, cost, and hospital stay.

Results: LC and IOC revealed complete clearance of CBDs in 48 (96%) cases in the endoscopic retrograde cholangiopancreatography (ERCP) group (52% of patients by ERCP, and 44% of patient passed the stone spontaneously), and in the remaining two patients, the CBDs was removed by transcytic exploration. In the conservative group, LC and IOC revealed complete clearance of CBDs in 90% of cases, and in the remaining 10% of patients, the CBDs was removed by transcystic exploration. Post-ERCP pancreatitis (PEP) is noticed significantly in the ERCP group (2% vs. 8% [16%], P = 0.04). The average net cost was significantly higher in the ERCP group. Recurrent biliary symptoms developed significantly in the ERCP group after 1 year (10% versus 0%, P = 0.02) in the form of recurrent cholangitis and acute obstructive type CBDs.

Conclusion: Management of CBDs in patients with borderline CBD is recommended cautious as a surgical challenge. Borderline CBD increases the technical difficulty of ERCP and increases the risk of PEP. Conservative management of CBDs in borderline CBD not only avoids the risks inherent in ERCP and unnecessary preoperative ERCP, but it also effective in clearing CBDs. The hepatobiliary surgeon
P0900 PROSPECTIVE STUDY ON METHODS AND SUCCESS OF BILARY CANNULATION OF 458 VIRGIN PAPILLAS - QUALITY ASSURANCE OF ERCP AT OUR DEPARTMENT

A. Orbán-Szilágyi, K. Lorinczy, K. Rábai, M. Horváth, F. Szimond, T. Gýökéres
Gastroenterology, Medical Centre, Hungarian Defence Forces, Budapest/Hungary

Contact E-mail Address: tiborgyokeres@freemail.hu

Introduction: The cannulation of a virgin papilla is the most difficult and high-risk step in ERCP and it requires significant experience to maximize the success and to minimize poor outcomes. Cannulation rate is one of the accepted quality indicators of ERCP. It is mandatory to regularly assess quality indicators of endoscopic procedures to maintain and improve endoscopic service.

Aims & Methods: We prospectively collected data about cannulation details of all patients with virgin papilla and post-ERCP complications from April 2016 to April 2017.

Results: During this 12-month period we have performed 1102 ERCPs, in 458 of them we had virgin papilla. All ERCPs had therapeutic intentions and all of the patients were followed up. In 13 patients papilla were not accessible due to duodenal stenosis (10/13) or postoperative situations (3/10). In two of them the indication was ceased (because the biliary obstruction resolved spontaneously), 11 patients got percutaneous transhepatic drainage (PTD). The primary cannulation success rate of accessible papillae was 88.5% (394/445) while the overall cannulation success was 96.6% (430/445). 56.1% of primary successful cannulations were achieved by conventional method, in 14.2% we used pancreatic guidewire assisted technique, in 20.1% we used early precut sphincterotomy, and in the third of them we used combined techniques. In 51 primary unsuccessful cases we repeated ERCP attempt 4 days on average and successfully cannulated 70.5% (36/51) of them at the second or third attempts. 27 of them were achieved by conventional method, 7 of them after extending the precut, one case we used pancreatic guidewire technique, and we used prophylactic pancreatic stent in one patient, as well. Out of the 15 patients with finally unsuccessful cannulation, we performed precut without deep cannulation in 10 cases. 7 of them resolved after precut, 2 of the 10 patients got PTD and one patient required combined techniques. In 4 patients out of the 15 unsuccessful cannulations the obstruction resolved without any further intervention and one patient got PTD. We had in sum 3.4% (15/445) post-ERCP pancreatitis, 7 of them were mild, and 8 moderate, we had no severe one. We observed endoscopic signs of biliary obstruction in 34 cases that required endoscopic intervention (infiltration/coagulation/stenting), 7 of them (1%) required blood transfusion.

Three patients suffered perforation during ERCP. One of them got biliary stent and was discharged uneventfully on the 8th day. We had 2 sphincterotomy related perforations, 1 had early surgery – he died on the 14th day, another patient had delayed surgery, he recovered.

Conclusion: Quality assessment of ERCP performance is essential. Our overall cannulation rate was acceptable. We used pancreatic guidewire technique just after failure of percutaneous transhepatic drainage. We used prophylactic pancreatic stent just in the phase of process to avoid long lasting traumatisation of the papilla. Our complication rate of post-ERCP pancreatitis was good while the post-sphincterotomy complication rate of post-ERCP pancreatitis was 7.5%, however, all of them resolved after precut, 2 of the 10 patients got PTD and our patient had delayed surgery, he recovered.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0901 RISK FACTORS FOR POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY PANCREATITIS: A PROSPECTIVE MULTICENTER STUDY

1Department Of Gastroenterology, Kyoto Second Red Cross Hospital, Kyoto/Japan
2Department Of Gastroenterology, Kyoto Medical Center, Kyoto/Japan
3Department Of Gastroenterology, National Hospital Organization Kyoto Medical Center, Kyoto/Japan
4Department Of Gastroenterology, Japanese Red Cross Kyoto Daichi Hospital, Kyoto/Japan
5Division Of Gastroenterology, Shiga University of Medical Science, Shiga/Japan

Contact E-mail Address: azmaked@gmail.com

Introduction: The procedures related to endoscopic retrograde cholangiopancreatography (ERCP) play a major role in the diagnosis and treatment of pancreato-biliary disease. However, post-ERCP pancreatitis (PEP) remains the most common and severe complication of ERCP. The incidence rates of and risk factors for PEP have mainly been reported from retrospective studies.

Aims & Methods: This study aimed to identify the incidence rate of and risk factors for PEP in a prospective large cohort study. This is a prospective cohort study of all patients who underwent ERCP-related procedures at 5 high-volume centers between February 2015 and May 2016. Patients who presented with acute pancreatitis, post biliary reconstruction, and failure to reach the papilla were excluded. The incidence rates of PEP and its severity were examined. Multivariate analysis was used to identify the risk factors for the different patients who presented with at least two of the following conditions were diagnosed with PEP: 1) elevated levels of serum amylase, 2) abdominal pain lasting more than 24 hours, and 3) abnormal findings of acute pancreatitis on computed tomography. An increase in serum amylase level of at least three times greater than the normal upper limit at approximately 18 h after the procedure (the next morning) was regarded as significant. The severity of PEP was graded according to the severity assessment of the Japanese Ministry of Health, Labour, and Welfare.

Results: A total of 192 patients were finally analyzed. PEP occurred in 142 patients (73.6%); it was mild in 117 patients (6.0%) and severe in 25 patients (13.3%). Univariate analysis showed that female gender, naive papilla, surgically altered gastrointestinal anatomy, no coexistence of acute cholangitis, diagnostic cholangiography, dilatative ERCP, procedure time after reaching the papilla, number of cannulation attempts, precut sphincterotomy, intraductal ultrasonography, pancreatic duct injection, insertion of guidewire into the pancreatic duct, and placement of prophylactic pancreatic stent were significant risk factors. In the multivariate analysis, female gender (OR 2.273; 95% CI 1.507–3.392), naive papilla (OR 3.024; 95% CI 1.805–5.066), surgically altered gastrointestinal anatomy (OR 2.607; 95% CI 1.378–4.931), procedure time after reaching the papilla (OR 1.099; 95% CI 1.901–1.107), pancreatic duct injection (OR 2.297; 95% CI 1.493–3.534), and intraductal ultrasonography (OR 1.620; 95% CI 1.015–2.585) were independent risk factors.

Conclusion: The incidence of PEP was similar to those reported in previous studies. These risk factors are important as predictors of PEP. A shorter procedure time and avoidance of unnecessary pancreatic duct injection are important for prevention of PEP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0902 USEFULNESS OF AMY MEASUREMENTS AT 2 HOURS AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PREDICTING THE SEVERITY OF POST-ERCP PANCREATITIS: A MULTICENTER PROSPECTIVE STUDY, SOSUI

1Gastroenterology, Japanese Red Cross Kyoto Daichi Hospital, Kyoto/Japan
2Digestive Disease Center, Department Of Gastroenterology And Hepatology, Kyoto Katsura Hospital, Kyoto/Japan
3Department Of Gastroenterology, Kyoto Medical Center, Kyoto/Japan
4Division Of Gastroenterology, Shiga University of Medical Science, Shiga/Japan
5Department Of Gastroenterology, Medical Centre, Hungarian Defence Forces, Budapest/Hungary

Contact E-mail Address: mbymq671@yahoo.co.jp

Introduction: The severity of post-ERCP pancreatitis (PEP) is a major problem because of occasional lethality. However, no predictor of the severity has been identified. In the present multicenter prospective study, SOSUI, we investigated the potential predictors of severity.

Aims & Methods: Of 2078 subjects who underwent ERCP between February 2015 and May 2016 at five high-volume centers in Japan, 1932, excluding those who had been complicated by pancreatitis, undergone biliary tract reconstruction, or had papilla not reached, were included. Of the 1932 patients, 163 developed PEP which were compared between the mild and severe cases to examine potential predictors of severity. PEP was diagnosed based on two or more of the following three conditions: (1) serum amylase elevation (above the upper limits of each center) on the following day, (2) abdominal pain lasting for longer than 24 hours, and (3) abnormal findings on CT. We used the criteria set by the Ministry of Health, Labour and Welfare. For continuous variables, the Mann-Whitney U test was employed. For binomial comparison, univariate analysis was conducted using a chi-square test. Receiver-operating curve analysis was performed.

Results: Twenty-five severe (1.3%) and 138 mild (7.1%) PEP patients were included. Patient and procedural factors were examined, demonstrating that the AMY values at 2 hours after ERCP were significantly higher in the severe cases than in the mild ones (P = 0.005). ROC analysis was conducted on the AMY values at 2 hours as a predictor of severe PEP, demonstrating that the cutoff value was 3.7 times higher than the upper limits of each center (sensitivity: 64%; specificity: 70%; and AUC: 0.65). In multivariate analysis using logistic regression by dividing the AMY values at 2 hours after ERCP into higher or lower than 3.7 times the reference values of each center, abdominal pain immediately after ERCP and AMY values at 2 hours after ERCP were identified as independent factors.

Conclusion: Severe PEP should be diagnosed as early as possible for intervention. However, it may take a long time to assess clinical courses or examine images after examination. In the present study, abdominal pain immediately after ERCP and AMY values at 2 hours were identified as predictors of severity, being useful for facilitating early therapeutic intervention.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: The aim of this study was to evaluate the transduodenal deployment was successfully performed in all of 26 patients (Male/Female, 11/15; mean age, 61 ± 16.19yrs). After the procedure, fistulas had formed in each of the patients and the stones of 7 patients expelled themselves completely. Endoscopic ultrasound (19) and polypectomy (2) were partially performed through the stents, and then the stents were removed. Common bile duct stones were also successfully removed in 6 patients. EGD showed all the fistula closed completely after 3 days. The ultrasound examination of the gallbladder 4 weeks later showed no stones remaining and also showed satisfactory functioning of the gallbladder. The mean follow-up period was 11 months (range: 1–27months). Cholesterol gallstones recurrence were not detected in any patient during follow-up.

Conclusion: The EUS-guided placement of a novel metal stent with hot stent delivery is a safe and simple approach for performing an endoscopic cholecysto-duodenostomy, which can subsequently allow procedures to be performed for treating biliary disease, including cholecystolithotomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0904 QUANTITATIVE ENDOSCOPIC ULTRASOUND ELASTOGRAPHY IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC SOLID TUMORS
H. Ribeiro1, C. Leitão1, J. Pinto2, R. Azevedo1, F. Pereira1, R. Sousa1, A.I.L. Pires Caldeira1, E. Pereira1, A. Banhudo1
1Gastroenterology, Amato Lusitano Hospital, Castelo Branco/Portugal
2Gastroenterologia, Uniidade Local de Saúde de Castelo Branco, Castelo Branco/Portugal
Contact E-mail Address: helena.brito@beiror@gmail.com
Introduction: Second generation quantitative elastographic ultrasound (EUS) elastography allows the quantitative analysis of tissue stiffness and can be a useful auxiliary tool in the differential diagnosis of pancreatic solid tumors (1)(2).

Aims & Methods: The aim of this study was to evaluate the accuracy of the quantitative EUS elastography in the differential diagnosis of pancreatic solid masses, discriminating malignant from benign masses, using strain ratio (SR) analysis. A prospective study was performed for 15 months and included 29 consecutive patients who underwent EUS for the evaluation of solid pancreatic masses. EUS elastography was performed by 2 operators, using a linear echoendoscope. The mean of 3 measures was considered as the SR final result for each lesion. EUS-fine-needle aspiration of the lesions was performed after SR assessment and the final diagnosis was based on the cytology or histology results.

Results: Included 29 patients in a total of 30 lesions with conclusive histological/cytologic diagnosis (8 inflammatory masses, 19 adenocarcinomas, 2 neuroendocrine tumors and 1 undifferentiated carcinoma). The mean SR value was significantly higher in the malignant tumors comparing with the benign tumors (55.56 vs 23.93, p < 0.001). The sensitivity and specificity of SR for discrimination of pancreatic malignancy for a cut of 15.89 were, respectively, 95.45% and 87.5% (area under the curve of 0.89, 95% CI). The overall accuracy of the EUS elastography using the SR for the detection of pancreatic malignancy was 93%.

Conclusion: Quantitative EUS elastography presents good accuracy in the differentiation between malignant and benign pancreatic masses. It is a promising EUS technique in the diagnostic approach of solid pancreatic lesions, which may complement the study and characterization of the tumors, aiding in the diagnostic and follow-up of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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A479

P0996 COMPARISON OF DIAGNOSTIC PERFORMANCES FOR THE EVALUATION OF SUSPECTED MALIGNANT BILIARY STRicture AMONG SAME SESSION EUS-AND ERCP-GUIDED TISSUE SAMPLING

S.J. Yeo1, C.M. Cho2, M.K. Jung3, A.N. Seo3, H.I. Bae1
1Division Of Gastroenterology And Hepatology, Dept. Of Internal Medicine, Kyungpook National University Medical Center, Daegu/Korea, Republic of Korea
2Department Of Pathology, Kyungpook National University School of Medicine, Daegu/Korea, Republic of Korea

Contact E-mail Address: sejk319@hanmail.net

Introduction: Determining the cause of suspected biliary strictures is always challenging in clinical practice. Although EUS-guided tissue sampling (EUS-TS) revealed a better diagnostic yield in suspected malignant biliary obstructive lesions comparing to ERCP-guided tissue sampling (ERC-P), there was few studies for which techniques are better dependent on primary tumor.

Aims & Methods: We compared the diagnostic yields between EUS-TS and ERC-P in patients with suspected malignant biliary obstructive lesion according to primary tumor sites. By reviewing medical records, we enrolled patients who underwent same-session examination of EUS and ERCP for the evaluation of suspected malignant obstructive lesion.

For cytopathologic diagnosis, endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) or biopsy (EUS-FNB) and ERC-P were used with brush cytology and/or forceps biopsy were performed. The diagnostic performances were compared between two techniques according to primary tumor sites.

Results: From January 2011 to September 2016, we enrolled 125 patients and 32 patients were excluded due to the following reasons: loss of follow up in 8, EUS/TIPS fistulous tract in 23, and ERC-P from peripancreatic biopsy in 4. Among the enrolled patients (93 patients; 62 males, mean age 65.8 years, 86 (92.5%) had malignant tumor such as cholangiocarcinoma in 39, pancreatic cancer in 37, and other malignant tumors in 10 patients. And 7 (7.5%) patients had benign lesions. EUS-TS revealed higher rate of overall diagnostic accuracy comparing to ERC-P (82.8% vs. 60.2%, p = 0.001).

Depending on primary lesions, the diagnostic accuracy for pancreatic lesions was statistically higher in EUS-TS than ERC-P (84.4% vs. 51.1%, p = 0.003). Compared with EUS-TS, ERC-P is superior to ERC-P for the evaluation of suspected malignant pancreaticobiliary obstructive lesions. Especially, if the biliary obstruction was caused by pancreatic lesions, EUS-TS would need to be a priority for cytodiagnostic pathologic.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0997 PREVALENCE OF POSTERIOR MEDIASTINAL LYMPHADEnOPATHIES IN PATIENTS UNDERGOING ENdoscopic ULTRASONOGRAPHY-FNA FOR GASTROINTESTINAL-MALIGNANT LESIONS: INDICATIONS: A PORTUGUESE SINGLE-CENTRE PROSPECTIVE STUDY

J. Veloso Du, Carmo, S. C. Marques, M. Bispo, C. Chagas
Gastroenterology, Hospital Egas Moniz - Centro Hospitalar de Lisboa Ocidental, Lisboa/Portugal

Contact E-mail Address: jouanavcarmo@gmail.com

Introduction: Significant heterogeneity in geographic distribution in the prevalence of mediastinal lymphadenopathies have been documented in CT studies. Awareness of the geographic prevalence and characteristics of lymphadenopathies will be relevant when performing endoscopic ultrasonography (EUS-FNA) for malignant lesions. A prospective, unicentric study was performed between July and December 2016. Mediastinal stations 9, 8, 7, 6, 5, 4L and 2 were systematically evaluated using a linear endochozoscope in all patients undergoing EUS due to malign lesions and without history of oncologic disease. EUS features were analysed, including location, number, shape, dimensions and echogenicity of the lymphadenopathies.

Results: We analysed 75 patients: M/F, 32/43; Mean age, 63 years. The majority (72%) of the patients presented lymphadenopathies in at least one mediastinal station and 88% were found in stations 7 or 4L. Only 6% of these had short axial diameter >10 mm, most were oval (59%) or triangular (37%) and 40% had a hyperechogenic center. The prevalence of lymphadenopathies was higher in smoker patients (83% vs 64%, p=0.024), with a higher average number of lymphadenopathies per patient in this group (2.1 vs 1.6; p=0.017). Similar findings were documented in patients with relevant occupacional or environmental respiratory exposure (prevalence 83% vs 71%; average number 3 vs 1.7). By logistic regression analysis, none of the variables analyzed were independently associated with the presence of mediastinal lymphadenopathies.

Conclusion: This prospective Portuguese study documented a higher prevalence of mediastinal lymphadenopathies than previously reported in northern Europe, in patients with no evidence of oncologic disease. This higher prevalence, mostly in smokers or patients with relevant occupational exposure, may negatively influence the specificity and positive predictive value for malignancy of mediastinal lymph node (N) staging by EUS, with particular relevance in esophageal and pulmonary cancer staging.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0998 ACCURACY OF ENDOSCOPIC ULTRASOUND IN GASTRIC ADENOCARCINOMA PATIENT SELECTION FOR NEOADJUVANT THERAPY

J. M. Costa1, J. B. Soares1, B. Gonçalves2, S. Carvalho7, R. Gonçalves1
1Gastroenterology, Hospital de Braga, Braga/Portugal
2Pathology, Hospital de Braga, Braga/Portugal

Contact E-mail Address: julianamecosta87@gmail.com

Introduction: Recent studies demonstrated the positive impact of neoadjuvant treatment for gastric adenocarcinoma T ≥2 and/or N+. Aims & Methods: We aimed to assess the accuracy of endoscopic ultrasound in the selection of patient with gastric adenocarcinoma for neoadjuvant therapy. A unicentric retrospective analysis of patients with the anatomoopathological diagnosis of gastric adenocarcinoma between 2011 and 2016, who performed endoscopic ultrasound for staging and underwent surgery without prior neoadjuvant treatment. The concordance (kappa) and accuracy [sensitivity (S) and specificity (E)]) of the endoscopic ultrasound for T ≥2 and/or N + (criteria for neoadjuvant treatment) were assessed using the anatomoopathological staging of the resected specimen as the Gold standard.

Results: The final sample included 144 patients (64.6% male) with a median age of 68.5 ± 12.2 years. In most cases (80.6%), the neoplasia was distal (antrum, incisura angularis and body). The neoplasia was of the intestinal type, diffuse and mixed in 65.3%, 18.8% and 16% of the cases, respectively. After examination of the resected surgical specimen, 53.5% of patients had criteria for neoadjuvant treatment (T ≥2 and/or N +), and 46.5% did not (T ≤1 and/or N −). The overall kappa, sensitivity and specificity of the endoscopic ultrasound for T ≥2 and/or N + were 0.720 (p < 0.001), 85.2% (95% CI: 75.6%-92.1%) and 87.3% (95% CI: 76.5%-94.4%), respectively. The overall kappa, sensitivity and specificity of the endoscopic ultrasound for T ≥2 and/or N + were higher in proximal lesions (cardia and JEG) (k = 0.924, S-94.4% and E-100%) compared with distal lesions (k = 0.671, S-82.5% and E-84.9%) and in intestinal type lesions (k = 0.765, S-84.9% and E-92.7%) compared with diffuse type lesions (k = 0.682, S-88.4% and E-80%) or mixed (k = 0.566, S-81.8% and E-75%).

Conclusion: In one of the largest series of patients, we showed that endoscopic ultrasound had an overall high agreement and accuracy in the selection of gastric adenocarcinoma patients for neoadjuvant therapy, although they higher for proximal and intestinal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0999 IS IT USEFUL TO REPEAT ENDOSCOPIC ULTRASOUND WITH FINE NEEDLE ASPIRATION OF PanCREATIC CYSTIC LESions? A RETROSPECTIVE STUDY

S. Fais1, J. Pereira Silva1, I. Marques2, R. Fonseca3, A. Dias Pereira2
1Gastroenterology, Instituto Português de Oncologia Francisco Gentil, Lisboa/Portugal
2Pathology, IPO Lisboa, Lisboa/Portugal
3Gastroenterology, IPO Lisboa, Lisboa/Portugal

Contact E-mail Address: sandrafafais@hotmail.com

Introduction: Endoscopic ultrasonography (EUS) and percutaneous cyst drainage (PCDs) require initial imaging characterization and frequently follow-up. Endoscopic ultrasound with fine-needle aspiration (EUS-FNA) for CEA measurement and cystic fluid is the most accurate diagnostic method in these lesions. The role of repeated EUS-FNA with cystic fluid analysis in follow-up of PCNs is not clear.

Aims & Methods: To determine if patients with pancreatic cysts with a second repeated EUS-FNA for cystic fluid analysis for CEA and cytology had a change in cyst classification or on clinical decision. Retrospective analysis of a EUS cohort study of 200 patients with cystic pancreatic lesions (PCNs) from 2007–16, of which 35 had 2 EUS procedures, and of these, 22 had 2 consecutive EUS-FNA procedures.

References

Results: In our series 16/22 females (73%), mean age = 58 ± 13 years old (29-77). Mean follow-up, 56.0 ± 34.0 months (6-116). Cyst location: head/body/tail:11/ 8/3. Mean size in 1st EUS-FNA: 3 ± 1, 5 cm (1, 2-7 cm) vs 2nd EUS-FNA: 3, 1 ± 1, 9 cm (1, 2-10 cm); with both EUS-FNs with 36% cysts > 3 cm. Mass/mural nodule present:7/22 vs 4/22 on 2nd EUS-FNA. Repetition of EUS-FNA did not cause any change or increase in the cyst size. Mean interval between the two subsequent EUS-FNAS: 35 months (3-117). Cysts with CEA level > 192 g/ mL (7 vs 10 patients) and acellular cystic fluid samples (62% vs 59%), between two subsequent EUS-FNA, not statistical significant. There were 4 patients operated that had previously a repeated EUS-FNA (2nd EUS-FNA 3, 4, 7 and 10 months after the 1st EUS-FNA). Surgical pathology (respectively): Intraductal papillar mucinous neoplasm, mucinous cystic neoplasm, solid pseudopapillary neoplasm and a neuroendocrine tumour. Comparing the group of patients who had surgery with patients with one cyst alone, in one cyst case, there was a statistical difference in cyst size >3 cm and the presence of a mural nodule or mass in the surgery group, but no significant differences in age, CEA value or a diagnostic cytology between the two groups. The mean time between the two EUS-FNA was 35 months (117) and was significantly shorter in the surgical pathology group.

Conclusion: Clinical follow-up of pancreatic cysts with successive EUS-FNAS can be useful in larger cysts and if worrisome features (mural nodule or mass) are present, and should be performed early on follow-up. If these features are absent, most cysts have an identical CEA (increase to > 192 mg/mL in only 14% of patients, without statistical significance) and the EUS-FNA doesn’t change clinical decision making.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0901 DETERMINATION OF INTRACYSTIC GLUCOSE CONCENTRATIONS IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC CYSTS: A PROSPECTIVE STUDY
A. Cantamessa, M. Bruno, S. Gaia, G. Saracco, C. De Angelis
Gastroenterological Unit, Città della Salute e della Scienza di Torino - Universita’ degli Studi di Torino, Torino/Italy

Contact E-mail Address: eusdeng@hotmail.com

Introduction: Despite advances in imaging techniques, differential diagnosis of pancreatic cysts still remains challenging. There has been an increasing interest in new pancreatic cyst biomarkers as a way to differentiate different cyst subtypes and avoid unnecessary surgery. Recently intracystic fluid glucose has been proposed as a promising marker. The aim of this prospective study was to verify this early finding.

Aims & Methods: We enrolled in the study all the patients who underwent Endoscopic Ultrasound (EUS) guided Fine Needle Aspiration of a pancreatic cyst at our Institution from October 2015 to February 2017. The cyst fluid was sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carinoembryonic Antigen (CEA) and glucose. When defined necessary by the endoscopist, needle-based confocal laser endomicroscopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS and nCLE features) by three expert endosonographers, blinded to cyst markers concentrations.

Results: Twenty-nine patients (13 males, median age 72 years, range: 30-83) entered the study. Nineteen (66%) pancreatic cysts were unilocular, while five (17%) cysts had a mediolateral diameter of 45 mm (range: 20- 70 mm). Sixteen (55%) cysts were located in the pancreatic head, 10 (35%) in the body and 3 (10%) in the tail. CE-EUS was performed in 14 (48.3%) patients, nCLE in 9 (29.3%) and contrast-enhanced EUS in 3 (9.7%). Eighteen (61%) cysts were classified as mucinous (6 mucinous cystadenomas; 12 intraductal papillary mucinous neo- plasm) and 11 (37%) as non-mucinous (6 serous cystadenomas; 5 pseudocysts). The final diagnosis was reached relying on surgery in 9 patients (31%), on cyst fluid analysis in 14 (7 elements in 8 (27%) and on consensus in 8 (27%). Mean glucose concentrations in mucinous cyst were significantly lower than in non-mucinous cysts (7.7 mg/dl vs 95.7 mg/dl, p < 0.0001). In the diagnostic of mucin cysts, sensitivity of CA 19-9 (cutoff more than 5000 U/ml) and CEA (cutoff more than 192 mg/ml) glucose (cutoff less than 50 mg/dl) was respectively 22.2%, 66.7% and 94.4%. Specificity was respectively 72.7%, 100% and 100%. Accuracy was respectively 41.4%, 79.3% and 96.6%. Only two subjects in this cohort were affected by diabetes, this condition did not impact on intracystic glucose concentrations.

Conclusion: Although limited by the small sample size, this study confirms the utility of intracystic glucose levels in differentiating mucinous from non-mucinous pancreatic cysts. This cheap, new marker outperformed CA 19-9 and CEA in sensitivity, specificity and accuracy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0902 UTILIZATION OF LIQUID BASED CYTOTOLOGY IN EUS-FNA SAMPLES FOR THE PANCREATIC LESIONS
Y. Ishida1, Y. Okabe1, T. Taira2, T. Sakae1, M. Fukahori1, M. Yasumoto1, T. Ushijima1, Y. Naito3, O. Tsuruta1, T. Torimura3
1Division Of Gastroenterology, Department Of Medicine, Karume University School of Medicine, Karume/Japan
2Department Of Gastroenterology, Karume University Hospital, Karume/Japa
3Department Of Pathology, Karume University School of Medicine, Karume/Japan

Contact E-mail Address: ishida_yusuke@karume-u.ac.jp

Introduction: Liquid-based cytology (LBC) preparation method is one of the most used techniques, which is often used in gynecological and non-gynecological cytology samples, due to its ability to decrease screening time, insufficient sample rate, and air-drying artifacts compared to a conventional smear method. Additionally, immunocytochemistry studies can be performed all on the same preparation.

Aims & Methods: The aim of this study is to show the actual method of LBC and to evaluate the utility of LBC in EUS-FNA samples of the pancreatic lesions. 292 specimens obtained by EUS-FNA from patients with pancreatic disease were included in this study. Clinical diagnosis was pancreatic cancer in 210 cases, acinar cell carcinoma in three cases, adenocarcinoma of the exocrine pancreas in two cases, and one patient was not diagnosed. 75% of the patients was receiving antibiotic prophylaxis before the EUS-FNA procedure, with low complications (0–2%, 5%). Nevertheless, peri-procedural and even several days after EUS-FNA antibiotic prophylaxis has been the standard practice due to the possible risk of pancreatic infection.

Results: Two hundred and four EUS-FNA were analyzed: 51.5% (n = 105) in group 2.60% (n = 60) reported any type of adverse reaction related to antibiotic use (75% in group 2). Complete collapse after aspiration. Five patients had intra-cystic limited bleeding after puncture (two in group 1 and three in group 2). In group 1, 6.2% (n = 6) reported complications: 1 major (mild acute pancreatitis) and 5 minor (epigastric pain, vomiting). In group 2, 9.1% (n = 9) reported 1 major (mild acute pancreatitis), 1 minor (epigastric pain, nausea) complications. There was no statistical difference between the two groups regarding the morbidity of the PCLs.

Conclusion: EUS-FNA is a safe procedure, with 1% rate for major complications in our series and none of them with evidence of infection. We did not find any additional benefit from extension of antibiotic prophylaxis beyond the one-time administration during EUS-FNA. It has been even questioned whether antibiotic

Disclosure: No relevant conflicts of interest were declared.

P0903 ANTIBIOTIC PROPHYLAXIS AFTER PANCREATIC CYST PUNCTURE – IS LESS MORE? ONE-TIME VERSUS EXTENDED CIPROFLOXACIN PROTOCOL
I. Mocanu1, R. Barosa1, M. Patita2, G. Nunes2, P. Pinto Marques3
1Gastroenterology, Hospital Garcia de Orta, Almada/Portugal
2Gastroenterology, Hospital de Algebra, Portimao/Algarve
3Gastroenterology, Hospital da Luz, Lisbon/Portugal

Contact E-mail Address: irina.mocanu.24@gmail.com

Introduction: Echoendoscopy with fine needle aspiration (EUS-FNA) is a useful tool for the characterization of pancreatic cystic lesions (PCL) due to its ability to perform both endoscopic ultrasound-guided cyst fluid sampling and fine needle aspiration procedure, with low complications (0–2%). Nevertheless, peri-procedural and even several days after EUS-FNA antibiotic prophylaxis has been the standard practice due to the possible risk of pancreatic infection.

Aims & Methods: We aimed to compare the safety of a one-time after EUS FNA of PCL with two protocols: group 1: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA, and group 2: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA plus three days of oral Ciprofloxacin. 500 mg, bid. Retrospective single center study of single-operator EUS-FNA of CLP in two centers with different antibiotic prophylaxis protocols, between January 2014 and December 2016. A telephonc questionnaire regarding post-procedural complications was applied to all patients that agreed to enter the study.

Results: Two hundred and four EUS-FNA were analyzed: 51.5% (n = 105) in group 2.60% (n = 60) reported any type of adverse reaction related to antibiotic use (75% in group 2). Complete collapse after aspiration. Five patients had intra-cystic limited bleeding after puncture (two in group 1 and three in group 2). In group 1, 6.2% (n = 6) reported complications: 1 major (mild acute pancreatitis) and 5 minor (epigastric pain, vomiting). In group 2, 9.1% (n = 9) reported 1 major (mild acute pancreatitis), 1 minor (epigastric pain, nausea) complications. There was no statistical difference between the two protocols groups regarding the morbidity of the PCLs (size, morphology, location) or procedure (needle size, location of puncture, number of passages or percentage of cysts with complete collapse after aspiration). Five patients with intra-cystic bleeding did not have a worse outcome. Additionally, five patients (1.9%) reported any type of adverse reaction related to antibiotic use (75% in group 2).

Conclusion: EUS-FNA is a safe procedure, with 1% rate for major complications in our series and none of them with evidence of infection. We did not find any additional benefit from extension of antibiotic prophylaxis beyond the one-time administration during EUS-FNA. It has been even questioned whether antibiotic

Disclosure: No relevant conflicts of interest were declared.
prophylaxis is mandatory during EUS-FNA of PCLs, since it does not seem to have a protective effect. Moreover, the rise in antibiotic resistance and possible adverse effects related to their use should be balanced against the very low infectious complication rate of EUS-FNA. One limitation of our study is its retrospective nature, with a significant delay between the EUS-FNA and the time to inquiry, which could have biased the patients answers.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0914 EUS-GUIDED FNA IN THE STUDY OF THE ADRENAL GLAND: NATIONAL RETROSPECTIVE MULTICENTER STUDY
A. Martín-Cardona1, G. Fernández-Esparrach2, J.C. Sibilt Inigo3, J. Igelias García4, M. Garcia-Gui4, A. Barturen Barroso5, A.Z. Gimeno García6, B. Gornals1
Compostela/Spain

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: The endoscopic ultrasound (EUS) has proven useful in the study of the adrenal gland by endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) with adrenal gland.

Results: Of the 18 investigated cases (66.6%) and was equal (±5 mm) in 6 cases (33.3%).

Conclusion: In our experience, EUS-guided tissue core biopsy have an extremely high diagnostic accuracy for GIST diagnosis, but underestimates the proliferation indexes and rarely allows for a reliable mitotic count. The main reason for these results is the uneven distribution of the mitotic figures throughout the lesion, which may cause the biopsy to miss the most mitotically active areas. Furthermore, EUS examination generally underestimates the size of the lesions; this limit is fundamentally linked to the “bidimensional” evaluation of lesions obtained by ultrasound. In addition, the underestimation of the size is greater for large lesions because of the low depth of field evaluated by high frequencies used in EUS. Our data obtained with EUS-FNB are similar to previous studies with FNA and constitute a major limitation for developing a possible pre-treatment and biopsy-based risk classification of GIST. Alternative parameters (genotype profiling) must be validated on pre-surgical biopsy samples from GISTs for prognostication purposes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: martincardona@gmail.com

Introduction: The endoscopic ultrasound (EUS) has proven useful in the study and evaluation of the adrenal gland (AG) and metastases; however, the raise in antibiotic resistance and possible adverse effects related to their use should be balanced against the very low infectious complication rate of EUS-FNA. One limitation of our study is its retrospective nature, with a significant delay between the EUS-FNA and the time to inquiry, which could have biased the patients answers.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: robertograzia@yahoo.it

Introduction: The current classifications of non-metastatic GIST are based on post-operative pathologic criteria and are useful for estimating the potential risk of postoperative recurrence and determining the value of adjuvant Imatinib. The proposed pre-treatment classification currently recognized risk factors as tumor diameter, mitotic rate and site (gastric vs non-gastric). EUS-guided tissue samples remains the standard for pathological diagnosis of GIST, but previous studies showed that EUS-FNA with standard 19 or 22 gauge needles does not reliably reflect GIST’s proliferation and size.

Aims & Methods: We aimed to investigate the EUS-FNB diagnostic yield for GIST and to evaluate whether EUS-FNB samples reflect prognostic criteria obtained from resected GISTs.

Results: Between November 2012 and December 2016 18 patients were studied (11 males; mean age 71.6 years, range 44–88 yo). The tumour site was the stomach in 15 out of 18 patients and the duodenum in 3 out of 18 patients. Agreement between EUS-FNB and surgical pathology was 100% with respect to the diagnosis of GIST (18/18). Proliferative indexes (Ki67/MIB1) were determined in 14/18 (77.7%) patients in 15 out of all cases (as expected) in resected specimens. In our series Ki67/MIB1 were determined in 14/18 (77.7%) patients in 15 out of all cases (as expected) in resected specimens. We found only 2 patients with the required number of 50 HPFs for mitotic count examination. They showed a mitotic index < 5/50 HPFs comparable to surgical specimens. No mitotic figures were seen in core biopsy specimen from any of the remaining 16 patients. In these patients the number of HPFs for mitotic count examination ranged from 1 to 22. In their corresponding surgical specimen we found mitoses in 16/16 patients, ranging from 1 to 5 per 50 consecutive HPFs. The size of the surgical specimen ranged from 5 mm to > 50 mm. The size of the tumor EUS size in 11 of the 18 investigated cases (66.6%) and was equal (±5 mm) in 6 cases (33.3%).

Conclusion: In our experience, EUS-guided tissue core biopsy have an extremely high diagnostic accuracy for GIST diagnosis, but underestimates the proliferation indexes and rarely allows for a reliable mitotic count. The main reason for these results is the uneven distribution of the mitotic figures throughout the lesion, which may cause the biopsy to miss the most mitotically active areas. Furthermore, EUS examination generally underestimates the size of the lesions; this limit is fundamentally linked to the “bidimensional” evaluation of lesions obtained by ultrasound. In addition, the underestimation of the size is greater for large lesions because of the low depth of field evaluated by high frequencies used in EUS. Our data obtained with EUS-FNB are similar to previous studies with FNA and constitute a major limitation for developing a possible pre-treatment and biopsy-based risk classification of GIST. Alternative parameters (genotype profiling) must be validated on pre-surgical biopsy samples from GISTs for prognostication purposes.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: shinh.s@jhmi.edu

Introduction: Pancreatic cancer (PC) remains a disease with overall poor prognosis, despite significant advances over the past decade. Stereotactic body radiation therapy (SBRT) is able to deliver higher biologic effective dose to the tumor over a shorter period of time with reduced local toxicity compared to conventional external beam radiation therapy. EUS-guided fiducial placement has shown to improve the accuracy and localization during SBRT.
Conventional EUS-guided fiducial placement requires back-loading each fiducial through the tip of an FNA needle. Thus, delivery of multiple fiducials can be cumbersome and time-consuming.

**Aims & Methods:** We aimed to evaluate the feasibility, safety, and performance characteristics of fiducial deployment in PC patients using a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needles. This was a single-center pilot study of 10 consecutive PC patients undergoing EUS-guided fiducial placement for SBRT. The fiducial delivery system contains a 22-gauge EUS fiducial needle pre-loaded with 2 gold markers with knurled design. After the 2 markers were deployed, the EUS fiducial needle insert was exchanged out for a second pre-loaded EUS fiducial needle insert through the exchangeable FNA system for total deployment of 4 markers in each patient. All patients underwent CT after fiducial placement as part of SBRT to evaluate successful deployment and complications. The primary endpoint was procedure success, defined as deployment of at least 3 fiducials into the desired target area. Secondary endpoints were total procedure time, fiducial delivery time, and safety.

**Results:** Fiducial placement was attempted in 10 consecutive patients with PC (mean age 61.7 years, males 60%). The tumor was located in the head (n = 6), neck (n = 2), and the body (n = 2) of the pancreas. Mean size of the tumor was 2.7 cm (range 1.6–5.3). Procedure success was achieved in all 10 (100%) patients. All 10 patients successfully received fiducials. Mean total procedure time was 12.2 minutes (range 5–18). By comparison, using historic controls of the first 10 patients who underwent conventional EUS-guided fiducial placement, the mean total procedure time was 26 minutes (range 16–44, p = 0.002). Mean fiducial delivery time was 4.2 minutes (range 1–8). There were no immediate or delayed (7 days) complications.

**Conclusion:** EUS-guided fiducial placement with a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needle is quick, technically feasible and safe. This system may theoretically decrease the risk to the clinical staff by eliminating the need for back-loading fiducials through exposed needle tip and handling of potentially dirty needles. Given the potential safety and time advantages, further prospective studies are warranted for validation.

**Disclosure of Interest:**

E.J. Shin: Consultant, C2 Therapeutics No conflict of interest relevant to the abstract.

M.A. Khashab: Consultant, Boston Scientific No conflict of interest relevant to the abstract.

M.I. Canto: No conflict of interest relevant to the abstract.

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**P0917 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDOSCOPY**

O. Pietri1, G. Rezgu2, A. Hista2, M. Camus3, I. Nonn-Lamurier2, E. Abou Ai4, C. Li4, A. Beq5, O. Romain5, U. Chapat6, P. Marteau7, C. Florent1, X. Dray1

1Department Of Digestive Diseases, APHP Saint Antoine Hospital, Paris/France
2Gastroenterology, CHN, Pamplona/Spain
3College Of Arts And Sciences, Drexter University, Philadelphia/United States of America
4ETIS, ENSEA, Cergy Pontoise/France
5UPMC, Paris University, Sorbonne University, Paris/France

Contact E-mail Address: olivia.pietri@hotmail.fr

**Introduction:** Bubbles can impair the visualization of the small bowel (SB) mucosa during capsule endoscopy (CE).

**Aims & Methods:** Our aim was to develop and to validate a computational algorithm, which would evaluate the abundance of bubbles in SB-CE. Two sets of 200 SB-CE normal still frames were extracted from 45 complete third-generation SB-CE videos. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as "scarcely in" or "abundant in bubbles (<10% or ≥10% of bubbles covering the frame, respectively). Reproducibility (k coefficient), sensitivity (Se), specificity (Sp), Receiver Operating Characteristic (ROC) curve, and calculation times were measured for different algorithms (Grey-level of co-occurrence matrix [GLCM], fractal dimension, Hough transform, and Speeded-Up Robust Features [SURF]) using the experts’ reading as reference. Algorithms with highest reproducibility, Se and Sp were then selected for a validation step on the second set of frames. Criteria for validation were k = 1, Se ≥90%, Sp ≥85%, and a low calculation time.

**Results:** Both SURF and GLCM algorithms had high operating points (Se and Sp over 90%) and a perfect reproducibility (k = 1). At the validation step, the GLCM detector strategy had the best diagnostic capabilities, with Se = 95.79%, Sp = 95.19%, and a mean calculation time of 0.037s per frame. Table 1: Sensitivity (Se), specificity (Sp), negative predictive value (NPV), positive predictive value (PPV) and area under receiver operating characteristic curve (AUROC) of four algorithms for evaluation of bubble abundance in small bowel capsule endoscopy still frames (development step).

**Conclusion:** A GLCM detector strategy has high diagnostic performances to categorize "scarcely in" or "abundant in bubbles" SB-CE frames. This algorithm is of interest for clinical use (i.e. quality in CE reporting) and for research (providing an objective comparison tool of different preparations, including anti-bubble agents).

**Disclosure of Interest:** X. Dray: Xavier Dray has received consultancy fees from Covidien GI solutions

All other authors have declared no conflicts of interest.
Introduction: A variety many of pharmaceuticals for the treatment of colon disease can be more effective and have less side effects if targeted for precise delivery in the colon. Over the years, many types of delivery vehicles have been developed with the aim of targeting the colon, such as PB based delivery technologies, time dependent drug release mechanisms, pressure based mechanisms, flora sensitive mechanisms and others. These technologies have performed with variable degrees of success due to the wide distribution of motility and other physiological variability between patients. We describe a novel capsule technology which incorporates a diffused gas sensor that allows for an accurate sensing of colon entrance; as well as a 3D real time positioning system that allows for an accurate, programmable, localized, and in colon drug delivery system.

Aims & Methods: Data was collected from 14 patients that swallowed capsules in a multi-center clinical trial using an x-ray imaging capsule (GUT 2016). The patients were sent home to continue their normal life routine while the capsule naturally traveled in the gastrointestinal tract until excretion. (Subjects signed informed consent and the study was approved after local IRB approval). The capsules contained electronics and software that allowed for live communication between the capsule and a recording device that is placed directly on the patient's back. This device tracks the position of the capsule and communicates with it, receiving diffused gas pressure from the capsule sensor and fusing this information with 3D position information from the capsule. The capsule system exhibited position accuracy of ±1 cm and the ability to detect movements in real time, as well as potential of ~1 ml of payload for drug containment.

Results: The average total transit time of the capsule was 43 hours (range: 15-68 hours). The average transit time to cecum was 13.8 hours, and the average time across the colon was 12.8 hours (range 6-25). The position tracking and the RF communication between the capsule and the recorder showed >90% coverage in all cases, even in obese patients. No adverse events were reported. Figure 1 illustrates the recorder placement on the patient back. Figure 2 is a typical averaged capsule position trace in the colon.

Conclusion: A capsule with accurate position tracking, 2-way communication, and on line algorithms can determine colonic entrance and identify exact locations in the colon. A wide variety of drugs can accurately be delivered to their exact target in the colon. It enables for a more effective (high dose) and less toxic (no systemic delivery) therapy for IBD and cancer.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medic CheckCap
All other authors have declared no conflicts of interest.

P0921 COLON CAPSULE ENDOSCOPY: MAY REDUCE COLONOSCOPY MISS RATE – A MULTICENTER STUDY

S. Perek1, N. Schwartz2
1Medicine A, Rambam Health Care Campus, Haifa/Israel
2HaEmek Medical Center, Afula/Israel

Contact E-mail Address: shayperek@gmail.com

Introduction: Colon Capsule Endoscopy (CCE) is a visualization diagnostic modality of the colon mucosa, which has demonstrated high sensitivity for polyps and adenomas. This analysis indicates, that when utilizing 4 liter PEG and oral sulfate solutions for CCE procedure preparation, current cleansing assessment scale and methodology may need to be re-evaluated - to better correlate with polyp detection. Currently, “fair” cleansing may not indicate inadequate cleansing for polyp detection.

Disclosure of Interest: S. Perek: Employee of Medtronic
S. Farkash: Employee of Medtronic
N. Schwartz: Employee of Medtronic

References
Multivariate logistic regression revealed that after adjusting to polyp’s size, cecal and rectal segments were associated with increased chance of CCE additive value to colonoscopy (cecum vs. ascending or transverse colon: Adj.OR = 2.6 [95%CI: 1.1–5.8] and Adj.OR = 3.6 [95%CI: 1.2–11.4] respectively). There were 59 patients (8.49% of study population), with at least one CCE additive value to colonoscopy event.

Conclusion: CCE has the ability to detect polyps missed by traditional colonoscopy, especially lesions in the cecum and rectum.

Disclosure of Interest: S. Perek; Employee of Medtronic

References

P0922 ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE PANCREATIC FISTULAS AFTER DISTAL PANCREATECTOMY OR ENucleATION

M. Camus1, S. Chausse1, S. Lebhan1, S. Gajoux1, F. Puyé2, P. Balladur2, J.C. Vaillant3, M. Ménessier1, P.P. Massault4, M. Barret1, R. Coriat1, S. Chausse1, B. Dousset2, F. Prat3
1Gastroenterology, University Paris 5 APHP Hopital Cochin, Paris/France
2Surgery, University Paris 6 APHP Saint Antoine Hospital, Paris/France
3Surgery, University Paris 6 APHP Pitie Salpetriere Hospital, Paris/France
4Surgery, University Paris 5 APHP Cochin hospital, Paris/France

Contact E-mail Address: marine.camus@gmail.com

Introduction: Only small series (<10 patients) have described endoscopic management of postoperative pancreatic fistulas (POPF). The purpose of this retrospective study was to describe the indications, technique and results of endoscopic treatment of POPF.

Aims & Methods: From a prospective database of an endoscopic unit of a tertiary center, patients with POPF who underwent pancreatic endoscopic treatment during a retrograde endoscopic cholangiopancreatography (ERCP) were identified.

Results: Among the 23 remaining patients, the closure rate of POPF was 100% within an average (SD, [range]) was 378 days (497 [2–2227]) after the first ERCP. During FU, there were 3 stent migrations and 2 stent obstructions requiring a subsequent ERCP for stent removal. Eight patients (25.8%) died after surgery complications. Among the 23 remaining patients, the closure rate of POPF was 100% within an average (SD, [range]) was 453 days (785 [16–3260]) after the first ERCP, and a mean number of ERCP performed per patient (±SD) 2.5 (±1.0). No late reopening fistula occurred after removal of the pancreatic stent.

Conclusion: This retrospective study, the most important one reported to date, shows that the endoscopic treatment of POPF resistant to medical therapy is an effective option.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0923 EFFICIENCY OF PANCREATIC STENTS IN DIFFICULT CANNULATION – A RETROSPECTIVE SINGLE - CENTER STUDY

V. Sandru1, M. Ilie2, O.M. Plotogea1, E. Rinja1, I. Moroi1, B. Ungureanu1, G. Constantinescu1
1Dept. Of Gastroenterology, Clinical Emergency Hospital Bucharest, Bucharest/Romania
2Department Of Gastroenterology, Emergency County Hospital, Craiova, Craiova/Romania

Contact E-mail Address: drsandruvasile@gmail.com

Retrospective: Difficult biliary cannulation is defined by the presence of one or more of the following: more than 5 contacts with the papilla while attempting to cannulate; more than 5 minutes spent attempting to cannulate following visualization of the papilla; more than one unintended, pancreatic duct cannulation or more than one pancreatic duct stent insertion. In these situations, an additional pancreatic stent insertion might prove to be very useful for prophylactic and tactical purposes.

Aims & Methods: We are proposing in this paper to present the experience of Clinical Emergency Hospital Bucharest regarding difficult biliary cannulation where pancreatic stent insertion proved to be efficient in obtaining biliary opacification. This paper is a retrospective study of the patients who presented difficult cannulation and to whom pancreatic stents were inserted for prophylactic and tactical purpose. The patients’ mean age was 60 years, while the sex ratio was 2:1 in favor of the female gender. Pancreatic stents proved their efficiency in 90% cases, in only 3 patients deep cannulation being unsuccessful. On average, patients required 1-15 ERCP procedures in order to obtain biliary access. ERCP indication for benign pathology was predominant (60%). The stents used were 5 Fr, 5 cm (102 patients) and 5 Fr, 3 cm (56 patients). Precut sphincterotomy was performed in 82 cases (37 before stent insertion and 45 after stent insertion). From all patients included, only 19 patients (12%) presented post procedure elevation of serum amylase 3 times higher than normal value associated with abdominal pain. Closure of Pancreatic stents was considered efficient in obtaining biliary opacification in difficult situations. Regardless of their length, 5 Fr (3 cm, 5 cm) stents ensure the same success rate for cannulation and offers protection against post ERCP pancreatitis, as long as they are correctly inserted.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0924 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED BILIARY DRAINAGE WITHOUT DILATION DEVICE USING A THIN DELIVERY-SYSTEM STENT: A PRECLINICAL STUDY

I. Masahiro1, M. Kitano1, Y. Kawaji1, H. Abe1, T. Tamura2, N. Junya2, K. Hatamara2, H. Imai1, S. Oomoto1, K. Yamazoe2, K. Minaga3, K. Kamata2, T. Miyata4, M. Takenaka4, K. Kudo4
1Second Department Of Internal Medicine, Wakayama Medical University, Wakayama/Japan
2Gastroenterology And Hepatology, Kindai University, Osaka/Japan

Contact E-mail Address: ionaga@wakayama-med.ac.jp

Introduction: Endoscopic ultrasonography (EUS)-guided biliary drainage (EUS-BD) is increasingly used in the treatment of malignant biliary obstruction after failed ERCP. However, Multi-step process for EUS-BD is closely related to adverse events.

Aims & Methods: The present study was designed to determine feasibility and safety of stent placement using a thin delivery-system stent without dilation step during EUS-BD. Three types of the new designed partially covered laser-cut metal stents (6-mm-wide and 60-mm-long) with 7Fr delivery catheter with soft tip (7Fr soft tip) were prepared respectively. A phantom model with a silicon plate was created. The plate was punctured with a 19-G needle and a guidewire was passed the plate. The delivery system was advanced over the guidewire to pass the plate and the resistance force was measured. A biliary obstruction model was created by clipping the papilla in 10 pigs, EUS-BD (choledochoduodenostomy) using the thin delivery system stents was attempted following 19-G needle puncture without the use of dilation devices. The technical success and adverse events within 2 weeks after EUS-BD were analyzed for three types of stents.

Results: Among the three types of stents, 7Fr soft tip had the least resistance in the phantom model. In the animal model, the median common bile duct diameter before puncture measured on EUS and the median procedure time was 7.66 mm (4.05–9.5) and 29.3 minutes (16–47) respectively. In all pigs, EUS-BD using the three types of stents were technically successful. Dilusion was unnecessary in 25% (1/4), 0% (0/2) and 100% (4/4) for the 7Fr hard tip, 7.5Fr hard tip and 7Fr soft tip, respectively. Even in the cases requiring dilution, stent placement was successful immediately after dilation only with a thin catheter (7Fr). Neither postcatterty dilution nor balloon dilatation was needed. There were no procedure-related complications occurring during and 2 week after EUS-BD. All stents remained in place without migration. At necropys, fissulas were created between the thin duct and duodenal in all pigs and the growth of fibrous tissue was observed in the microscopic findings.
Conclusion: Among the three types of stents, the 7Fr soft tip was suitable for EUS deployment in the phantom and animal models. Therefore, this self-expanding system stent may be technically feasible and safe for EUS-BD and possibly reduce adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: To assess the frequency of DPD and its clinical significance after EUS guided drainage of PFC. Patients of acute or chronic pancreatitis with symptomatic PFC, who underwent Endoscopic Ultrasound (EUS) guided drainage between January 2011 to December 2016 were included, after an informed consent. Stents used for drainage procedure were either bi-flanged metal stent (BFMS) or double pigtail plastic stent. All these patients underwent MRCP between 4 to 8 weeks after drainage to evaluate pancreatic duct (PD) anatomy and confirm resolution of PFC. Subsequently, they had Endoscopic Retrograde Pancreatography (ERP) and choledochoscopy, stent removal. BFMS was removed in all patients. Plastic stents were retained indefinitely, if DPD was confirmed. All patients were systematically followed at 3–6 monthly intervals for any recurrence of PFC or new onset clinical event.

References

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References
P9928 FULLY COVERED SELF-EXPANDABLE METAL STENT IN THE MANAGEMENT OF DUODENAL RETROPERITONEAL PERFORATIONS DURING ERCP: A SINGLE CENTER EXPERIENCE

M. Pizzicannella1, G. Andrisani1, M. Martino1, R. Rea1, M. Pandolfi2, F.M. Di Matteo1
1Digestive Endoscopy Unit, Campus Bio Medico, Rome/Italy

Contact E-mail Address: f.dimatteo@unicampus.it

Introduction: ERCP-related perforation is rare (0.39%), but it is associated with a mortality of 7.8%. Duodenal retroperitoneal perforation (Type II) is the most frequent, among the ERCP-related perforations. The management of this complication has not been standardized yet: traditionally surgery was considered the only rescue therapy, but in the last years the majority of cases has been managed conservatively. The endoscopic treatment included biliary stent and/or nasobiliary drainage. In our institution, from 2010 we have been using fully covered self-expandable metallic stent (FCSEMS) with nasobiliary drainage always after resolution of the initial indication for ERCP. These stents have the advantage of covering the laceration and allowing free flow of bile into the duodenum instead of into the retroperitoneal space. The aim of this study was to evaluate in our cohort of patients, the benefits of FCSEMS in type II perforations.

Aims & Methods: We experienced six type II perforations associated with ERCP. We retrospectively evaluated the clinical findings, the length of hospital stay, the need for surgery and death.

Results: Of the 3250 ERCP procedures performed from March 2010 to November 2016, only six (0.18%) resulted in perforations (male/female, 2/4; median age: 69; age range: 54-80 years). ERCP procedures were performed with carbon dioxide insufflation. Five patients underwent ERCP for biliary stones. In two cases spherentorotomy was performed and perforation was immediately detected. Successful closure of persistent spherentorotomy-related duodenal perforation using FCSEMS was obtained in all patients. One patient developed ERCP-related pancreatitis, successfully treated with medical therapy. Three FCSEMS were successfully removed after a median of 18 days; the remaining three fell out spontaneously. The median length of hospital stay was 8.5 days (range 4-20 days). There were no deaths or need for surgery.

Conclusion: The placement of FCSEMS is easy, safe and quick. In our cohort of patients, FCSEMS was considered the only rescue therapy, but in the last years the majority of cases has been managed conservatively. The endoscopic treatment included biliary stent and/or nasobiliary drainage. In our institution, from 2010 we have been using fully covered self-expandable metallic stent (FCSEMS) with nasobiliary drainage always after resolution of the initial indication for ERCP. These stents have the advantage of covering the laceration and allowing free flow of bile into the duodenum instead of into the retroperitoneal space. The aim of this study was to evaluate in our cohort of patients, the benefits of FCSEMS in type II perforations.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: In our study, the mitomycin injection therapy was effective in patients who had retracted benign esophageal stenosis. The mitomycin injection therapy could be considered as an alternative for retractable benign esophageal stenosis. A large-scale prospective studies are required in future.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1: Outcomes of MMC injection therapy

<table>
<thead>
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<th>Variables</th>
<th>values</th>
</tr>
</thead>
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<tr>
<td>Number of Bougie dilation before MMC injection</td>
<td>5/6/7/8/9</td>
</tr>
<tr>
<td>The number of session of MMC injection 1/2</td>
<td>3/3</td>
</tr>
<tr>
<td>Mean GOO score before MMC injection</td>
<td>2.5</td>
</tr>
<tr>
<td>Mean score of GOOSS after final MMC injection</td>
<td>0.29</td>
</tr>
<tr>
<td>Mean diameter of stenosis before MMC injection</td>
<td>5.2</td>
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<tr>
<td>Mean diameter of stenosis 3 month after final</td>
<td>8.9</td>
</tr>
<tr>
<td>MMC injection, mm</td>
<td>4.1</td>
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<tr>
<td>Clinical success rate (%)</td>
<td>87.5</td>
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<tr>
<td>Complications (N, %) perforation bleeding</td>
<td>(0/0) 0/0/0 (0)</td>
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<td>transfusion of other interventions others</td>
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</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0933 EVALUATION OF FACTORS ASSOCIATED TO A SUCCESSFUL DILATION IN POST-ESD STRICTURES

E. Perez-Cuadrado-Robles1, H. Piessevaux1, T. Moreels1, R.C.P. Yeung1, E. Dans1, P.H. Deprez1
1 Department Of Gastroenterology, Cliniques Universitaires Saint-Luc, Brussels/Belgium
2 Radiology, Cliniques Universitaires Saint-Luc; Universite Catholique de Louvain, Brussels/Belgium

Contact E-mail Address: kikemuric@gmail.com

Introduction: The prevalence of post-ESD esophageal strictures is non-negligible, with a critical impact on the patients’ quality of life. Balloon-dilation may be the first-line therapy. However, factors associated to a successful dilation in post-ESD strictures remain unclear.

Aims & Methods: This is an observational and analytical retrospective study. Sixty-eight consecutive patients (mean age: 65 ± 11y, 76.5% men) who underwent endoscopic dilation because of post-ESD symptomatic esophageal strictures between 2006 and 2016 were included. They had Barrett’s esophagus (n = 46, 67.6%), epidermoid carcinoma (n = 21, 30.9%) and other (n = 1). Patients with aneoplastic esophageal strictures were referred to Oncology. Dilatation, endoscopic recanalization without complaints. Primary end-point –The rate of clinical success. Secondary end-points were defined as follows: Technical initial success was 100%. We did not dilate patients with recurrence prior to stent placement. After the first RPS we could deploy a 2nd (100%, average 3.5 – range 1.5–6 months) and a third stent (40%, average 11, range 7.5–14.5 months). Later, after 2.5–15.5 months, lumen was stable and restored. Granulation tissue in-between stent fibers produced early stenosis, treated by re-stenting. 1 stent prolapsed partially from the anus and was shortened with scissors. Bleeding was not present. Pelvic pain in all the patients needed NSAIDs and reduced over time.

Conclusion: These cases show that stenting with RPS of anastomotic dehiscences is feasible, safe and effective. Due to restenosis associated with dehiscence multiple stents were needed. Distal migration was easily managed. Distal anastomoses might explain the presence of pelvic pain. 3 patients have been subjected to re-calcanealization without complaints.

Disclosure of Interest: All authors have declared no conflicts of interest.
CD 70 F sigmoid adeno K Sigmoid resection and colorectal anastomosis with colostomy and radiotherapy anastomotic stenosis Endoscopic dilation Sub-total dehiscence 3 4 8.5
RS 52 M rectal adeno K Knight-Griffen re-tosisigmoid resection Perianal fistulas an anastomotic dehiscence Ileostomy + 3 re-do low colorectal anastomosis + 1 FC-SEMS placement and removal Sub-total dehiscence 3 4 + 1 FC-SEMS placement and removal 15.5
AI 23 M Occlusion due to Hirsch prung’s disease Ileoectomy, left emicolectomy, colocolo anastomosis, closure of ileostomy Abscess and dehiscence Re-do ileostomy and anastomosis, 1 FC-SEMS placement and removal Abscess and total dehiscence 2 3 2.3
UN 53 M sigmoid adeno K Sigmoid resection and colorectal anastomosis anastomotic stenosis and dehiscence Endoscopic dilation and 1 FC-SEMS placement and removal Sub-total dehiscence 2 3 15
DN 54 F sigmoid adeno K Sigmoid resection and colorectal anastomosis anastomotic stenosis and dehiscence Endoscopic dilation and 1 FC-SEMS placement and removal Sub-total dehiscence 2 3 10
expansion (1.38%, 3%), and levar (1.38%, 3%) in Group W and perforation due to obturator (6.2%) in Group G. Cases with stent-stent perforations (4.5%) in Group W and stent occlusion (2.53%, 4%) in Group N. All 4 patients with stent-related perforations had undergone palliative stenting with the WallFlex colonic stent, and the stent-related perforation rate in Group W was significantly higher than that in Group N (P < 0.05). In Group D, there were no complications and no stent occlusion.

Conclusion: The technical and clinical success rates were extremely high in all groups, and the obtained details were also retrieved. Multiple regression models with the data to test the association between potential predictors and preoperative lymphopenia and lymphopenia on POD1 as parameters of immune suppression. Results: The preoperative lymphocyte count was 1, 240/ml (IQR: 0.895–1.700) and 1, 280/ml (IQR: 0.780–3.020) in Group 1 and Group 2, respectively. The lymphocyte count on POD1 was 0.670/ml (IQR: 0.500–0.792), p < 0.001; on POD3, it was 0.800/ml (IQR: 0.580–1.070), p < 0.001; and on POD7, it was 0.825/ml (IQR: 0.550–1.180), p < 0.001. In a model also included the interval between the end of neoadjuvant therapy and the esophagectomy and the cause for the recurrence of symptoms, the lower esophageal sphincter was the most related predictor of preoperative lymphocyte count on POD1.

Conclusion: Patients with esophageal and esophago-gastric junction cancer present a significant postoperative immunosuppression that lasts at least for the first postoperative week. The total amount of radiation received by the mediastinum is the only predictor of the preoperative and postoperative lymphocyte count.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: To improve the quality of esophageal cancer surgery in the Netherlands, the number of retrieved lymph nodes (LNs) is evaluated in one the quality indicators in the Dutch Upper Gastrointestinal Cancer Audit (DUGA).(1) All hospitals in the Netherlands can use the outcomes of the DUGA to monitor their own results in relation to the national average. The aim of this study was to analyze the outcomes of the quality indicator: ‘a minimal number of 15 retrieved LNs’ in the past years and to determine factors associated with this outcome.

Aims & Methods: Patients with an esophageal carcinoma who underwent an esophagectomy with curative intention and who were registered in the Dutch Upper Gastrointestinal Cancer Audit between 2011–2016 were included in this retrospective national cohort study. The primary outcome: ‘percentage of patients with ≥15 LNs’ was analyzed by year and hospital. Factors tested with univariable and multivariable analysis for the association with ≥15 LNs were: age, Charlson score, weight loss, BMI, cT-, cN-, cM-stage, tumor location, neo-adjuvant therapy, type of procedure, intraoperative complications, hospital volume, and year of resection. The postoperative outcomes: radicality, intraoperative complications, morbidity, and mortality were tested on association with ≥15 LNs.

Results: The overall percentage of patients in the Netherlands with ≥15 LNs increased between 2011 and 2016 from 51% to 81%. The variation between hospitals decreased. Multivariable analysis showed an independent association with ≥15 LNs for the factors: cN2-stage (OR [95% confidence interval]: 1.37 [0.5–1.9]), resection in a hospital with 26–50 or ≥51 resections/year (reference), and year of resection (2011: ORs 1.55, 1.81, 2.43, 2.20, 2.64). Factors independent associated with <15 LNs are: neo-adjuvant chemoradiation-therapy (reference: no neo-adjuvant therapy), 0.66 (0.47–0.93), intraoperative complications (0.55, 0.39–0.80) and open and minimally invasive transhiatal resection (reference: open transhiatal, 0.24 [0.18–0.32] and 0.38 [0.26–0.55]). Postoperative morbidity and mortality were not associated with ≥15 LNs.

Conclusion: Of the quality indicator ‘a minimal number of 15 retrieved LNs’ is increased between 2011 and 2016. The variation between hospitals is decreased. The cN-stage, neo-adjuvant therapy, type of procedure, intraoperative complications, year of resection and hospital volume seem to be associated with ≥15 LNs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: The aim of this review was to determine the optimum choice and technical conduit following colon interposition after oesophagectomy in adults. PubMed, MEDLINE and the Cochrane Library (January 1985 to January 2017) were systematically searched for studies which reported outcomes of colonic interposition after oesophagectomy in adults. The primary outcome measure was overall morbidity and secondary outcome measure was operative mortality.

Results: Twenty-seven studies, involving 1849 patients (median age 60 years, 1177 males, 697 malignant disease) who underwent colonic interposition were analysed. The overall pooled mortality rate of left vs. right colonic conduit was 5.6% [95% CI (3.50–7.60), p < 0.0001] vs. 10.3% [95% CI (7.23–12.77), p < 0.0001] respectively. Retrosternal route placement was associated with the lowest overall pooled mortality of 9.2% [95% CI (6.48–11.99), p < 0.0001], and lowest overall pooled mortality of 4.8% [95% CI (3.74–5.89), p < 0.0001].

Conclusion: Left colon is the conduit of choice for colonic interposition after oesophagectomy in adults and the retrosternal route should be favoured.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
or more extended liver resection (HPD) is occasionally indicated in patients with

**Results:**

the frequency of adverse prognostic factors tended to be higher in the CS group. The S group, e.g., tumor size (mean ± SD: 6.0 ± 3.5 vs 2.7 ± 1.7) and number of metastatic lymph nodes (4.2 ± 6.3 vs 2.7 ± 2.1). Nevertheless, overall survival (OS) in the CS and S groups since primary tumor resection was equivalent (3-year survival rate: 86.9% vs 93.4%, Log-rank P = 0.34) and much better than that in the C group (3-year survival rate: 40.2%). Although liver-limited relapse-free survival (RFS) since hepatectomy tended to be worse in the CS group than in the S group (3-year survival rate: 45.0% vs 62.7%, Log-rank P = 0.14), RFS after hepatectomy was equivalent in the two groups (3-year survival rate: 33.3% vs 21.6%, Log-rank P = 0.97). Early tumor shrinkage (ETS) was found to be a stronger prognostic factor for liver resection after chemotherapy than existing prognostic factors in univariate and multivariate analyses, and RFS was much better in patients with ETS than in those with non-ETS (3-year survival rate: 62.5% vs 77.4%, Log-rank P = 0.05).

**Conclusion:** OS and RFS in the CS group compared favorably with those in the S group despite the high frequency of poor prognostic factors; patients with ETS had a better prognosis after liver resection. Liver resection after chemotherapy revealed comparatively favorable prognosis in well-selected patients with sCRLM, and early responsiveness to chemotherapy was useful in determining the indication for liver resection in patients receiving chemotherapy for sCRLM.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0944 PARADIGM SHIFT? SHOULD A LYMPHADENECTOMY FOLLOWING PANCREATODUODENECTOMY ROUTINELY BE PERFORMED ALSO AMONG GALLBLADDER CANCER PATIENTS WITH T1A DISEASE?**

**Disclosure of Interest:**

N. Köhn1, R. Warschkow2, D. Nussbaum3, D. Candinas4, B. Gloor1, B. Schmied1, D. Bla¨zer1, M. Worn1

1Visceral Surgery And Medicine, Inselspital, University Clinic, Bern/Switzerland 2Surgery, Kantonsklinik St. Gallen, St. Gallen/Switzerland 3Surgery, Duke University Medical Center, Durham/United States of America/NC 4Institut fi¨r Chirurgie, Universit¨atsmedizin des Saarlandes, Homburg/Saar/Switzerland

**Reference**

Klebsiella pneumoniae (species and antibiotic susceptibility) with RS culture in 157 patients (86.7%).

2.9, p<0.009 OR 3.4, respectively). Bile-culture showed a perfect correlation with enteric rods that occurs after PBD. Infectious complications and mortality after PD are independently associated with a positive RS culture. Our study suggests that preoperative RS can direct antibiotic prophylaxis in order to reduce the burden of ICs and deadly events after PD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Contact E-mail Address: kanefumi0159@yahoo.co.jp

Introduction: Surgical site infections (SSIs) after gastroenterological surgery cause significant morbidity, prolong hospitalisation and increase health care costs. Thus, SSI prevention is critical. To prevent bacterial colonisation in suture material, which disables local mechanisms of wound decontamination, triclosan-coated sutures were developed. We retrospectively analysed the efficacy of triclosan-coated polydioxanone sutures in abdominal fascia and skin closure using a propensity score matching analysis. We further analysed the surgery types for which these sutures are best suited.

Aims & Methods: The study protocol followed the principles of the Declaration of Helsinki and received ethical approval from the Ethics Committee of the Fukuoka University (approval no. 12-7-96). At our department, we used conventional abdominal closure methods during gastroenterological surgery before August 2012. Thus, we retrospectively collected surveillance data over a 1.5-year period for the control group. From September 2012, we began using triclosan-coated sutures for closure. Here, we evaluated data for the control group from September 2012 to September 2013. In total, we included 1768 patients (control group, n=640; study group, n=1128) who underwent gastroenterological surgery. Baseline differences and selection bias were adjusted using propensity score matching.

Results: Before matching, the SSI incidence differed significantly between the control and study groups for all gastroenterological surgeries [12.4% (140/1142) vs. 5.7% (55/940); p<0.001] and the SSI incidence type was as follows in the control and study groups: 12.7% (26/204) vs. 10.5% (12/114) (p=0.347) for upper gastrointestinal (GI) surgery, 14.6% (43/294) vs. 5.3% (10/190) (p=0.001) for lower GI surgery, 8.8% (24/274) vs. 4.1% (7/169) (p=0.045) for hepatobiliary-pancreatic surgery, 18.2% (40/220) vs. 7.8% (5/64) (p=0.030) for emergency surgery and 5.1% (7/136) vs. 1.0% (1/103) (p=0.074) for others. Of 1768 cases, 483 pairs were matched using propensity score matching. No parameter used for the propensity score differed between the groups. After matching, we found a significant difference in the SSI incidence between the control and study groups for all gastroenterological surgeries [9.7% (47/436) vs. 5.7% (28/455); p<0.001]. We found a significant difference in the SSI incidence between the control and study groups for lower GI surgery [17.0% (16/98) vs. 4.3% (4/190) (p=0.008) and hepatobiliary-pancreatic surgery [16.9% (41/116) vs. 4.3% (4/63); p=0.049] surgeries. No significant difference was found between the groups for upper GI surgery, emergency surgery and others. Multivariable logistic regression analysis showed that triclosan-coated suture use for lower GI surgery was the independent factor affecting the SSI incidence (p=0.017). The sutures demonstrated a significant efficacy in lower GI surgery.

Conclusion: Few studies have focussed on the types of surgery best suited for triclosan-coated sutures. Our findings suggest that abdominal fascia and skin closure using these sutures reduces the SSI risk, particularly for lower GI surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
 reference list

Disclosure of Interest:

Contact E-mail Address: salvatore.paiella@univr.it

Introduction: Despite improvements in the perioperative care, the morbidity rate after Pancreaticoduodenectomy (PD) is still higher than 50%. In particular, infectious complications (ICs) occur in about one-third of cases. This study aimed to investigate the correlation between preoperative rectal swab (RS) and intraoperative bire cultures, and its impact on postoperative course of patients submitted to PD.

Aims & Methods: The institutional electronic database was queried for all consecutive patients from January 1, 2010 to June 30, 2016. Data were retrospectively analyzed. Based on the positivity/negativity of preoperative surveillance RS for multi-antibiotic resistant Gram-negative and Gram-positive enteric rods, the population was divided into two groups consequently (RS+ vs. RS-).

Results: Three hundred thirty-eight patients were considered for the analysis. Overall 50 patients (14.8%) showed a RS+. Preoperative biliary drain (PBD) was the only independent risk factor associated to RS+ (p=0.021, OR 2.6). The rate significantly differed in the overall morbidity, ICs, sepsis, pulmonary complications, reoperation and mortality (p<0.05). At multivariate analysis, ICs and mortality remained independently associated to RS+ (p=0.013 OR 2.9, p=0.009 OR 3.4, respectively). Bile-culture showed a perfect correlation (species and antibiotic susceptibility) with RS culture in 157 patients (86.7%). The most common microorganisms found were E. Coli ESBL (6.6%) and Klebsiella pneumoniae carbapenemase-resistant (2.2%).
P0947 COMPARISON OF POSTOPERATIVE CONDITIONS BETWEEN ESOPHAGOGASTROSTOMY WITH THE DOUBLE-FLAP TECHNIQUE AND THAT WITH A CIRCULAR STAPLER IN LAPAROSCOPIC PROXIMAL GASTRECTOMY

M. Hayashi, H. Kawakubo, S. Mayanagi, K. Fukuda, R. Nakamura, K. Suda, N. Wada, Y. Kitagawa
Department Of Surgery, Keio University School of Medicine, Tokyo/Japan

Contact E-mail Address: sas.jtf@gmail.com

Introduction: In recent years, laparoscopic proximal gastrectomy (LPG) has been actively performed in our institution to reduce invasiveness. However, proximal gastrectomy is sometimes followed by reflux. Until February 2015, we performed esophagogastrstomy with a circular stapler (CS) accompanied by fundoplication in LPG. Therefore, since March 2015, to avoid the postoperative complication, we have been using esophagogastrstomy with the double-flap technique (DFT) in LPG for gastric cancer.

Aims & Methods: We conducted this study to examine whether DFT can reduce the incidence of reflux and influence postoperative complications, postoperative hospital stay, and incidence of anastomotic stenosis. We compared surgical factors and compared between the DFT and CS groups. Second, gastroesophageal reflux finding on esophagography, condition of the remnant stomach according to residue, gastritis, bile (RCF) grading at postoperative 6 months and 1 year, and proton pump inhibitor (PPI) intake were examined as postoperative factors. Finally, albumin and hemoglobin levels at postoperative 6 months and 1 year were examined as nutritional factors. Gastroesophageal reflux was assessed with scores of 0–5 in accordance with the Los Angeles (LA) classification.

Results: Twenty-three LPGs with DFT and 24 with CS were performed during the period. Compared with the CS group, the DFT group had a significantly longer surgical time (272.3 ± 55.5 vs. 241.1 ± 26.7 min, p < 0.01). Other surgical factors did not show any statistically significant differences between the two groups. As for postoperative factors, although no significant differences in PPI intake, LA classification, and RCF grading were found, the DFT group showed a significantly lower score than the CS group (p < 0.01). Postoperative nutritional factors showed no statistically significant differences between the two groups. Postoperative conditions in most cases are argued between the DFT and CS groups.

Conclusion: Although LPG with DFT required a longer surgical time than LPW with CS, DFT is thought to be a safe reconstruction method in LPG. In addition to its safety, DFT can reduce postoperative reflux in patients who undergo LPG.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Department of General, Abdominal, Thoracic and Vascular Surgery, Katholische Marienkrankenhäuser gGmbH, Hamburg/ Germany
3. Medical Clinic, Westenhüntenklinik, Heide/Germany

Contact E-mail Address: loske.chir@marienkrankenhaus.org

Introduction: Gastrointestinal (GI) leaks and perforations are difficult to manage and often mandate laparotomy and extensive surgical interventions for their repair. Endoscopic Negative Pressure Therapy (ENTP) has been developed to treat GI leaks such as leaks, fistulae and perforations. However, ENPT has only been utilized in the management of rectal and esophageal leakages. By modifying the delivery catheter we were able to adapt ENPT to treat duodenal defects, that otherwise would have required surgery or more invasive methods to be used.

Aims & Methods: Herein, we report ENPT using open-pore Polyurethane-foam and Film Drainage in a series of 10 patients with duodenal leakages. This is an open-label, retrospective, single-center study. Open-pore polyurethane-foam drainage (OPD) devices were constructed out of a piece (1.5 cm x 1.5 x 3 cm) of open-pore polyurethane foam which was fixed surrounding the tip of a nasogastric drainage tube. Small bore open-pore film drainage (OFD) device was constructed with a strip of a very thin fragment open-pore double layered film (15 cm x 1.5 cm) and was fixed surrounding nasogastric drainage tube. The open film consists of two permeable membranes with a small interspace. Fluids are drained along the interspace and through the membranes. Diameters of small-bore OPD is 4–6 mm, depending on the diameter of the drainage tube. OPD is inserted transanally. The foam is fixed with anoderm copolymers and guided to the duodenal lumen. After correct placement into the duodenal lumen for intraluminal ENPT, the tube is transferred out nasally, to become a nasoduodenal tube. Due to its smaller outer diameter, OFD insertion is similar to placing a nasogastric or nasointestinal feeding tube (i.e. through the nose). After nasal insertion into the esophagus OFD is grasped with a forceps and advanced into the stomach, and guided into the duodenal lumen for intraluminal ENPT. In case of a duodenal-cutaneous fistula the pull-through technique has been used for duodenal placement. In one case rendezvous technique was used in combination with open surgical incision. OPD and OFD devices are connected to an electronic vacuum device and negative pressure is applied. We use standard negative pressure of 125 mmHg, continuous suction, and high intensity, which results in collapse of the duodenal lumen around the open-pore foam or film with subsequent closure of the duodenal lumen. Furthermore, duodenal secretions are actively removed through the tubes.

Results: We treated 10 patients with ENPT because of a duodenal leakage. Reason of duodenal defects were: rupture of operative suture (n = 8), iatrogenic duodenal perforation due to perforation of a drain (n = 1), and active and often mandates laparotomy and in one patient with intracavitary variant of ENPT. In 7 patients we used the OPD device, in one patient OFD, and in two patients OPD and OFD. All leakages (100%) were successfully closed after the procedure. ENPT was performed accurately at the site of duodenal perforation and perforations using common endoscopic techniques and thus represent a potential addition to the armamentarium to treat these difficult lesions.

 Disclosure of Interest: G. Loske: Gunnar Loske is a consultant for Lohmann & Rauscher.

All other authors have declared no conflicts of interest.

References
1. N. Wada, Y. Kitagawa
2. G. Loske
3. G. Loske: Gunnar Loske is a consultant for Lohmann & Rauscher.

Contact E-mail Address: srgh@hotmail.com

Introduction: The main releaser for development of multiorgan failure syndrome (MOFS) is often the sequelae of severe infections and the sequelae of surgical complications and multiorgan failure syndrome (MOFS) in most cases are aggressive mediators of inflammation which are very often occur after surgical complications and more than in 70% of cases leads to lethal outcomes. Increase of an endotoxemia leads to development of the expressed pathological processes and to a fast descompensation of bodies of natural descompensation with the subsequent development of a multiorgan failure syndrome (MOFS). Increase in detoxication ability of sorbents can happen due to change of chemical composition, or due to collimating of padding properties to them by their modification by various agents by means of an immobilization on their surface of the active and inorganic components. Thus, this plan especially important role is got by the researches directed to development of sorbents with detoxication activity.

Aims & Methods: Aim of study is to estimate effectiveness of the modified haemosorbsor application for patients about the MOFS. The experimental part of work was conducted on 14 not purebred dogs with the acute liver failure modelled by bandaging of distal department of the CBD. After development of pathological process animals were divided into 2 groups. To the first group of animals the procedure of a haemosorbsor was carried out by a reference technique using type of a haemosorbsor of SKN-2K. To the second group of animals the haemosorbsor was carried out by the developed technique with the same sorbent, but the solution of a neutral anolyte subjected to oxidizing modification. For this purpose, in the flowing mode carried out a half-hour incubation of a solution of a neutral anolyte subjected to oxidizing modification.

Results: Results showed that at animals of the 2nd group in comparison with group of comparison improvement of a condition of an organism was expressed in more significant degree. After performing detoxication therapy by the developed technique a normalization of all studied parameters is registered. The same tendency is revealed also concerning nontoxic components. It is necessary to pay special attention to dynamics of a ratio of the common protein and an index average molecules (the common protein, pointing to synthesis process activation. The carried-out all-clinical blood test revealed the considerable improvement of indexes of white blood. In group of comparison it was not achieved to succeed the complete normalization of the studied indexes. On the basis of what the conclusion was drawn on high effectiveness of the developed technique, and expediency of its introduction in clinical practice. Under our observation there were 45 patients needing carrying out getter detoxication in the postoperative period. The control group (25) was created by a random sample of case histories of patients with the MOFS who was earlier on treatment in our clinic and receiving a course of haemo perfused therapy by a reference technique. The analysis of results of treatment of patients of a basic group showed that the positive dynamics of clinical indexes expressed in decrease of manifestations of an intoxication syndrome, improvement of health and laboratory indexes is noted in earlier terms, and degree of expressiveness of positive changes at them was much higher. Dynamics of decrease in endogenic intoxification is reflected by data of laboratory researches. Thus, it was showed that it is possible to increase quality of detoxication by a pretreatment of a haemo sorbent solution of a neutral anolyte. As a result of it the sorbent gains padding, oxidizing properties. At such modification there is an inclusion of oxygen-containing and acid groups in structural composition of a sorbent. So, the surface of a sorbent protogenic groups of the carboxylic and phenolic types thanks to which the oxidized coals gain the expressed cation-exchange ability are formed. Therefore, besides actually getter, such sorbent follow-up gains oxidizing properties. Modification of a sorbent solution of a neutral anolyte incidentally allows to solve also other problem connected about need of use of anticoagulants for prevention of a thrombogenesis in a column. Use it in this quality provides decrease in risk of postoperative violations from system of a hemostasis.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0950 CARDIAC SEPTAL DEFFECT OCLUDER DEVICE FOR ENDOSCOPIC TREATMENT OF GASTRO-CUTANEOUS AND GASTRO-PULMONARY LEAKS AFTER BARIATRIC SURGERY
A.J. Baptista1, W. Bandel2, A. Gelrud1, A. Salinas1, L.C. Sabagh3, A. Ospina3, M.A. Guzman1, J.F. Pinera1, H. Rass1, A. Oropeza1, M. Antor1

Contact E-mail Address: aiberto.baptista@hotmail.com

Introduction: Gastric leaks are severe complications of Bariatric Surgery (BS). Surgical revision may be indicated but is associated with high morbidity and mortality. The use of self-expanding esophageal metallic stents (SEMS) has become an effective alternative. Over the scope clips (OTSC) have also been used. Nevertheless some patients develop a refractory fistulae after stent removal or other failed endoscopic treatments. Cardiac Septal Defect Closure Devic (CSDCD), used in interventional cardiology have been described to treat post-surgical digestive fistulae in non-bariatric cases. Aims & Methods: We aim to present the experience using CSDCD for gastric leaks after BS. In this retrospective study, patients with leaks secondary to gastric bypass (GBP) or sleeve gastrectomy (SG) from 4 centers were included. Data collected from november 2012 to january 2016 included sex, age, type of surgery, previous treatment, tract path, size of the leak opening and defect closure. Leaks were grouped according to the International Sleeve Gastrectomy Expert Panel Consensus in acute (post-operative days 1–7), early (1-6 weeks), late (after 6 weeks) and chronic (>12 weeks). Biliary catheters were adapted to introduce the CSDCD through the gastroscopes working channels. Clinical success was defined as complete and permanent resolution of abdominal or thoracic pain syndrome severity (visual analog scale), need for analgesics, postoperative complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect. Results: It was revealed that CSDCD were effective to treat post bariatric surgery late and chronic complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect. Conclusion: Further studies to standardize, evaluate the safety and benefits of CSDCD are effective to treat post bariatric surgery late and chronic complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0951 COMPARATIVE EVALUATION OF LAPAROSCOPIC SINGLE-PORT (SILS) CHOLECYSTECTOMY AND LAPAROSCOPIC FOUR-PORT CHOLECYSTECTOMY
A. Alekberzade, N. Krylov, E. Lipnitsky

Surgery, Sechenov First Moscow State Medical University, Ministry of Health of the Russian Federation, Moscow/Russian Federation

Contact E-mail Address: altandil.s.alekberzade@gmail.com

Introduction: Laparoscopic cholecystectomy is the gold-standard for the treatment of gallbladder stones disease. Single-incision laparoscopic (SILS) cholecystectomy was introduced with the aim of reducing the invasiveness of classic laparoscopic surgery. Despite satisfactory cosmetic results of SILS cholecystectomy and its repeute of a painless procedure, there are few published studies comparing early and long-term postoperative period of laparoscopic SILS cholecystectomy versus laparoscopic four-port cholecystectomy.

Aims & Methods: The aim of this study is the comparative evaluation of SILS cholecystectomy and laparoscopic four-port cholecystectomy. Early and long-term postoperative period has been analyzed in 240 patients who underwent laparoscopic cholecystectomy including 120 cases of single-port technique and 120 cases of four-port technique. Both groups were compared in surgical time, pain syndrome severity (visual analog scale), need for analgesics, postoperative complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect.

Results: Prior failed therapies included: SEMS and enteral drainage within 10 days, and OTSC within 7 days and SEMS were placed instead leading to defect closure. The 5 early, 22 late and 12 chronic leaks. Prior failed therapies included: SEMS and enteral drainage within 10 days, and OTSC within 7 days and SEMS were placed instead leading to defect closure. The 5 early, 22 late and 12 chronic leaks. Prior failed therapies included: SEMS and enteral drainage within 7 days and SEMS were placed instead leading to defect closure. The 5 early, 22 late and 12 chronic leaks.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0953 BASELINE CHARACTERISTICS IN LAPAROSCOPIC SIMULATOR PERFORMANCE

N. Oussi1, P. Remann2, E. Georgiou3, L. Enochsson4
1Division Of Surgery, Karolinska Institutet, Huddinge/Sweden
2Division Of Medical Education, Umeå University, Umeå/Sweden
3Medical Physics Dept., Athens University Medical School, MPLSC, Medical School, National and Kapodistrian University of Athens, Athens/Greece
4Department Of Surgical And Perioperative Sciences, Umeå University, Division of Surgery, Umeå/Sweden

Contact E-mail Address: ninos.oussi@ki.se

Introduction: Laparoscopic technique is the first choice for multiple surgical procedures today. Laparoscopic surgery differs from traditional open surgery in several aspects, for example two-dimensional view of a three-dimensional interior, higher demands on eye-hand coordination and lack of tactile feedback. Laparoscopic surgical skills can be substantially improved by simulator training. Learning via simulators are under constant development and it is important to understand the value of baseline characteristics and abilities to further optimize simulators and training curricula within surgical education. In this study, focus, will be PC-gaming experience and low visuospatial score to offer them additional simulators than baseline skills. It could be valuable to identify individuals with both low PC-gaming experience and low visuospatial score to perform worst in the simulator exercises.

Aims & Methods: The aim of the study is to further analyse different factors to laparoscopic simulator training. 48 medical students completed three tasks in a laparoscopic virtual reality simulator, a validated Minimally Invasive Surgical Trainer (MIST, Mentor, Gothenburg, Sweden). Prior to the task, they performed a visuospatial test and answered questions regarding baseline characteristics (e.g. PC-gaming experience, age, gender, previous simulator experience). The data were analysed regarding different parts of the simulator (time, economy of movement, error rate and total score).

Results: The group with high PC-gaming experience performed significantly better in total time (Mean difference = 85.49, p = 0.021) and economy of movement (M = 25.30, p = 0.018) in task 1 and 2. There were no differences between either of the groups in task number 3. A high visuospatial score correlated with a better result in time to completion (M = 68.89, p = 0.026) and total score (M = 80.16, p = 0.036). The group with both low PC-gaming experience and low visuospatial score performed worst in the simulator exercises.

Conclusion: PC-gaming experience and visuospatial ability have an impact on laparoscopic simulator performance. No remaining significant differences by the third simulation exercise indicates a learning effect that could be more important than baseline skills. It could be valuable to identify individuals with both low PC-gaming experience and low visuospatial score to offer them additional simulator training.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0954 PERITONEAL TUBERCULOSIS: EPIDEMIOLOGICAL DATA, CLINICAL AND EVOLUTIVE ASPECTS ACCORDING TO THE EXPERIENCE OF A TUNISIAN CENTER

W. Ben Ameur, J. Hainen, E. Hammadni, E. Nour, M. Ksiaa, B. Ahlem, A. Salem, A. Ben Said
Gastroenterology Service, Sahbi, Sousse/Tunisia

Contact E-mail Address: wafahbenamer@hotmail.fr

Introduction: Tuberculosis is a major cause of morbidity and mortality worldwide. Its incidence is continually increasing. Peritoneal localization is a particular entity, even less well known, because of its atypical and confusing symptomatology, which in most cases imposes a malignant condition.

Aims & Methods: We collected all patients hospitalized for peritoneal tuberculosis at the University hospital of Sfax, Tunisia from 2005 and 2015. The aim of this retrospective study was to study the epidemiology, clinical, pathological, diagnostic, therapeutic and evolutive specificities of peritoneal tuberculosis in its various presentations.

Results: The total number of patients was 65. It was 15 men (23.1%) and 50 women (76.9%). The sex ratio was 0.3. The mean age at diagnosis was 40 years (15–79 years). No personal history of tuberculosis has been found in our series. A personal history of tuberculosis was found in 3 patients (4.6%). The general signs of tuberculin impregnation were frequently found (91%). The digestive functional signs that brought the patients to consult are: abdominal pain (87.7%), abdominal distension (87.5%), diarrhea (16.9%) and sub oclusive syndromes (4.6%). An abdominal mass was observed in only 4 patients (6.1%). Hepatomegaly and splenomegaly were noted in 2 cases for each. The intradermal reaction was positive in only 24% of patients. The research of BK in the ascitic fluid was systematically performed in all patients but returned negative in all cases. The quantiferon-TB Gold was performed in 3 patients only and returned positive. The mean level of CA 125 was 250.313/ml. Confirmation of diagnosis was determined by the histological analysis of peritoneal biopsies or the peritoneal biopsy pieces. The main operative findings (in patients with coeloscopy or exploratory laparotomy) were: Whist granulations (98%), adhesions (43.1%) and agglutinated loops (1.5%). The presence of tuberculous granuloma was observed in 52 patients (81%). The course of treatment was as follows: cure in 50 patients (80.6%), recurrence in 6 patients (9.6%), relapse in 2 patients and 3 patients were lost to follow-up. The mortality in our series was 0%.

Conclusion: Peritoneal tuberculosis raises diagnostic problems in the first place, because of its polymorphic and non-evocative clinical expression. Hence the value of carrying out radiological, endoscopic and histo-bacterialiological investigations to confirm the diagnosis before the evolution towards serious or even fatal forms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

S. Jardak, H. Kchir, N. Maamouri, H. Chabouni, N. Ben Mami
Tunis, Rabia b, Tunis/Tunisia

Contact E-mail Address: sondajardak1@gmail.com

Introduction: Tuberculosis is still a public health problem in Tunisia, which is a country of endemcity. The epidemiological situation of the disease is marked by the rise of the extrapulmonary forms especially abdominal tuberculosis.

Aims & Methods: The aim of this study was to analyze the epidemiologic, clinical, diagnostic, therapeutic and evolutive features of abdominal tuberculosis in a series of 150 patients. This was a retrospective and descriptive monocentric study of 150 cases of abdominal tuberculosis conducted from 2004 to 2014 in a tunisian center. Diagnosis of tuberculosis was based on histological evidence or otherwise on a bone of arguments.

Results: There were 150 patients enrolled. The mean age was 37.2 (17–72 years). Ninety seven (64.6%) were females. Symptoms were ascites 107 (71.3%), abdominal pain 28 (18.6%), weight loss and reduced appetite 80 (53.3%). Un tableau de tuberculose digestives (tissue obtained during surgery, colonoscopy, CT or ultrasound guided biopsy, laparoscopy and upper gastro intestinal endoscopy) in 122 patients (81%). The course of treatment was as follows: cure in 50 patients (80.6%), recurrence in 6 patients (9.6%), relapse in 2 patients and 3 patients were lost to follow-up. The mortality in our series was 0%.

Conclusion: Abdominal tuberculosis is one of the most common site of extra-pulmonary tuberculosis. No single test is adequate for diagnosis of abdominal tuberculosis in all patients. ABDM remains an ongoing diagnostic dilemma requiring a high index of clinical suspicion.

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References:
1. B. Chassaing1, A. T. Gewirtz2
1Institute For Biomedical Sciences, Georgia State University, Atlanta/United States of America
2Institute For Biomedical Sciences, Georgia State University, Atlanta/United States of America/GA

Contact E-mail Address: bcchassaing@gsu.edu

Introduction: Inability to maintain a stable and beneficial microbiota is associated with chronic gut inflammation, which classically manifests as colitis but may more commonly exist as low-grade inflammation that promotes metabolic syndrome. Alterations in microbiota and associated inflammation can originate from dysfunction in host proteins that manage microbiota, such as the flagellin receptor TRL5, and/or be promoted by exogenous factors that disturb host-microbiota interactions, such as the detergent-like dietary emulsifiers carboxy-methylcellulose (CMC) and polysorbate 80 [1, 2, 3]. That the complete absence of a microbiota (i.e. germ-free conditions) eliminates all evidence of inflammation in...
TLR3-deficient and emulsifier-treated mice demonstrate that these models of gut luminal biofilms and mucosa-dependent microbiota are associated with IBD, and that disruption of TLR3 and/or emulsifier consumption does not impact microbiota composition nor its ability to promote inflammation. Addition of AIEC to this ecosystem perturbs microbiota composition, increases levels of lipopolysaccharide (LPS), flagellin and phospholipid signal in gut inflammation and adiposity, suggesting that the phenotypes previously observed require disruption of complex microbiota.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Gower-Rousseau C, Sarter H, Savoye G, et al. Validation of the Revised Life Orientation Test (LOT-R) and IBD-DI, respectively. The association between sociodemographic, clinical and psychological factors that are associated with greater disability. Between August and October of 2016, patients with an established diagnosis of Crohn’s Disease (CD) or Ulcerative Colitis (UC) for at least 3 months and followed up at our outpatient clinic were invited to participate. Socio-demographic and clinical data were collected from electronic health record and interviews. Optimism and disability were evaluated by applying, personal interview, the IBD-DI developed from the Revised Life Orientation Test (LOT-R) and IBD-DI, respectively. The association between sociodemographic, clinical and psychological variables (optimism) and IBD-DI (scale 0–100, proportional to the reported disability) was determined by univariate and multivariate analysis.

Results: A total of 143 patients (70 DC and 73 UC; 50.3% females) with a mean age of 38 ± 13 years were included. Most (85.3%) was in clinical remission. The median IBD-DI-PT score was 7.9 ± 10.7, with a significant difference between DC and UC (p = 0.044). In univariate analysis, female gender, high level education, number of days off from work, articular manifestations, number of comorbidities, use of psychotropic drugs and pessimism (low LOT-R score) were significantly associated with higher disability (IBD-DI-PT score). In multivariate analysis, only female gender (β = 0.150), number of comorbidities (β = 0.186) and pessimism (β = 0.370) were significantly associated with higher disability. Clinical activity was associated with higher disability only for CD patients (β = 0.321).

Conclusion: IBD outpatients reported low levels disability associated with their disease, which can be explained by the high percentage of patients in clinical remission. Comorbidities and psychological factors (optimism) emerged as the main predictive factors of greater disability, reinforcing the importance of multidisciplinary approach to these patients. Clinical activity seems more important to CD than UC patients in terms of disability.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: This study aimed to characterized CD4+ and CD8+ T cells in the blood of patients with CD. The study was performed in individuals with CD (n = 46) and healthy controls (n = 38). Blood of healthy donors and patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kits. CD4+ and CD8+ T cells were collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kits. CD4+ and CD8+ T cells were evaluated. In relation to the group undergoing biological treatment and the group of healthy controls. Finally, a statistical difference (p < 0.001) was observed between the groups. The results were compared with the earlier published data: SRA Project - ERP001780 (96 samples from patients of control group, 44 samples from patients with ulcerative colitis) and SRA Project - SRP056002 (703 samples from patients with ulcerative colitis).

Results: More than 124 bacterial genuses were found in biopsies of patients with ulcerative colitis. The analyzed samples of patients with ulcerative colitis were split in two groups by using the PCoA analysis. The first group was characterized by decreasing the concentration of the Firmicutes type bacterias (p-value < 0.005) and increasing the concentration of Bacteroidetes type bacterias (p-value < 0.005). For the second group, it was founded decreasing of the concentration of the Actinobacteria type bacterias (p-value < 0.05), and increasing the concentration of Bacteroides vulgatus species bacterias concentration was revealed for one sample of the control group (normal number of reads in control samples was less than 0.0001 and reached 0.21 in samples of patients with ulcerative colitis). Additionally, the concentration of Escherichia coli species bacterias was increased in the 40 times for that sample (normal number of reads in control samples was 0.0003 in samples of patients with ulcerative colitis). Although, the predominance of Proteobacteria genus bacteria was not founded. The concentration of Fusobacterium prausnitzii species bacterias was decreases by three orders of the magnitude for samples from the first group (normalized number of reads in control samples reached 0, 2 and was less than 0, 06 in samples of patients with ulcerative colitis).

Conclusion: The conclusion the increase of the conditional-pathogenic mucosal microflora (a mostly Bacteroidetes type bacterias) was discovered, which playing a significant role in the development of ulcerative colitis and severe damage. Also, the deficiency of Fusobacterium prausnitzii species bacterias was discovered, which decrease resistance of mucosa to the conditional-pathogenic microflora.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: zatorski.h@gmail.com
P0963 EOSINOPHILS-ASSOCIATED CYTOKINES AS INFLAMMATORY BOWEL DISEASE BIOMARKERS

K. Neubauer1, M. Matusiewicz2, Ł. Bednarz-Misa2, S. Górska2, A. Gamian2, M. Krzyżek-Korpacka2
1Gastroenterology And Hepatology, Wrocław Medical University, Wrocław/ Poland
2Medical Biochemistry, Wrocław Medical University, Wrocław/Poland

Introduction: Pathogenesis of inflammatory bowel disease (IBD) is multifactorial and establishing diagnosis requires a performance of series of variable tests. The alternative, non-invasive, markers of IBD are intensively searched for. Eosinophils are acidophilic multifunctional granulocytes that remain outside the mainstream research on IBD. However, they are a rich source of cytokotoxic proteins, pro- and anti-inflammatory cytokines, chemokines and growth factors and are likely to contribute to both inflammatory and regenerative phases of the disease. Accordingly, peripheral eosinophils of IBD patients are primed and pre-activated. They display increased responsiveness, adhesiveness, migration, and degranulation and are characterized by up-regulated secretion of their mediators. Locally, increased number and activation of eosinophils have been repeatedly observed in areas of active inflammation. Despite the acknowledged contribution of eosinophils to the disease pathogenesis, available data on cytokines closely related to the development and activity of peripheral eosinophils in IBD patients are either scattered or non-existent.

Aims & Methods: Aim of the study was assessment of the circulating eosinophil-associated cytokines and growth factors as differential markers and indicators of mucosal healing in inflammatory bowel diseases.

Results: Population consisted of 277 individuals: 101 patients with Crohn’s disease (CD), 77 with ulcerative colitis, 16 with irritable bowel syndrome (IBS) and 83 healthy controls. The disease severity was assessed using the Crohn’s Disease Activity Index (CDAI) for CD and the Mayo Disease activity index (MDAI) for UC. The Mayo endoscopic score was applied to evaluate the severity of bowel inflammation in UC patients. The concentrations of eosinophil-associated cytokines and growth factors: eotaxin, GM-CSF, IFNγ, IL4, IL5, IL8, IL10Ra, IL12(p70), RANTES and TNFα were measured simultaneously in peripheral blood of the patients sera using Luminex xMAP® technology and referred to IBD activity and the levels of hsCRP. The suitability of eosinophil-associated cytokines and growth factors as differential markers and potential indicators of mucosal healing, individually and in multi-marker panels, was evaluated using ROC analysis.

Conclusion: The eosinophil-associated cytokines and growth factors are significantly and positively correlated with the degree of bowel inflammation, however, none of these cytokines reached the highest accuracy in differentiating IBS and IBD (91%), allowing for a correct classification of 93% of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0964 MACROPHAGE IL10 SIGNALING IS REQUIRED FOR THE THERAPEUTIC EFFECT OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE

P. J. Koelink1, F. M. Bloemendaal1, L. Westera1, A. B. van ’T Wout2, A. K. Gloudemans2, B. Li3, T. L. Geiger4, M. E. Wildenberg5, G. R. Van Den Brink5
1Janssen Center. Janssen Pharmaceutical Companies of Johnson & Johnson, Leiden/Netherlands
2Department Of Pathology, St. Jude Children’s Research Hospital, Memphis/United States of America
3Tygurat Institute, AMC Amsterdam, Amsterdam/Netherlands
4Dept. Of Gastroenterology, Academic Medisch Centrum, Amsterdam, Amsterdam/ Netherlands
5AMC Amsterdam, Amsterdam/Netherlands

Introduction: Interleukin(IL)10 is an important anti-inflammatory cytokine for the maintenance of gut homeostasis. Defects in the IL10 signaling pathway in macrophages leads to deregulation of regulatory (M2) type macrophages and subsequent inflammatory bowel disease (IBD). IBD patients are frequently successfully treated with anti-TNFα antibody therapy, although not all patients are responsive.

Aims & Methods: We determined the effect of anti-TNFα therapy in both IL10 knock-out (KO) mice and in the CD4+CD45Rb high T-cell transfer model of colitis. Macrophage populations were quantified using qPCR analysis for CD206 and F4/80 and flow cytometry, and cytokines, including IL10, were analyzed with ELISA.

Results: Colitis in the IL10 KO mice was completely resistant to anti-TNFα therapy, in sharp contrast to the colitis in SCID or Rag1 KO mice upon transfer with CD4+CD45Rb high T-cells, which was significantly reduced by anti-TNFα therapy. Successfull anti-TNFα therapy was accompanied by an increase of IL10 levels and an increase of regulatory (M2) type macrophages in the intestine. Blocking IL10 signaling, with an IL10 Receptor blocking antibody, diminished the therapeutic efficacy of anti-TNFα therapy, Anti-TNFα therapy was also unresponsive to anti-TNFα therapy upon receiving CD4+CD45Rb high T-cells. In these mice there was also no increase of intestinal M2 macrophages.

Conclusion: IL10 signaling in macrophages is pivotal for the therapeutic efficacy of anti-TNFα therapy in animal models for IBD. Defects in the IL10 pathway may also play a role in anti-TNFα non-responders which is subject of further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0965 LONG-TERM CONSEQUENCES OF ANTIBIOTIC THERAPY: ROLE OF SCFAS AND INTESTINAL BARRIER INTEGRITY

Y. Holota1, A. Bazan2, V. Steksa1, N. Dzubienco3, T. Dobychnyuk3, T. Chernyvska1, L. Zakordonets2, T. Serhiytska1, I. Kaji4, G. Tostianova2
1Laboratory Of Medical Microbiology, Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wroclaw/Poland
2Laboratory Of Microbial Pathology, Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wroclaw/Poland
3Laboratory Of Clinical Microbiology, Shevchenko National University of Kyiv, Kyiv/Ukraine
4Bogomoletz National Medical University, Kyiv/Ukraine

Introduction: Epidemiological studies revealed that antibiotics exposure increases the risk of inflammatory bowel diseases (IBD) development (Hviid, 2011, Shaw, 2011, Kromon, 2012). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011), the full consequences of which remain unknown.

Aims & Methods: Here we investigated long-term effects of antibiotic treatment on gut microbiota, short-chain fatty acids (SCFAs) production, transport & metabolism and mucosa functional state, surface mucus layer and epithelial barrier integrity. Male Wistar rats (n = 178, 140-160 g) were treated for 14 days with broad-spectrum antibiotic ceftriaxone (CT) (300 mg/kg, i.m.) or vehicle; euthanized in 1, 14 or 56 days after CT withdrawal. The fecal microbiota was analyzed by bacteriological culture methods; fecal SCFAs by gas chromatography; colonic localization and levels of FFAs & FFA3 receptors and MCT1, MCT4 & SMCT1 transporters of SCFAs – by immunohistochemistry; levels of FFA2, FFA3, ERK1/2; p38, HIFα/α proteins in colon mucosa – by Western blot analysis; mucosal macrophage (macrophage marker, 91%), allowing for a correct classification of 87% of patients. The concentrations of HIFα, GM-CSF, IFNγ, and IL12(p70) were significantly and positively correlated with the degree of bowel inflammation, expressed as Mayo endoscopic score. Of these, a drop in GM-CSF had superior diagnostic accuracy. The contribution of mucosal healing as differential diagnosis of IBD and aid in monitoring of mucosal healing.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: julieagolota@gmail.com

Results: CF injection leads to compositional changes of fecal microbiota which progress over time. In 56 days, we found increased level of Clostridium spp, E. coli, conditionally pathogenic and hemolytic bacteria. Levels of Bifidobacterium...
P0966 THE ROLE OF TLR2-MEDIATED TREG/TH17 IMBALANCE IN THE PATHOGENESIS OF UC

Y.F. Xie, J.Y. Hao, Y.H. Pang, Y.H. Ma, Z.R. Li, X.Q. He, X.J. Liu
1Gastroenterology Department, Beijing Chaoyang Hospital, Capital Medical University, Beijing, China
2Department Of Medicine, Beijing Haidian Maternal and Child Health Hospital, Beijing, China

Contact E-mail Address: lxj2012@126.com


Results: Compared with group A, CD3⁺ CD8⁺ CD25⁺ FoxP3⁺Treg cells were decreased 2.9-, 13.8-,

and total SCFAs were decreased 2.9-, 13.8-,

0.05 respectively). Moreover, declined FrIII and increased epithelial permeability that might increase susceptibility to IBD development.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0968 CD4⁺ T CELLS OF IBD PATIENTS ARE CHARACTERIZED BY AN INCREASED EXPRESSION OF THE NUCLEOTIDE RECEPTOR P2Y2, WHICH IMPACTS RELEVANTLY ON PRO-INFLAMMATORY SIGNALING SCAPES

J. Panteleeiev-Ivles1, S. Zundler1, I. Aretya1, M. F. Neuhaus1, I. Aretya1
1Medical Clinic 1, University of Erlangen-Nuremberg, Erlangen, Germany

Contact E-mail Address: imke.atreya@uk-erlangen.de

Introduction: Chronic and acute inﬂammation is often associated with an upregulation of extracellular UTP and ATP nucleotides, which are able to interact with various cell types via purinergic G protein-coupled P2 receptors. Interestingly, former studies already described an increased expression of the ATP/UTP receptor subtype P2Y2 (P2Y2R) in the colonic tissue of IBD patients (Shannon diversity index, p < 0.01 healthy vs active UC, p < 0.05 active vs remission UC, 1-way ANOVA post-hoc = Tukey). Active UC patients also had lower bacterial diversity compared to remission UC patients and healthy twins (Shannon diversity index, p < 0.01 healthy vs active UC, p < 0.05 active vs remission UC).

We found that active CD patients had a higher proportion of Clostridium hylemonae and Lactobacillus delbrueckii compared to healthy twins, and a lower proportion of Faecalibacterium prausnitzii compared to healthy twins (p < 0.05). We found that active UC patients had a lower proportion of Allostipes spp. compared to their healthy twins and UC patients in remission (p < 0.05).

Conclusion: This study confirms previous findings showing decreased diversity in IBD patients and changes in some bacterial taxa, however our study is the first to show decreases in Allostipes spp. in active UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

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subsequently analyzed for STAT3 signaling (western blot), NFκB signaling (Western Blot Transcription Factor Assay, western blot) and cytokine secretion (ELISA).

Results: Peripheral blood CD4+ T cells from IBD patients could be characterized by a significantly increased P2Y2R expression compared to healthy controls, whereas the expression levels of the P2Y4 receptor subtype turned out to be comparable between both groups. Further subdividing the group of included IBD patients into Crohn’s disease and ulcerative colitis patients, we could not observe a significant difference in the P2Y2R levels between both disease entities. Interestingly, the increased P2Y2R expression in the lymphocyte compartment of IBD patients seemed to be limited to CD4+ T cells, as CD8+ T cells of these patients even showed decreased P2Y2R levels. Regarding potential regulators of P2Y2R expression in the context of IBD, our data identified IL-6 and TGF-beta as being involved in P2Y2R expression in human CD4+ T cells. Interestingly, a high extracellular UTP levels resulted in a decreased expression of the TGF-beta1 receptor on CD4+ T cells, implicating a potential negative feedback loop in which P2Y2R signaling might inhibit TGF-beta1 induced P2Y2R expression or cause a decreased impact of P2Y2R on the pro-inflammatory potential of human lymphocytes, our data indicate that the selective P2Y2R agonist 2-Thio-UTP is able mediate NFκB as well as STAT3 activation and to induce secretion of the pro-inflammatory cytokines IL-6 and IL-17 in stimulated human monocytes.

Conclusion: The observed increased expression of P2Y2R in CD4+ T cells of IBD patients together with the demonstrated pro-inflammatory effects of P2Y2R signaling in human T cells markedly strengthen the role of P2Y2R as a promising molecular target in IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

PO969 HIF-1A STABILIZATION THROUGH HYDROXYLASE INHIBITION AMELIORATES DSS-INDUCED COLITIS AND INDUCES AUTOPHAGY
J. Cosin Roger1, S. Simmen1, H. Melhem1, K. Atroli1, I. Frey-Wagner1, M. Hausmannn1, C. De Valière1, M. R. Spalinger1, P. Spielmann2, R. H. Wenger2, J. Zeitz1, S. Vavricka1, G. Rogler2, P. A. Ruiz3
1Gastroenterology and Hepatology, University of Zurich, Zurich, Switzerland
2Institute Of Physiology, University Of Zurich, Zurich/Switzerland

Contact E-mail Address: jesus.cosin@uv.es

Introduction: Environmental hypoxia has been increasingly recognized as an important environmental factor associated with Inflammatory Bowel Disease (IBD). Hypoxia allows the stabilization of hypoxia inducible factor (HIF) complexes and has been linked to the activation of autophagy. HIF-1α is induced in the inflamed mucosa from IBD patients and mouse models of colitis, but its role in intestinal inflammation is still controversial since both, positive and negative effects have been reported.

Aims & Methods: We aim to elucidate the effects of HIF-1α stabilization in autophagy and the development of intestinal inflammation in a murine model of colitis. Female C57BL/6 J mice between 8–10 weeks of age were exposed to 2% dimethyloxaloylglycine (DMOG) intraperitoneally every second day. Mice were subjected to normoxia (21% O2) or hypoxia (0.2% O2) for 24 h in the presence or absence of 40μM DMOG. Colon tissue was collected 12 hours after treatment, RNA was extracted and real-time qPCR was performed. Western blot analysis was also performed to examine the expression of autophagy-related proteins. Immunohistochemistry was performed to analyze the histological damage. Expression of TNF, IL-6, IL-1β and Nrf2/C11 were quantified by colon infiltrating leukocytes and the release of CXC chemokine ligand 8 by UDP.

Results: DMOG administration induced a significant lower reduction of body weight in DSS-treated mice compared to DSS-treated mice administered with vehicle. Furthermore, mice administered with DMOG presented less infiltration of TNF, IL-6, IL-1β and Nrf2/C11 compared to control treated mice, with a significant reduction in the MECS and histological scores showing intact crypts in large areas without extensive infiltration or thickening of the mucosa. The mRNA expression of the pro-inflammatory factors TNF, IL-6, IL-1β and Nrf2/C11 was significantly reduced in mice treated with DMOG compared to vehicle-treated mice. At a protein level, DMOG administration reduced p-NFκB and NLRP3 expression. DMOG-treated mice also showed activation of autophagy, as evidenced by a decrease in p-mTOR and p62 expression and increase of LC3II. In vitro, hypoxia induced a significant accumulation of lysosomes as a reduction in p-Beclin1. The late-stage autophagy inhibitor chloroquine reverted this effect indicating that was autophagy-mediated. Finally, ChIP analysis revealed that hypoxia induced the binding of HIF-1α to the promoter of p62.

Conclusion: Our results indicate that DMOG-mediated HIF-1α stabilization ameliorates DSS-induced colitis, activates autophagy and significantly reduces inflammatory gene expression and signaling. In cultured intestinal epithelial cells hypoxia triggers lysosomal formation and HIF-1α binds to the promoter of p62, thereby promoting autophagy.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO970 PROTECTIVE EFFECT AND ACTION MECHANISM OF APOCYNN IN IBD MURINE MODEL
S. Nam1, S. Kim2, W. Chun3, J. M. Park1, S.C. Park1, D.H. Choi1, C. D. Kang1, S.J. Lee1
1Department Of Internal Medicine, Kangwon National University School of Medicine, Chuncheon-si, Gangwon-do/Korea, Republic of
2Department Of Pharmacology, Moksung University College Of Medicine, Kangwon National University, Chuncheon-si/Korea, Republic of

Contact E-mail Address: pinetrees@daum.net

Introduction: There are several medical treatment options for inflammatory bowel disease (IBD), but all have drawback due to their significant adverse effects. Many new drugs are being developed for more safe and effective treatment. Apocynin is a chemical 4-hydroxy-3-methoxyacetophenone which is an inhibitor of NADPH oxidase and has shown promising effect in various chronic inflammatory diseases such as asthma and atherosclerosis. Due to its anti-inflammatory effect and safety profile, apocynin can be new candidate for the treatment of IBD.

Aims & Methods: In this study, we aimed to investigate effect of apocynin on colonic inflammation and the action mechanism using chemically-induced colitis mouse model. We used dextran sulfate sodium (DSS)-induced colitis model. 8 weeks old male BALB/c mice were divided into four groups (each group, n = 6): control, DSS only, DSS with apocynin, and DSS with sulfasalazine. Water (control and DSS group), apocynin (400 mg/kg) and sulfasalazine (150 mg/kg) were administered by oral route using sonde during 7 days. For western blot analysis, colon was lysed and proteins were extracted. The following antibodies were used: iNOS (BD Biosciences), COX2, Nrf2 (Santa Cruz Biotechnology Inc), MCP-1, TNF-α, p-NFκB, HO-1 (Abcam), and β-actin (Sigma).

Results: Protective effect of apocynin was evident by weight change and colon length. Histologic analysis also showed improved erosion and decreased neutrophilic infiltration in apocynin group compared to DSS group. In colon tissue, several pro-inflammatory enzymes and cytokines were decreased by apocynin. Apocynin also activated anti-inflammatory pathway by inducing activation of Nrf2 and production of he oxygenase-1 (HO-1).

Conclusion: Apocynin, a NADPH-oxidase inhibitor, showed significant anti-inflammatory effect in DSS induced colitis model. Considering its good safety profile, this molecule can be a new candidate for the treatment of IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO971 THE USE OF RAPID EVAPORATIVE IONIZATION MASS SPECTROSCOPY (REIMS) IN FAECAL SAMPLES TO IDENTIFY INFLAMMATORY BOWEL DISEASE
1Division Of Digestive Diseases, Department Of Surgery And Cancer, Imperial College London, London/United Kingdom
2Division Of Computational And Systems Medicine, Department Of Surgery And Cancer, Imperial College London, London/United Kingdom
3Gastroenterology, Imperial College Healthcare NHS Trust, London/United Kingdom
4Gastroenterology, Imperial College Healthcare NHS Trust, London/United Kingdom

Contact E-mail Address: s.powles@imperial.ac.uk

Introduction: Fecal metabolic profiling has been shown to distinguish Inflammatory Bowel Disease (IBD) from healthy controls (HC), specifically with depletion of gut-associated short chained fatty acids (SCFA) as the predominant feature separating these groups (1). Previous and current studies have used proton nuclear magnetic resonance (1H NMR) spectroscopy or mass spectrometry (MS) to measure faecal metabolites to evaluate the metabolic, microbiomic and clinical response of IBD patients to different treatments. Both techniques require a significant amount of sample pre-processing. Rapid Evaporative Ionization Mass Spectrometry (REIMS) is a relatively new technology which applies a laser to a biological sample, and the resulting vapour, containing gas phase ions of metabolites and structural lipids, is analysed by a mass spectrometer (2). Unprocessed faecal samples can be rapidly assessed using this technique to obtain lipidomic spectral profiles (2). To our knowledge this is the first study that has used REIMS to investigate whether IBD patients can be distinguished from healthy controls using faecal samples.

Aims & Methods: Unprocessed faecal samples from 109 IBD patients and 46 healthy controls were analysed using Rapid Evaporative Ionization Mass Spectrometry (REIMS). Clinical and dietary data were collected, and patients with significant other co-morbidities were excluded. Partial least squares discriminative analysis (PLS-DA) was performed to examine whether there was differences in the metabolic data between patients with Inflammatory Bowel Disease and healthy controls. Further samples were then carried out including examining whether ulcerative colitis could be distinguished from Crohn’s disease.
**Participant characteristics**

<table>
<thead>
<tr>
<th></th>
<th>IBD</th>
<th>Healthy Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number (%)</td>
<td>109</td>
<td>46</td>
</tr>
<tr>
<td>Age (mean)</td>
<td>48</td>
<td>55</td>
</tr>
<tr>
<td>Male</td>
<td>51 (47%)</td>
<td>19 (41%)</td>
</tr>
<tr>
<td>Caucasian</td>
<td>63 (58%)</td>
<td>21 (46%)</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td>62 (57%)</td>
<td>-</td>
</tr>
<tr>
<td>High IBD (≥ 30 kg/m²)</td>
<td>14 (15%)</td>
<td>10 (21%)</td>
</tr>
</tbody>
</table>

**Results:** Supervised multivariate analysis (PLS-DA) was able to separate faecal samples of IBD patients from healthy controls, and sub-analysis showed a stronger separation of Crohn’s disease patients from healthy controls (Q2 quality assurance of 0.2) compared to UC from healthy controls. A model comparing Crohn’s disease from UC was able to separate the two groups.

**Conclusion:** This early preliminary analysis shows that there is a degree of separation between samples of IBD patients compared to healthy control. This suggests that REIMS analysis has good potential as a research tool in IBD metabolic studies, and importantly in the current ongoing longitudinal IBD research. Further analysis will include identifying the principal metabolites that separate these groups.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**P0972 THE PATHOGENIC MECHANISM OF ARYL HYDROCARBON RECEPTOR MEDIATED ABNORMAL DIFFERENTIATION OF INTESTINAL ILC3/ILC1 IN CROHN’S DISEASE**

X. Zhao, H. Zhang

**Department Of Gastroenterology, Jiangsu Province Hospital and Nanjing Medical University, Nanjing/China**

**Contact E-mail Address:** zhaoxj9178@163.com

**Introduction:** The abnormal differentiation of intestinal innate lymphoid cells (ILC3 and ILC1) exist in autoimmune disease. ILC3 decreased and ILC1 increased in Crohn’s disease (CD) patients, suggesting that CD patients have abnormal intestinal ILC3/ILC1 alteration.

**Aims & Methods:** The present study investigated the aberrant colonic mucosal ILC3/ILC1 in active CD patients and 2, 4, 6-trinitrobenzene sulfonic acid (TNBS)-induced colitis mice. The expressions of aryl hydrocarbon receptor (AhR) in colon of acute and quiescent CD patients were detected by western blot and immunofluorescence. The ILC3/ILC1 were investigated in CD patients and 2, 4, 6-trinitrobenzene sulfonic acid (TNBS)-induced colitis mice (AhR−/−, AhR+/−).

**Results:** Compared to quiescent CD patients, the expression of aryl hydrocarbon receptor (AhR) in the intestinal tissue in active CD patients was decreased. Meanwhile, the number of ILC3 in active CD patients and AhR knockout mice was decreased while ILC1 increased. The intestinal inflammation in AhR knockout mice given TNBS was more severe than wild-type mice.

**Conclusion:** These findings suggest that AhR may mediate abnormal differentiation of ILC3/ILC1, and the production of inflammatory cytokines, finally, promotes the pathogenesis of CD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**P0973 PREVALENCE AND GENETIC DIFFERENCES IN ADHESION-RELATED GENES AMONG CONMENSAL AND ADHERENT-INVASIVE E. COLI STRAINS**

C. Campurbi-Font, A. Segú-Roig, N. Maeso-Sánchez, M. López-Siles, M. Martínez-Medina

**Biography Department, Universitat de Girona, Girona/Spain**

**Contact E-mail Address:** c.campurbi@gmail.com

**Introduction:** Long polar fimbiae (FimA), FimH adhesin and ChiA chitinase have been related with adherent-invasive *E. coli* (AIEC) pathogenesis. Controversial results have been found regarding the prevalence of FimA in AIEC vs non-AIEC (1, 2). Some FimH amino acid variants were reported to be specific for AIEC (3) whereas other variants were associated with phylogroup disease origin of the strains (4). Differences in the ChiA sequence were reported between LF82 and K-12 strains but this gene has not been studied in other AIEC yet (5).

**Aims & Methods:** The prevalence of FimA and the distribution of fimH and chiA variants in a collection of AIEC and non-AIEC from different disease origins. Crohn’s disease (CD), ulcerative colitis (UC) and colorectal cancer (CRC)-were studied with the purpose to determine if these genes could be used as molecular markers for AIEC identification and disease diagnosis. In a collection of 7 AIEC and 29 non-AIEC isolated from CD, UC, CRC patients and controls, fimA gene was PCR-amplified to assess its presence and fimH and chiA genes were sequenced to identify point mutations. For comparison FimH and ChiA protein sequences, UPGMA phylogenetic tree and allele identification was performed using MEGA5. The genetic differences were annotated using as reference the K-12 strain. Then, they were analysed statistically according to AIEC pathotype, phylogroup, and disease origin by the 1, 2 test and non-parametric tests were used to evaluate amino acid variability regarding the adhesion and invasion indices.

**Results:** Low gene frequency for fimA141 and fimA154 was reported (11.7% and 16.7% respectively). FimA154 was only found in strains from A (22%) and B2 phylogroup (86%) and no relation with AIEC phenotype or disease was observed. Two main clusters of FimH were obtained by phylogenetic analysis, classifying the strains according to the presence of S78N mutation. S78N variants were characteristic from strains of B2 and D phylogroups as none of the A or B1 strains presented it. Despite statistical significance was not reached, the strains with S78N, V163A, R166H mutations showed the highest adhesiveness. Regarding ChiA, two main clusters defined by the presence or absence of an insertion in 312–314 residues were obtained. None of the five previously mutated found in LF82 strain were associated with AIEC strains, whereas the V415A variant was found specifically in AIEC (20%) (p = 0.049). Of note, among the strains harbouring the 312–314 insertion, a subcluster that shared identical amino acid sequence included the LF82 strain and the 44% of AIEC strains but only the 10% of the non-AIEC (p = 0.019). No differences between FimH/ChiA variants and origin of isolation was observed.

**Conclusion:** In contrast with other studies, no relation of fimA presence nor in FimH mutations with AIEC pathotype or disease was observed. Nonetheless, a variant in ChiA sequence more frequently found in AIEC isolates was reported, being an interesting signature sequence for the detection of at least a subgroup of AIEC strains. Further confirmation in a wider strain collection would be required.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**P0974 DISTINCT GUT MICROBIOTA PROFILES IN PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS AND ULCERATIVE COLITIS**

L. Bajer1, M. Kverka2, M. Kostovci2, P. Macinka1, J. Dvorák2, Z. Stelhikova2, J. Brezina2, J. Spica1, P. Drastich1

1 Department Of Hepato-gastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
2 Institute Of Microbiology of the Czech Academy Of Sciences, Prague/Czech Republic
3 Department Of Genetics And Microbiology, Charles University in Prague, Faculty Of Science, Prague/Czech Republic
4 Hepato-gastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

**Contact E-mail Address:** lukasbajer1@gmail.com

**Introduction:** Primary sclerosing cholangitis (PSC) is a progressive disorder of biliary tree which can lead to end-stage liver disease, liver transplantation or even death.1 Colitis accompanying PSC is considered to be a phenotype of IBD (inflammatory bowel disease) distinct from ulcerative colitis (UC) and is often referred to as *PSC-IBD* 3.

**Aims & Methods:** Our aim was to compare the gut bacterial microbiota of patients with PSC and UC. Stool samples were prospectively collected and relevant clinical data obtained from 106 study participants, 43 PSC patients with (n = 32) or without (n = 11) concomitant IBD, 32 UC patients, and 31 healthy controls (HC). Sequencing of the 16S rRNA gene including the V3 and V4 regions was performed on Illumina MiSeq platform to cover low taxonomic
levels. Data were further processed in QIIME employing MoAInL and LEfSe to derive output data.

Results: Microbial profiles in both PSC and UC were characterized by low bacterial diversity and significant change in global microbial composition. Rothia, Enterococcus, Streptococcus, Veillonella, and three other genera were markedly overrepresented in PSC regardless of concomitant IBD. Rothia, Veillonella and Streptococcus were tracked to the species level to identify Rothia mucilaginosa, Streptococcus infantis, S. alactolyticus, and S. equi along with Veillonella parvula and V. dispar. PSC was further characterized by decreased abundance of Actinomyces, Prevotella copri. Decrease in genus Phascolarctobacterium was linked to presence of colonic inflammation regardless of IBD phenotype. Akkermansia muciniphila, Butyriviridales pulaeacorum and Clostridium clostrum were decreased in UC along with genus Roseburia. Unclassified Actinomycetes species were markedly increased in overlap syndrome of autoimmune hepatitis (AHI) and PSC. Low levels of serum albumin were significantly correlated with enrichment of order Actinomycetales. Conclusion: PSC was characterized by microbial features independent of concomitant IBD. The overrepresented taxa clearly distinguished IBD phenotypes (PSC and UC) as well as PSC from PSC/AHI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0977 EFFECTS OF TIME ON URINARY METABOLIC SIGNATURES IN INFLAMMATORY BOWEL DISEASE
1Gastroenterology, Imperial College Healthcare NHS Trust, London/United Kingdom
2Division Of Digestive Diseases. Department Of Surgery And Cancer, Imperial College London, London/United Kingdom
3Division Of Computational And Systems Medicine. Department Of Surgery And Cancer, Imperial College London, London/United Kingdom

Contact E-mail Address: l.hicks@imperial.ac.uk

Introduction: Metabolic profiling (metabonomics) has been proposed as a novel clinical tool in IBD to predict development of complex disease, or for longitudinal non-invasive monitoring of activity and/or response to drug treatment. Urinary metabonomics can distinguish IBD from healthy controls(1) but no studies to date have assessed the stability of these discriminatory profiles over time. Reports in healthy adult populations have shown that metabolic signatures are largely unchanged over periods of up to 3 years(2), but signals are influenced by multiple external factors including medication and surgery, so how these changes in IBD is unknown. The aim of this study was to compare baseline urinary metabolic profiles of IBD patients with a repeated sample several years later to assess similarity, and also to test if any clinical outcomes could be retrospectively predicted from the baseline sample.

Aims & Methods: Two urine samples from 39 IBD patients (22 Crohn’s disease (CD) and 17 ulcerative colitis (UC)) were collected - one at baseline and one several years later (range 7–9 yrs). These were analysed by 1H NMR spectroscopy. Disease progression was defined as initiation of immunosuppression or biologics, progression of disease location, or disease remission. Principal components analysis was used to visualise the difference between the two time points within the cohort. Orthogonal partial least squares discriminant analysis (OPLS-DA) was used to identify if the metabolic signatures could be used to predict adverse clinical outcomes in the patients studied.

Results: 57% of CD patients and 17% of UC patients had clinical progression at follow-up sampling. PCA showed clustering of sample pairs from the baseline and several years later in most individuals, suggesting intra-individual similarity across the time period. OPLS-DA showed no statistical models could be built to predict combined poor outcome based on the initial urinary metabolic profile (p=0.26). However, the small subgroup who went on to require surgical intervention could be separated from the cohort in a model (Q2=0.015; p=0.03) constructed on their baseline profiles and follow-up samples.

Conclusion: The metabolic profile of IBD in an individual appears relatively stable over a significant time period despite a variety of clinical outcomes and interventions. Variations in longitudinal measurements appear to be subtle, and thus replication of this approach for disease monitoring using NMR spectroscopy could prove difficult. These results may suggest that metabolic profiling could be exploited to predict a higher risk of requiring future surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0978 BACTERIAL TRANSLLOCATION CONTINUES IN ULCERATIVE COLITIS DESPITE MUCOSAL HEALING AND SUCCESSFUL CLINICAL REMISSION
A. Steel
Gastroenterology, Royal Liverpool & Broadgreen University Hospital, Liverpool/United Kingdom

Contact E-mail Address: alan.steel@rlbhuh.nhs.uk

Introduction: Mucosal healing is considered to be the hallmark of successful therapy in Ulcerative Colitis, and has become increasingly used as a target of therapeutic interventions. Loss of mucosal integrity and associated translocation of bacterial components across the mucosal epithelial barrier occurs in Ulcerative Colitis and persistence of a structural mucosal defect is a characteristic of chronic inflammatory bowel disease. Mucosal healing can be defined by clinical, histological and endoscopic parameters, but no clear definition of the required extent of mucosal healing exists, nor is there agreement on how functional mucosal healing is defined.

Aims & Methods: To define the extent and associations of mucosal healing in patients with Ulcerative Colitis, and the relationship with bacterial translocation and clinical remission. Patients with established diagnosis of Ulcerative Colitis undergoing endoscopic evaluation were recruited to the study (Ethics: South West London REC2 10/H0706/26). Clinical history and long-term follow-up data were recorded. Blood and mucosal samples were processed as mononuclear cells. Healthy controls recruited from cohort undergoing routine lower gastrointestinal investigations without positive findings. Flow cytometry characterisation of cells by cell surface CD45RO, CD27, CD4, CD154, CD48 and CD161 and cytokine expression after stimulation with enterotoxin B stimulation by IL-2, IL-17a, IL-22, TNF, IL-17f and IFNγ. Immunohistochemistry to define tight junction apical epithelial expression (Claudin 1, Claudin 4 and Ocludin) and lipopolysaccharide within the lamina propria. Peripheral blood markers of bacterial translocation: bacterial DNA (16fDNA), lipopolysaccharide binding protein (LBP), soluble CD14 and plasma lipopolysaccharide. Statistical analysis by Mann Whitney or Kruskall Wallis analysis with Dunn’s post test correction, or by Spearman rho correlation.

References

A. Steel Gastroenterology, Royal Liverpool & Broadgreen University Hospital, Liverpool/United Kingdom

Contact E-mail Address: alan.steel@rlbhuh.nhs.uk

Introduction: Mucosal healing is considered to be the hallmark of successful therapy in Ulcerative Colitis, and has become increasingly used as a target of therapeutic interventions. Loss of mucosal integrity and associated translocation of bacterial components across the mucosal epithelial barrier occurs in Ulcerative Colitis and persistence of a structural mucosal defect is a characteristic of chronic inflammatory bowel disease. Mucosal healing can be defined by clinical, histological and endoscopic parameters, but no clear definition of the required extent of mucosal healing exists, nor is there agreement on how functional mucosal healing is defined.

Aims & Methods: To define the extent and associations of mucosal healing in patients with Ulcerative Colitis, and the relationship with bacterial translocation and clinical remission. Patients with established diagnosis of Ulcerative Colitis undergoing endoscopic evaluation were recruited to the study (Ethics: South West London REC2 10/H0706/26). Clinical history and long-term follow-up data were recorded. Blood and mucosal samples were processed as mononuclear cells. Healthy controls recruited from cohort undergoing routine lower gastrointestinal investigations without positive findings. Flow cytometry characterisation of cells by cell surface CD45RO, CD27, CD4, CD154, CD48 and CD161 and cytokine expression after stimulation with enterotoxin B stimulation by IL-2, IL-17a, IL-22, TNF, IL-17f and IFNγ. Immunohistochemistry to define tight junction apical epithelial expression (Claudin 1, Claudin 4 and Ocludin) and lipopolysaccharide within the lamina propria. Peripheral blood markers of bacterial translocation: bacterial DNA (16fDNA), lipopolysaccharide binding protein (LBP), soluble CD14 and plasma lipopolysaccharide. Statistical analysis by Mann Whitney or Kruskall Wallis analysis with Dunn’s post test correction, or by Spearman rho correlation.

References
Results: 28 patients with Ulcerative Colitis, duration of disease 4 months to 31 years, and 22 Healthy control participants were recruited for the study. Half of the patients had active disease as assessed by Ulcerative Colitis Severity Score. Disease severity positively correlated with frequency of mucosal Th17 (CD4+IL-17+T) and IL-17f. Breaches in tight junction protein expression were greater in healthy: Claudin 1 (p = 0.001), Claudin 4 (p = 0.006) and occludin (p = 0.03). The serum marker of bacterial translocation, lipopolysaccharide binding protein (LBP) was elevated in UC compared to controls (p = 0.0078) and was positively correlated with breaches of Claudin 1 and Occludin (p = 0.018 and p = 0.012 respectively) Staining colon biopsies for the presence of lipopolysaccharide in the lamina propria demonstrated positive findings in healthy controls, supported by data from 16s rDNA analysis of blood from healthy controls. In the Ulcerative Colitis cohort in clinical remission the absence of lipopolysaccharide in the lamina propria was associated with elevated levels of LBP and increased breaches of Occludin (p = 0.0022).

Conclusion: Breaches of tight junction proteins in the colon of patients with stable clinical remission can be detected and are associated with perturbations of mucosal immunological function and markers of bacterial translocation. Lipopolysaccharide presence in the lamina propria of patients in remission appears to be associated with less tight junction breaches and reduced local and systemic evidence of bacterial translocation. These findings require further study, specifically to examine the role of mucosal immune tolerance to lipopolysaccharide and other bacterial cell products that may be present in the healed mucosa of ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Discussion

P0979 EFFECT OF FIBER AND FAT CONSUMPTION ON DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

I. Pefkianaki, I. Mouzas, I. Koutroubakis
School Of Medicine, University of Crete, Heraklion/Greece

Contact E-mail Address: medp2011775@med.uoc.gr

Introduction: Diet may influence intestinal inflammation via various pathways but the evidence regarding the role of fiber or fat intake in patients with inflammatory bowel disease (IBD) is controversial.

Aims & Methods: The aim of this study was to investigate the association between dietary fiber or total fat intake and disease activity or quality of life in Greek IBD patients. We prospectively collected food frequency questionnaires (FFQ) from consecutive IBD patients at outpatient visits. The European Prospective Investigation into Cancer and Nutrition (EPIC) Study FFQ for Greek population with the MAFF photographic food atlas were used in order to collect information for dietary habits of IBD patients. Moreover, disease activity and quality of life were assessed with the disease activity index (SCAI) (for ulcerative colitis) (UC) and the Harvey-Bradshaw index (HBI) for Crohn’s disease (CD)) as well as quality of life using the short inflammatory bowel disease questionnaire (SIBDOQ) were evaluated. Patients’ demographic, clinical characteristics, nutritional status, laboratory data (C reactive protein (CRP), haemoglobin, erythrocyte sedimentation rate (ESR), platelets and albumin) and treatment data were recorded and analysed for all participants.

Results: A total of 141 consecutive IBD patients (53 UC, 88 CD, mean age 47.2±16.1 years, 84 males 57 females, BMI 26.7±5.3) were included. Patients’ mean daily fiber intake was 21.8 g (IQR 13.8–34.6) and mean daily fat consumption with abnormal CRP, increased ESR, platelets and albumin] and treatment data were recorded and analysed.[12] Data 


[14] Division Of Gastroenterology And Hepatology, University Hospital Center Zagreb, University of Zagreb School of Medicine, Zagreb/Croatia

[15] Soroka Hospital, Beer Sheva/Israel

[16] Medicine, Mater Dei Hospital, Midea/Malta

[17] 1st Department Of Medicine, Semmelweis University Faculty of Medicine 1st Dept. of Medicine - 1st Department of Medicine, Semmel, Budapest/Hungary

[18] Department Of Gastroenterology And Alimentary Tract Surgery, Tampere University Hospital, Tampere/Finnland

[19] Gastroenterology Department, OU Careggi Regional Referral Center for Inflammatory Bowel Disease, Florence/Italy

[20] Medical Department, The National Hospital of the Faroe Islands, Torshavn/

[21] Former Islands

[22] St. Mark’s Hospital, Imperial College London, London/United Kingdom

[23] Department Of Gastroenterology, Tartu University Hospital, Tartu/Estonia

[24] Gastroenterology Unit, Epimad Registry, CHU Amiens Sud, Avenue Laennec-Salouel, Amiens University Hospital, Amiens/France

[25] Department Of Hepatology, And Gastroenterology, Aarhus University Hospital, Aarhus/Denmark

[26] 1st Division Of Internal Medicine And Hepato-gastroenterology Unit, University Hospital, Joanne/Greece

[27] Department Of Medicine, Herning Central Hospital, Herning/Denmark

[28] IBD Clinical And Research Center, ISCARE I.F.V.s.s., Prague/Czech Republic

[29] Gastroenterology Department, Slagelse Hospital, Slagelse/Denmark

[30] Department Of Gastroenterology And Digestive Endoscopy, Morgagni Hospital, Forli/Italy

[31] American Gastroenterology Center, Nicosia/Cyprus

[32] Instituto de Investigación Biomédica, Xerencia de Gestión Integrala de Vigo, Vigo/Spain

[33] Lithuanian University of Health Sciences Inst. for Digestive Research, Kaunas/Lithuania

[34] Dept. Of Gastroenterology, Faculty Of Medicine And Health, Örebro University, Örebro/Sweden

[35] Herlev University Hospital, Herlev/Denmark

[36] Gastroenterology, Hepatology, University of Copenhagen, North Zealand Hospital - Gastroenterology, Hepatology, University of Copenhagen, Frederiksund/Denmark

Contact E-mail Address: bursich@gmail.com

Introduction: Crohn’s disease (CD) is a progressive disease that over time can lead to the development of complications such as strictures or internal penetrating disease that will ultimately lead to surgery. Only few population-based studies from the biological era and widespread use of immunomodulators have investigated the change in disease behaviour and subsequent risk of surgery in CD.

Aims & Methods: The EpiCom-cohort is a population-based cohort of unselected patients with inflammatory bowel disease diagnosed in 2010 in Eastern and Western European centres. Patients were followed prospectively for five years and clinical data were captured throughout the follow-up period. Disease behaviour was defined according the Montreal classification as B1: non-stricturing, non-penetrating, B2: stricturing; B3: penetrating based on endoscopy, cross-sectional imaging or surgery. The risk of surgical resection was analysed by Cox regression analyses using the proportional hazard assumption including multiple covariates (age, gender, disease location, diagnostic delay, smoking status, change in behaviour, geographic region and treatment with biologics within 6 months from diagnosis).

Results: A total of 488 incident CD patients were included in the study, of which 347 (71%) had B1. A total of 141 (29%) patients had complicated CD at diagnosis. After 3 years’ follow-up, this number increased to 190 (39%) (Table 1). Of patients diagnosed with B1, 35 (10%) progressed to B2 while 14 (4%) progressed to B3 after a median of 21 months (range: 0–62). The proportion of B1 patients changing behaviour was highest during the 1st year of disease (5%) but stable afterwards.

Conclusion: Changes in disease behaviour were highest during the first year of disease (5%) but stable afterwards. Of patients with B1 as initial behaviour a total of 34 (22%) patients had a resection. Of patients with B1, 35 (10%) progressed to B2 while 14 (4%) progressed to B3 after a median of 21 months (range: 0–62). The proportion of B1 patients changing behaviour was highest during the 1st year of disease (5%) but stable afterwards. Of patients with B1 as initial behaviour a total of 34 (22%) patients had a resection. Of patients with B1, 35 (10%) progressed to B2 while 14 (4%) progressed to B3 after a median of 21 months (range: 0–62). The proportion of B1 patients changing behaviour was highest during the 1st year of disease (5%) but stable afterwards.
associated with the risk for resection. No difference in the results was found between Eastern and Western European patients.

Table 1: Disease behaviour in Crohn’s disease at diagnosis and follow-up

<table>
<thead>
<tr>
<th>At follow-up</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>Total (diagnosis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1, non-stricture, non-penetrating</td>
<td>298 (61%)</td>
<td>35 (7%)</td>
<td>14 (3%)</td>
<td>347 (71%)</td>
</tr>
<tr>
<td>B2, stricture</td>
<td>–</td>
<td>89 (18%)</td>
<td>–</td>
<td>11 (3%)</td>
</tr>
<tr>
<td>B3, penetrating</td>
<td>–</td>
<td>41 (8%)</td>
<td>–</td>
<td>41 (8%)</td>
</tr>
<tr>
<td>Total (follow-up)</td>
<td>298 (61%)</td>
<td>124 (25%)</td>
<td>66 (14%)</td>
<td>488 (100%)</td>
</tr>
</tbody>
</table>

Conclusion: In this European population-based inception cohort of unselected CD patients 14% of patients with B1 progressed to B2 or B3 after five years of follow-up. The risk of surgery was increased in patients with B1 who progressed to B2/B3. No clinical predictors for progression in behaviour including smoking and treatment with biological therapy could be identified.

Disclosure of Interest: All authors have declared no conflicts of interest.

P9892 COLORECTAL CANCER IN INFLAMMATORY BOWEL DISEASE: RISK FACTORS IN A PROSPECTIVE MULTICENTER NESTED CASE-CONTROL IG-IBD STUDY


1Medical University of Vienna, Austria; 2For Verona, 3Unit, Rome, Italy; 4Presidio Columbus, Fondazione Pollictonico Gemelli Universita Cattolica, Rome, Italy; 5G1 Unit, AO S. Camillo Forlanini, Rome, Rome/Italy; 6Gastroenterology & Internal Medicine-celiac Disease Unit, A gemelli Foundation, Catholic University of Sacred Heart, Rome/Italy; 7G1 Unit, Universita S. Donato, Palermo, Palermo/Italy; 8G1 Unit, Ospedale Maggiore, Bologna, Bologna/Italy; 9Systems Medicine, Universita Tor Vergata Internal Medicine, Roma, Italy; 10G1 Unit, Universita di Messina, Messina, Messina/Italy; 11G1 Unit, SUN, Second University, Napoli, Naples/Italy; 12G1 Unit, Ospedale Mauriziano, Torino, Turin/Italy; 13G1 Unit, Universita Federico II, Napoli, Naples/Italy; 14G1 Unit, Ospedale Cervello, Palermo, Palermo/Italy; 15G1 Unit, AO S. Filippo Neri, Rome, Rome/Italy; 16GI Unit, Ospedale S. Giuseppe, Milano, Milano/Italy; 17GI Unit, OAU Careggi, Firenze, Florence, Italy; 18GI Unit, Ospedale Fatebenefratelli, Milano, Milano/Italy; 19GI Unit, Ospedale Cervello, Palermo,Palermo/Italy

Contact E-mail Address: biancone@med.uniroma2.it

Introduction: Risk factors for colorectal cancer (CRC) in Inflammatory Bowel Disease (IBD) are still debated (1).

Aims & Methods: In a prospective multicenter, nested case-control IG-IBD study at 4 years, we aimed to assess the frequency and risk factors for incident CRC in IBD. The role of IBD phenotype vs thiopurines (IS) and/or anti-TNF’s use as risk factors for CRC was also evaluated. From Jan. 2012 to March 2017, all incident cases of CRC in IBD pts referring to 16 IG-IBD Units were recorded. Each IBD pt with CRC (IBD-CRC) was matched with 2 IBD pts with no cancer (IBD-C) for: IBD type (Crohn’s Disease, CD vs Ulcerative Colitis, UC), gender, age (<5 yrs). Cases of CRC derive from a larger cohort of IBD pts referring to the same Unites, with incidence of any cancer separately reported at 4 years follow up at 3 yrs reported for cancer overall(2). Statistical analysis: data expressed as median (range), Wilcoxon test, Chi-squared test, Fisher exact test; multivariate logistic regression analysis.

Results: Incident cases of CRC occurred in 66 IBD pts: 41 UC (UC-CRC), 25 CD (CD-CRC). IBD-C group therefore included 198 pts (66 IBD-CRC, 132 IBD-C). UC group included 123 pts (41 IBD-CRC, 82 UC-C) and CD group included 75 CD pts (25 CD-CRC, 50 CD-C). The frequency of incident CRC was higher in IBD group therefore included 198 pts (66 IBD-CRC, 132 IBD-C), UC group included 123 pts (41 UC-CRC, 82 UC-C) and CD group included 75 CD pts (25 CD-CRC, 50 CD-C). The frequency of incident CRC was higher in the tested UC versus CD population (62.1% vs 37.9%; p = 0.009). Gender was equally distributed in IBD groups (UC: 14 F [34%]; CD:12 F [48%]; p = 0.431). The median age was comparable between IBD-CRC and IBD-C (UC/CR vs UC/C 62 [37–86] vs 59 [35–86]; CD-CRC vs CD-C: 51 [23–76] vs 55 [22–76]; p = 0.179). Concomitantly, CD duration was comparable between pts with vs without CRC (20 [1–47] vs 13 [0–10 yrs:19 [76%] vs 35 [70%]; p = 0.060). UC duration was longer in pts with vs without CRC (20 [0–37] vs 10 [0–33] yrs: 6 [10%] vs 35 [60%]; p = 0.011). Conversely, CD duration was comparable between pts with vs without CRC (20 [1–47] vs 13 [0–35] yrs: 24% vs 15 [30%]; p = 0.017). April 19 yrs: 76% vs 35 [70%]; p = 0.58). IBD

Abstract: P9892

<table>
<thead>
<tr>
<th>Firmicutes</th>
<th>Bacteroidetes</th>
<th>Roseburia</th>
<th>Bifidobacterium</th>
<th>Faecalibacterium prausnitzii</th>
<th>Shannon Diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timepoint</td>
<td>Kendall Tau</td>
<td>p value</td>
<td>Kendall Tau</td>
<td>p value</td>
<td>Kendall Tau</td>
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<tr>
<td>FCP 1–2</td>
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<td>0.015</td>
<td>–0.211</td>
<td>0.147</td>
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<tr>
<td>FCP 2–3</td>
<td>–0.073</td>
<td>0.624</td>
<td>–0.173</td>
<td>0.234</td>
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<tr>
<td>FCP 3–4</td>
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<td>0.657</td>
<td>0.227</td>
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<td>–0.027</td>
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<tr>
<td>FCP 1–3</td>
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<td>–0.123</td>
<td>0.381</td>
<td>–0.031</td>
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<tr>
<td>FCP 1–4</td>
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<td>0.739</td>
<td>0.031</td>
<td>0.835</td>
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<tr>
<td>FCP 2–4</td>
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<td>0.675</td>
<td>0.006</td>
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<td>CRP 1–2</td>
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<td>0.114</td>
<td>0.440</td>
<td>0.207</td>
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<td>CRP 1–4</td>
<td>0.201</td>
<td>0.168</td>
<td>0.020</td>
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<td>CRP 2–3</td>
<td>0.242</td>
<td>0.080</td>
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<td>0.707</td>
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<td>CRP 1–4</td>
<td>0.111</td>
<td>0.428</td>
<td>0.091</td>
<td>0.518</td>
<td>0.009</td>
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<tr>
<td>CRP 2–4</td>
<td>–0.103</td>
<td>0.465</td>
<td>0.126</td>
<td>0.369</td>
<td>–0.158</td>
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</table>

Conclusion: Bifidobacterium relative abundance correlate closely with short term changes in FC suggesting a possible causal association. Other genera and species had poor and inconsistent correlations with short term changes in FC suggesting that they may not be causally related to short term changes in gut inflammatory activity.
Pts with CRC were younger at diagnosis of IBD than their IBD-C (UC-CRC vs UC-MD) (median age: 46 (IQR: 15–76) vs 46 (15–80); p = 0.04). The frequency of CRC was comparable between UC pts using or not IS and/or anti-TNFs (CRC-UC vs CRC-MD: IS monotherapy: 4 [16%] vs 9 [18%]; p = 0.04; OR 2.21 [0.70–9.87]; 1.66 [0.62–4.96]; 0.96 [0.36–3.08]; 1.78 [0.60–4.66]; 1.36 [0.66–2.89]; 0.54 [0.24–1.23]; respectively). In CD, perianal disease was the only significant risk factor for CRC (OR 2.11 [1.86–2.31]; as no other significant risk factors were identified (OR 2.21 [0.70–9.87]; 1.66 [0.62–4.96]; 0.56 [0.19–1.41; 0.39 [0.14–2.52]; 0.54 [0.23–1.43]; 0.83 [0.26–2.55]; 0.53 [0.27–0.8]; respectively).

Conclusion: In a prospective, multicenter, nested-case control IG-IBD study, incident cases of CRC were more frequent in UC than in CD. In our cohort, UC duration and perianal CD, but not immunomodulators use, were identified as independent risk factors of CRC.

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R. Pioli: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Speaker and advisory board member: Abbvie, MSD, Zambon, Mundipharma, Hospira, Biogen, Takeda, Holstein C. Papi: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Consultant or educational grants: Takeda, Abbvie, MSD, Chiesi. Sofar, alfa Wassermann.
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W. Fries: The study was not supported by grants nor funded. The reported disclosures are not related to the study: Advisory boards: Abbvie, Celltrion, Ferring, Hospira, Janssen, Lilly, MSD, Mundipharma, Pfizer, Samsung, Sofar, Takeda, Research grant: MSD.

Aims & Methods: Aims: To evaluate the incidence of inflammatory bowel disease (IBD) in Spain. Secondary: To describe the characteristics of patients at diagnosis; to evaluate the need for immunomodulators (IMM), biologics, surgery and hospital admissions in the first year of diagnosis and to assess the time from the onset of the symptoms to the diagnosis of the disease.

Methods: Prospective and population-based nationwide study. Adult patients diagnosed with IBD (Crohn’s disease (CD), ulcerative colitis (UC) or indeterminate colitis (IC)) during 2017 in the 17 Spanish regions are being included. Each case is also being followed-up for 12 months after diagnosis to describe changes in phenotype or location, to evaluate the requirement of IMM and biologics and to determine the need for hospitalization or surgery during the first year from the diagnosis. Data was captured in a web-based database (AEG-REDCap).

Results: An updated interim analysis of the incidence of IBD in Spain was planned 6 months after the beginning of the study (June 2017). Up to April 1st 2017, 557 patients from 156 centres have been included: 53% males, mean age 40 years, 27% smokers. 51% had UC, 44% CD, and 5% IC. 13% of patients had a family history of IBD. The mean time to IBD diagnosis from symptoms onset was 3 months (range 0–360). 14% had a diagnosis of CD, 80% a diagnosis of UC (median age: 46 (IQR: 15–76) vs 46 (15–80); p = 0.04). The frequency of CRC was comparable between UC pts using or not IS and/or anti-TNFs (CRC-UC vs CRC-MD: IS monotherapy: 4 [16%] vs 9 [18%]; p = 0.04; OR 2.21 [0.70–9.87]; 1.66 [0.62–4.96]; 0.96 [0.36–3.08]; 1.78 [0.60–4.66]; 1.36 [0.66–2.89]; 0.54 [0.24–1.23]; respectively).

Disclosure of Interest: J.L. Cabriada: Jose Luis Cabriada served as consultant or received research funding to MSD, Takeda, Janssen, Otsuka Ph and PK. R. Lorente Poyatos: Speaker consultant: MSD, Abbvie and Takeda.

References
P0985 CURRENT UNDERSTANDING OF POUCH MICROBIOTA IN HEALTH AND DISEASE; A SYSTEMATIC REVIEW

J. Segal1, S. Oke1, G. Hold2, A. Hart3
1St Marks Hospital, Harrow/United Kingdom
2School Of Medicine, University of Aberdeen, Aberdeen/United Kingdom
3Gastroenterology, St Mark’s Hospital and Academic Institute, London/United Kingdom

Contact E-mail Address: jonathansegal@doctors.org.uk

Introduction: The human gut microbiome is made up predominately of four major bacterial phyla, Firmicutes, Bacteroidetes, Proteobacteria and Actinobacteria. Changes or imbalance of these phyla is termed dysbiosis. Systemically, in inflammation bowel disease (IBD), key changes have been identified such as a reduction in beneficial bacterial species including Faecalibacterium prausnitzii and increases in more pathogenic species including Enterobacteriacae. The use of 16 S rRNA analysis methods will negate this effect and thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria. The use of 16 S rRNA analysis methods will negate this effect and thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria.

Abstract: P0985, Table 1: Evolution of pouch microbiota over-time

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<th>UC or FAP</th>
<th>Comparator</th>
<th>Key findings in UC</th>
</tr>
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<tr>
<td>Two-three months</td>
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P0986 LIVE-VACCINES AND BREASTFEEDING IN NEWBORN EXPOSED IN UTERO TO ANTI HIV: A MULTICENTER FRENCH STUDY IN INFANT INFECTIOUS DISEASE

S. Bendaoud1, S. Nuhon2, L. Beaugerie3, J. Goroula4, B. Pariente4, L. Peyrin-Biroulet5, V. Abitbol7, M. Boualit8, R. Altwegg9, A. Buisson10, C. Baudry4, E. Cuillerier21, A. Boureille22, A. Aubourg23, I. Rosa24, M. Simon1
1Institut Mutualiste Montsouris, Paris/France
2Hopital Saint Antoine, Paris/France
3Hospital Saint Louis, Paris/France
4National Reference Centre, France
5University Hospital, Nantes/ France
6Hopital Claude Huriez, lille/ France
7Hopital Claude Huriez, lille/ France
8CHU Nancy, Nancy/ France

Abstract: P0986

The human gut microbiome is made up predominately of four major bacterial phyla, Firmicutes, Bacteroidetes, Proteobacteria and Actinobacteria. Changes or imbalance of these phyla is termed dysbiosis. Systemically, in inflammation bowel disease (IBD), key changes have been identified such as a reduction in beneficial bacterial species including Faecalibacterium prausnitzii and increases in more pathogenic species including Enterobacteriacae. The use of 16 S rRNA analysis methods will negate this effect and thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria. The use of 16 S rRNA analysis methods will negate this effect and thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria.

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Aims & Methods:

1. To evaluate the rate and tolerance of live-vaccines before and after 6 months of life in newborn infants in the first 6 months at least. Along this, European consensus recommendations regarding breastfeeding and complications and information given during pregnancy were evaluated.

2. Questionnaires concerning live-vaccines (BCG, rotavirus, MMR) in their child during the first year, breastfeeding and complications and information given during pregnancy were included in the study.

3. A total of 200 women were included, 55 of whom (45%) breastfed and resumed after delivery in 112 (90%) patients. 55 women (45%) breastfed their infant and no complication was noted. Among 69 women who did not breastfeed their child, 4 women (5.8%) had a complication.

Results:

1. Half of women breastfed their child with no reported complication.

2. Infliximab was used in 76 (61%) patients, Adalimumab in 46 (37%) patients, and Vedolizumab in 28 (23%) for ulcerative colitis or undetermined colitis. AntiTNF used was Infliximab in 76 (61%) patients, Adalimumab in 46 (37%) patients, and Vedolizumab in 28 (23%) patients.

Contact Email Address: sihem_bend@yahoo.fr

Introduction: Anti TNF cross placenta during pregnancy and are detectable in the first trimester by obstetrician and pediatrician should be improved.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0987 OUTCOME OF ENDOCOPICALLY RESECTED DYSPLASTIC LESIONS IN ULCERATIVE COLITIS

H. Saoula, A. F. Boutaleb, H. Mahiou, M. Aissaoui, Y. Zmiri, N. Hamidouche, A. A. Vora1, A. A. Vora2

Enocesophageal dysplasia is detected after a mean follow-up of 30.16 months (range: 7.56-62.76). Dysplastic lesions were evaluated in 5 patients with UC and 5 patients with UC treated by Vedolizumab. The impact of CMV infection in UC patients treated with Vedolizumab is unknown.

Conclusion: The overall rate of dysplasia in UC patients treated with Vedolizumab and to analyze the risk factors for CMV disease associated with Vedolizumab therapy.

Aims & Methods: We performed a retrospective case-control study of all patients with UC treated with Vedolizumab from June 2014 to April 2017. The effect of the outcome of UC patients treated with Vedolizumab and to analyze the risk factors for CMV disease associated with Vedolizumab therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact Email Address: xavier.roblin@chu-st-etienne.fr

Introduction: Cytomegalovirus (CMV) infection has been associated with resistance to several immunomodulatory therapies in Ulcerative Colitis (UC) patients. The impact of CMV infection in UC patients treated with Vedolizumab is unknown.

Results: Thirty two patients were eligible (sex ratio M/F: 3/1, mean age: 43.6 years, mean disease duration: 7.5 years, E3 phenotype according to the Montreal classification). A total of 11 (34%) patients were treated with Vedolizumab. Patients with undetectable CMV DNA load were included in the control group. After antiviral treatment, the CMV DNA load was found undetectable for all patients. Treatment change was more frequent in the CMV disease group (HR = 3.15 [1.02-9.7], p = 0.03507) with only 16.7% patients who continued Vedolizumab treatment versus 65.4% in the control group (p = 0.03507). Coloscopy was also more frequent in the CMV group (33.3% versus 7.7% p = 0.064). By multivariate analysis, the only factor associated with the occurrence of CMV disease was a fecal calprotectin less than 300 mg/g stools at the beginning of the vedolizumab treatment. A previous endoscopic colonic infection also was more frequent but not statistically significant.

Disclosure of Interest: The occurrence of CMV disease, documented with high CMV DNA load on colonic biopsy samples, in UC treated with Vedolizumab is responsible for a negative impact on the natural evolution of UC, with more therapeutic failure and surgical treatment, even after an efficient antiviral treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact Email Address: barbara.mascalino2@thermofisher.com

Introduction: Gastrointestinal disorders may exhibit overlapping symptoms making diagnosis difficult in the primary and specialty care settings. Inflammatory bowel disease (IBD), with a prevalence of <0.5% in the general population[1], is characterized by chronic inflammation of the gastrointestinal tract, non-specific elevation of conventional inflammatory markers such as ESR and CRP and may present with extra-intestinal manifestations. Irritable bowel syndrome (IBS), in contrast, is a functional disorder without gastrointestinal inflammation and with an estimated prevalence of 10-20% [2]. Endoscopy is the gold standard for detecting and quantifying IBD vs. IBS, but due to the low prevalence of IBD, is negative in the majority of cases. Furthermore, it is invasive, expensive, and uncomfortable for the patient and not without risks. Moreover, inadequate bowel preparation prior to colonoscopy is known to
increase the burden of disease from both the clinical and the economic perspec-
tive: shorter intervals between repeated procedures, higher missed rates, patient
coincidence, and increased risk of complications are reported in the scientific
literature. F-Calprotectin (FC) is a fecal marker of intestinal inflammation; IBD
patients exhibit FC levels significantly higher than the general population; IBS
patients have FC levels higher than healthy controls, but significantly lower than
IBD patients [3]. Therefore, FC can be used as a pre-endoscopic test to differ-
entiate between IBD and IBS. The present study aims at evaluating the cost-
effectiveness of FC compared to the combined usage of CRP and ESR, and the
gold standard to distinguish IBD from IBS in Spain.

Aims & Methods: An 18-week Markov model was developed for each diagnosti-
...
C. Arieira 1, F. Dias De Castro 1, M.J. Moreira 2, J. Cotter 2
1Gastroenterology Department, Hospital da Senhora da Oliveira, Guimarães, Guimarães/Portugal
2Pt Government Associate Laboratory

Aims & Methods: We aimed to calculate the correlation between the endoscopic scores -Mayo Endoscopic Score (MES), DUBLIN, MMES and the biomarkers of inflammation -erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and to compare the ability of these scores to predict Calprotectin > 100 μg/g. This was a retrospective study, including patients with diagnosis of left or extensive UC who underwent colonoscopy between 2015 and 2016. The biomarkers were obtained with a maximum interval of one week in relation to colonoscopy and without introduction of new therapy. The Spearman test calculated the correlation between scores and biomarkers. ROC curves (AUC) were obtained for each score to predict Calprotectin > 100 μg/g.

Results: 60 patients were included, 46.7% female patients with mean age 45.3 ± 12.8 years and in patients with values of ESR 4.4 ± 12.8 mm, CRP 5.12 ± 6.00 mg/L and Calprotectin 354 ± 430 μg/g. The correlation between Calprotectin and MES was r=0.623 p < 0.001, for DS r=0.588 p < 0.001 and for MMES r=0.404 p = 0.001, but no correlation was found with the DS. There was no significant correlation between ESR and endoscopic scores. To predict values of Calprotectin > 100 μg/g the AUC for the MES was 0.848, for the DS 0.801 and for the MMES 0.815, and there was no statistically difference between the curves.

Conclusion: Although there is a good correlation between endoscopic scores and Calprotectin, the correlation between scores that take into account the extension were not superior to Mayo Endoscopic Score.

P9993 BONE HEALTH IN CROHN'S DISEASE IN THE ERA OF TNF-ALPHA INHIBITORS

S. Hakimian 1, J. Kheder 2, D. Cave 2, B. Hyatt 2
1Internal Medicine, University of Massachusetts, Worcester/United States of America/M
2Gastroenterology, UMass Medical Center, Worcester/United States of America

Contact E-mail Address: shahrad.hakimian@umassmemorial.org

Introduction: Osteoporosis and fractures are common in Crohn's disease (CD). Recently, several inflammatory cytokines, including tumor necrosis factor (TNF)-alpha have been linked to increased bone resorption. Therefore, it is hypothesized that anti-TNF therapy may influence osteoporosis and fracture risk. However, few studies have evaluated osteoporosis and fracture risk in the CD population.

Aims & Methods: The aim of this study is to gain a better understanding of the epidemiologic risk factors for osteoporosis and vitamin D deficiency in the era of TNF-alpha inhibitors. We conducted a retrospective review of 714 consecutive patients with CD in our GI clinic between 2008 and 2015 to identify 464 patients who met the inclusion criteria for the study comprising of all adults older than 18 years with confirmed CD based on labs and endoscopic findings. Data extracted for analysis included demographics data, disease phenotype, duration of disease, measures of disease activity, imaging and endoscopic data. Statistical analysis was performed using student t-test and chi-square test.

Results: We reviewed the charts of 290 patients with CD treated with TNF-alpha inhibitors (TNF) and 174 patients who are anti-TNF naïve (NB). There were 207 (45%) males and 257(55%) females in this cohort. TNF patients tended to be younger (average age of 43+/−15 and 54+/−18 years in TNF and NB groups respectively). Mean duration of disease was 14.9+/−10.2 for TNF and 18.6+/−19.2 for NB group. Approximately half of the patients had a smoking history. Average BMI was 27.6+/−6.6. Rates of vitamin D deficiency, insufficiency and normal vitamin D levels were not significantly different between TNF and NB groups. Vitamin D level was not associated with age, duration of disease, or inflammatory markers (ESR). However, there was a weak positive correlation between nutritional status (lowest albumin) and vitamin D level (Pearson’s R=0.19 vs 0.5 and for TNF and NB groups. Vitamin D level was associated with age, duration of disease, or inflammatory markers (ESR). However, there was a weak positive correlation between nutritional status (lowest albumin) and vitamin D level (Pearson’s R=0.19 vs 0.5 and for TNF and NB groups. There was similar rate of osteoporosis (16% vs 18%), osteopenia (53% vs 57%) and normal bone density (31% vs 25%) between the TNF and NB groups respectively. Furthermore, there was no statistically significant difference in T-scores at the hip (−1.2 vs −1.3), the spine (−1.0 vs −0.95), or the lowest T-scores (−1.5 vs −1.4) between TNF and NB patients. However, Z-scores at the spine (−0.47 vs −0.05), the hip (−0.55 vs −0.49) and the lowest Z-scores (−0.91 vs −0.67) were lower in the TNF group, but only reached significance in the spine (P=0.03). Interestingly, a significantly higher proportion of TNF patients under 60 years of age met the criteria for osteoporosis (T-score < −2.5 below the mean) compared to NB patients (15% vs 3.6%). Additionally, rates of osteoporosis in the NB group were very different between patients before and after age 60 (3.6% vs 30%) [Table 1]. There was no correlation with bone density and vitamin D level, nutritional status (based on lowest albumin level), or degree of inflammation (highest ESR or CRP levels). However, there was a moderate positive correlation with BMI and bone density (Pearson R=0.39) and a negative correlation with age (R =−0.25).

Table 1: Osteoporosis rates in patients on anti-TNF therapy (TNF) and those naïve to biologic medications (NB) at each age category

<table>
<thead>
<tr>
<th>Group</th>
<th>Age &lt; 60</th>
<th>Age ≥ 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNF</td>
<td>15.4%</td>
<td>18.2%</td>
</tr>
<tr>
<td>NB</td>
<td>3.6%</td>
<td>30.0%</td>
</tr>
</tbody>
</table>

Conclusion: Rates of vitamin D deficiency, and osteoporosis were similar among patients on anti-TNF medications to those on no biologics. TNF group patients were diagnosed with osteoporosis at an earlier age compared to NB group. Patients on anti-TNFs also had statistically lower Z-scores at the spine. Prospective studies are necessary to further determine the role of anti-TNF medications in osteoporosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P9994 THE AVAILABILITY OF INFliximAB TROUGH LEVELS IN IBD PATIENTS ON MAINTENANCE THERAPY DEEPLY IMPACTS THERAPEUTIC DECISION-MAKING

L. Lobaton 1, F. Cañete 1, A. Teniente 1, E. Cabrera 1, M. Mañosa 1, E. Martinez 2, E. Domenech 3
1Gastroenterology, Hospital Universitari Germans Trias i Pujol, Badalona/Spain
2Immunology, Hospital Universitari Germans Trias i Pujol, Badalona/Spain

Contact E-mail Address: trianany2010@gmail.com

Conclusion: In our cohort the frequency of HS varied between 13.4% and 41.7% defined by non-invasive methods. We found that the presence of metabolic syndrome and obesity were more frequent in patients with HS. Regarding factors related to IBD, patients with previous history of surgery were more frequently diagnosed with HS.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Infliximab (IFX) trough levels (ITLs) have emerged as a promising tool for the management of inflammatory bowel disease (IBD) patients and they correlate with clinical response and endoscopic remission. However, its use in clinical practice is still under debate, particularly in clinically stable patients.

Aims & Methods: 1) to describe real-life ITLs in clinically stable IBD patients; 2) to evaluate the LCI factors associated with infratherapeutic ITLs; and 3) to evaluate the impact of ITLs availability by comparing the CCD with TLGD. The decisions between experts were also compared. Both comparisons were calculated by the linear Cohen’s Kappa (κ) index. IBD patients on maintenance IFX therapy were prospectively followed from June 2015 to June 2016. Demographic, clinical and biological data including C-reactive protein (CRP) levels from the same infusion day were collected. At each IFX infusion, patients were visited by their physician; a “current clinical decision” (CCD) was taken regarding clinical data and CRP. ITLs were measured just before the IFX infusion/conversion were considered as infra-therapeutic if <2 μg/ml. Once ITLs were known, 3 experts took a hypothetical decision on treatment based on the same clinical and biological data plus ITLs (ITL-guided decision – TLGD).

Results: A total of 224 IFX infusions from 74 patients (76% Crohn’s disease) were analyzed. Median (IQR) disease and IFX therapy duration was 10 years (5-18) and 23 months (7-61), respectively; 87% received concomitant immunosuppressant therapy; 70% were on standard dosing, whereas 10% were scheduled every 4-6 weeks and 13% every 4-12 weeks. 30% of patients had clinical and biological remission. Median (IQR) CRP levels were 3.1 mg/ml (1.5–6.1). Median (IQR) ITLs were 1.79 μg/ml (0.35–3.74), with 52% of patients having infratherapeutic ITLs. In the multivariate analysis, the only risk factor for infra-therapeutic ITLs was the presence of biological activity. Concordance between CCD and TLGD was poor (κ = 0.10 [95%CI:0.01–0.20] vs. κ = 0.11 [95%CI:0.01– 0.21]) for experts A/B, respectively. This “dis- agreement was due to a higher proportion of dose-escalation according to the TLGD as compared to the CCD. Among the 203 infusions in which no action was taken according to the CCD, 93 (40%), 48 (20%) and 65 (30%) would have been dose-escalated according to the TLGD for experts A, B and C, respectively. The concordance between experts was moderate (κ = 0.55 [95%CI:0.41–0.71] vs. κ = 0.40 [95%CI:0.26–0.55] vs. κ = 0.30 [95%CI:0.21–0.40]) for experts A-B/C-B/C-C, respectively.

Conclusion: Our results highlight the impact of the inflammatory burden on ITLs and determining their therapeutic range in patients clinically stable. Both the clinical and economical impact of ITLs-assisted decision-making in IBD patients should be evaluated in prospective cohorts.

Disclosure of Interest: E. Domenech: Fees for advisory, lectures and research grants from MSD, Takada, AbbVie, Gilead, Janssen, EnteroMedics, Pearl Therapeutics, AstraZeneca, Tillotts, Mundipharma, Eli Lilly, Chugai, and Janssen. S. Hashimoto: Fees for advisory, lectures and research grants from MSD, Takada, AbbVie, Gilead, Janssen, EnteroMedics, Pearl Therapeutics, AstraZeneca, Tillotts, Mundipharma, Eli Lilly, Chugai, and Janssen. All other authors have declared no conflicts of interest.

P0995 THE DIAGNOSTIC UTILITY OF LINKED-COLOR IMAGING IN THE EVALUATION OF MUCOSAL INFLAMMATION IN PATIENTS WITH ULCERATIVE COLITIS

Digestive And Lifestyle Diseases, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima/Japan

Contact E-mail Address: h-hitomi@m3.kufm.kagoshima-u.ac.jp

Introduction: Recent studies recommend the histological mucosal healing of the intestinal tissue as a treatment goal in ulcerative colitis (UC). The intestinal color was evaluated by white-light imaging (WLI) and mucosal color assessment was validated based on the L*a*b* color values (LCI-L, LCI-a, LCI-b), where L* a* and b* color values are defined as lightness, redness, and yellow, respectively. We also quantified the mucosal color values of LCI (LCI-L, LCI-a, LCI-b) based on the L*a*b* color values. The endoscopic images were classified according to the Mayo endoscopic score (MES), and biopsied specimens were classified according to the Geboes scores. The endpoint of this study was to measure the correlation between the mucosal color values of LCI (LCI-L, LCI-a, LCI-b) and MES, which potentially stressful clinical situations were considered. Physicians and patients rated these situations on a scale from 1 to 10 as potential triggers of anxiety for the patient. A Mann-Whitney test was used to compare perceptions from physicians and patients taking 151 valid questionnaires from physicians and a randomized sample of 155 patients’ questionnaires.

Results: The survey was completed by 912 patients (mean age 39 ±10 years, 67% women) and 170 patients (mean age 44 ±10 years, 58% women). Having an ostomy, fecal incontinence in public or surgery are important triggers found in patients’ questionnaires. Patients generally agreed that physicians and patients (table). Patients, however, experience anxiety from a possible new flare or from being fatigued, whereas physicians are more concerned about anxiety due to telling about a new IBD diagnosis and about pregnancy in IBD patients (table). Mean scores from physicians and patients about clinical situations triggers anxiety or depression

<table>
<thead>
<tr>
<th>Situation</th>
<th>Physicians (n=151)</th>
<th>Patients (n=155)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lack of diagnosis</td>
<td>6.3</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>The diagnosis of IBD</td>
<td>6.2</td>
<td>5.6</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>The performance of an endoscopy</td>
<td>5.6</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>The explanation of an ostomy</td>
<td>6.6</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>A new oral treatment</td>
<td>4.8</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>A new auto-injectable treatment</td>
<td>5.6</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>A new intra-venous treatment</td>
<td>5.9</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>A surgery</td>
<td>6.7</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Having an ostomy</td>
<td>6.9</td>
<td>5.7</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>A pregnancy</td>
<td>5.9</td>
<td>4.0</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>The pain</td>
<td>6.3</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>An episode of public incontinence</td>
<td>6.8</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>A new flare</td>
<td>6.2</td>
<td>6.5</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Changes in the body image</td>
<td>6.3</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>Tiredness, fatigue, reduction in performance</td>
<td>6.0</td>
<td>6.3</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Conclusion: The main anxiety triggers in patients were having an ostomy, fecal incontinence in public, a surgery, a new flare and the feeling of fatigue. These last

Disclosure of Interest: This project was supported by Grant-in-Aid from Japan Society for the Promotion of Science (JSPS KAKENHI 16K09437, 18H01717).
two situations were scored higher by patients than by physicians. Teaching the patients to manage a new condition and treatment of fatigue are as aspects that would help to reduce the anxiety feeling and should be taken into account in clinical practice. Acknowledgements. Funded by Merck Sharp & Dohme of Spain and endorsed by ACCU España and by GETECCU.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0997 EVALUATION OF LISA-TRACKER IMMUNOASSAY INFliximab AND ANTI-INFliximab FOR THE THERAPEUTIC DRUG MONITORING OF SB2

A. Berger1, A. Haccourt1, J. Salameh2, X. Roblin3, S. Paul1

1Laboratoire D’Immunologie Clinique1408, CHU Saint-Etienne, Saint-Etienne/France
2Biogen France, Nanterre/France
3University of St. Etienne Dept. de Gastroenterologie, Saint-Etienne/France

Immunology, Hôpital Nord, Saint Etienne/France

Contact E-mail Address: stephane.paul@chu-st-etienne.fr

Introduction: Flixabs, an infliximab biosimilar referencing Remicade®, was developed by Samsung Bioepis, the joint venture between Samsung BioLogics and Biogen. SB2 received approval in EU for all approved indications of the reference infliximab. Many decision algorithms based on the measure of Infliximab (IFX) trough levels and antibodies to infliximab (ATI) have been increasingly used to optimize infliximab in Crohn’s disease and ulcerative colitis. The aim of our study was to appreciate if the biosimilar SB2 could be efficiently monitored using the Lisa-Tracker infliximab and anti-infliximab immununoassays developed by Theradig (France).

Aims & Methods: During this evaluation, standard curves of Infliximab and two different batches of SB2 were compared and then accuracy of the Lisa-Tracker IFX kit in detecting the spiked concentration of SB2 was measured using the Lisa-Tracker assay. Levels of infliximab (from 5 spiked samples with known amount of SB2 and 10 clinical samples from patients treated with infliximab) were calculated according to each of the 3 standard curves (infliximab, SB2 batch1 and SB2 batch2). All samples and standards were tested in duplicate. Regression slopes, y-intercept, r2 must be ≥0.95 and the slope must be comprised between 0.9 and 1.1. Intra-run and inter-run precision were also measured with spiked samples of different known SB2 (from 2 to 12 µg/ml) amounts. Capacity of polyclonal antibodies directed against infliximab to block the detection of SB2 using the Lisa-Tracker infliximab assay and the capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Results: We demonstrated the perfect equivalence of infliximab standard curve to the SB2 standard curve and that the Lisa-Tracker assay is suitable for the quantification of SB2 in human serum samples (R2 = 0.99; the levels of infliximab of the 20 samples were calculated according to the 3 standard curves infliximab, SB2 batch 1 and SB2 batch 2 with CV ranged from 2.1 to 12.6%). Quantification of SB2 was not influenced by serum matrix and % of recovery were comprised between 82% and 113%. High intra-run and inter-run precision were obtained with the Lisa-Tracker infliximab assay for the quantification of SB2 (CV ranged from 3.3 to 17.9%). Finally, the capacity of polyclonal antibodies to infliximab to block the detection of SB2 was 92% in 5 spiked samples and specificity values of 72.7% and 76.2%. No significant differences between the fecal volatile profiles from smokers and non-smokers could be due to the wide variability accounted when performing (fecal) VOC analysis. The finding that VOC profiles differed between groups for the variables age, sex, BMI, diet, sample weight, chronic diseases and medication and supplement use. Fecal VOC profiles differed between smokers and non-smokers (PC1: p-value = 0.003). Smoking cessation induces profound changes in the composition of the intestinal microbiota in humans.

Disclosed of Interest: All authors have declared no conflicts of interest.

References
1. Van Gaal1, D. J.C. Berkhout2, S. Bosch3, T.G. J. De Meij4, K. H.N. De Boer5

2Gastroenterology And Hepatology, VU University Medical Center, Amsterdam/Netherlands
3Department Of Pediatric Gastroenterology, VU University Medical Center, Amsterdam/Netherlands

Disclosure of Interest: Ad: All authors have declared no conflicts of interest.

P0998 THE MEASURE OF TROUGH LEVELS OF INFliximab IS LINKED TO THERAPEUTIC RESPONSE IN IBD PATIENTS

X. Robin1, A. Berger2, G. Boschetti2, B. Flourié3, S. Nuncy4, S. Paul2

1Gastroenterologie, Hôpital Nord, Saint Etienne/France
2Laboratoire D’Immunologie Clinique1408, CHU Saint-Etienne, Saint-Etienne/France
3Gastroenterology, Lyon-Sud University Hospital, Pierre Benite/France
4Gastroenterologie, CH Lyon Sud Gastro sector Jules Courmont, Pierre Benite/Codes/France

Contact E-mail Address: xavier.robin@chu-st-etienne.fr

Introduction: If the association between trough levels of infliximab (TLI) and clinical remission or mucosal healing is demonstrated, we don’t really know the cause and effect between TLI and target value to obtain this association. So, the aim of our study was to evaluate the causality or the association between TLI and clinical remission. Aims & Methods: We prospectively included all IBD patients treated in our IBD unit and in clinical remission (CDAI < 150 for Crohn’s Disease (CD) or partial Mayo score < 3 for ulcerative colitis (UC)) with biomarker normalization (fecal calprotectin < 250 µg/g stools) or in deep remission (clinical remission with fecal calprotectin <50 µg/g stools). We analyzed median of TLI and fecal calprotectin at the inclusion (M0) and 6 months before eligibility (M-6). We excluded patients with deep remission at M-6.

Results: 111 patients were included (60 CD, sex ratio M/F: 0.8, 51 patients in clinical remission at M0). All these 111 patients were in clinical remission at M-6. Median fecal calprotectin at M-6 were similar in the two groups of patients (210 µg/g in the group of patients who achieved deep remission at M0 vs 229 µg/g in the group of patients who achieved only biomarker remission respectively; p = 0.01). A ROC curve analysis was not able to isolate a cut-off value associated to deep remission achievement. (AUROC = 0.61). Next, we analyzed separately median of TLI and fecal calprotectin 6 months before eligibility (M-6) of patients in deep remission at M0 (51 patients). The median TLI was significantly lower at M-6 than at M0 (41 µg/mL vs 59 µg/mL respectively; p = 0.03). Conversely, median fecal calprotectin was significantly higher at M-6 in comparison to M0 (190 vs 35 µg/g stool; p = 0.01). A negative and weak significant correlation between fecal calprotectin and TLI was observed (Spearman’s rank correlation coefficient (q) = -0.25; p = 0.045).

Conclusion: Although TLIs may increase with decreased drug clearance due to deep remission, we show for the first time that the residual rate is the causal element for achieving clinical remission.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P1000** CLOSTRIDIUM DIFFICILE INFECTION AND IBD PATIENTS IN ONE CLINICAL CENTER

A. Tanassova1, A. Georgiev2
1Gastroenterology, Medical University of Varna, Varna,Bulgaria
2Clinic Of Gastroenterology, Medical University, Varna, UHAT ‘S. Marina’
Varna, Varna/Bulgaria

Contact E-mail Address: aniatanassova@abv.bg

**Introduction:** The prevalence of Clostridium difficile infection (CDI) in patients suffering from inflammatory bowel disease (IBD) has increased rapidly over the past several decades. However, the exact global epidemiology remains unclear because of insufficient data from developing countries.

**Aims & Methods:** The goal of our study is to examine the incidence of CDI in patients with IBD, prospective, observational study evaluating IBD patients in a referral center was performed to evaluate the incidence of Clostridium difficile. Diagnosis was confirmed with stool toxin analysis. Demographic information, diagnosis, anatomic location, IBD therapy, antibiotic exposure, hospitalizations, and surgeries were recorded. For a period of 3 years, 202 IBD patients were studied, 105 of which have UC and 97 - Crohn’s disease (CD). We used the Clostridium difficile Glutamat Dehydrogenase + Toxin A + B based on the principle of quantitative immunochromatographic assay for the determination of Clostridium difficile Glutamat Dehydrogenase, Toxin A and Toxin B in stool samples.

**Results:** The results show that all patients with a positive CTX test have a clinical picture, which resembles a relapse of the disease (p < 0.05). There’s a tendency towards growth in the incidence of IBD patients who are CD positive. Their number in 2016 is significantly higher than that in 2014. In 2014 it was ~5.90% with CD and 12.30% with UC, whereas in 2016-12.20% with CD and 27.80% with UC (p < 0.05). The results show that the incidence of CDI in patients with UC is significantly higher than in patients with CD, respectively 18.1% to 9.30% (p < 0.05).

**Conclusion:** There is an increase in incidence of CDI, and patients with UC are more affected by it. The results of our study are confirmed by other authors as well. A significant part of patients with CD have a severe disease that needs additional research to determine the incidence and influence of the infection amongst patients with IBD, who receive different therapy regimes and also to understand how the CDI affects the evolution of the disease.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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1. Ben-Horin S, Margalit M, Bossuyt P, Maul J, Shapira Y, Bojic D, et al. Increased risk of Clostridium difficile infection (CDI) in patients suffering from inflammatory bowel disease (IBD) has increased rapidly over the past several decades. However, the exact global epidemiology remains unclear because of insufficient data from developing countries.

**P1002** LOWER GI SYMPTOMS IN YOUNG PATIENTS: CAN SYMPTOMS AND NON-INVASIVE TESTS BE USED SYSTEMATICALLY TO AVOID UNNECESSARY COLONOSCOPIES?

A. Alakkari, B. Ryan

Gastroenterology Department, Adelaide and Meath Hospital, Dublin/Ireland

Contact E-mail Address: alakkari@yahoo.com

**Introduction:** Young patients commonly present with lower gastrointestinal symptoms. Most colonoscopies in such patients are normal, but risk potentially serious complications. There is an over reliance on endoscopy in clinical practice leading to increasing demand on limited resources. As a result, some patients with potentially life-threatening conditions (e.g. colon cancer) may have a significant delay in diagnosis that may result in a worsened prognosis. Many endoscopic procedures are absolutely necessary, but many might be avoided if other, non-invasive forms of investigations were available which could reliably exclude significant pathology. In this turn could lead to a reduced risk of complications.

**Aims & Methods:** We aimed to assess colonoscopy, relevant faecal and blood tests in young patients with lower gastrointestinal symptoms. Colonoscopies performed over a 1-year period were retrospectively identified from the Endoscopy Reporting System (patient charts, faecal occult blood test (FOBT), complete blood count (CBC), CRP, and CEA). The study population included 225 young patients presenting with lower GI symptoms. The aim of our study was to evaluate the usefulness of faecal occult blood test (FOBT), CBC, CRP, and CEA for the detection of colorectal neoplasms in young patients presenting with lower GI symptoms. The study was conducted from January 2014 to December 2015.

**Results:** The overall incidence of colorectal neoplasms was 0.8% in young patients presenting with lower GI symptoms. The sensitivity and specificity of faecal occult blood test (FOBT), CBC, CRP, and CEA for the detection of colorectal neoplasms were 100% and 100%, respectively. The positive predictive value (PPV) and negative predictive value (NPV) of faecal occult blood test (FOBT), CBC, CRP, and CEA for the detection of colorectal neoplasms were 100% and 100%, respectively.

**Conclusion:** The results of our study suggest that faecal occult blood test (FOBT), CBC, CRP, and CEA are useful for the detection of colorectal neoplasms in young patients presenting with lower GI symptoms. Further studies are needed to confirm these findings.
86% respectively. In group B these figures were 95%, 38% and 95% respectively. 2 days after the surgery, 150 (74%) patients were investigated for Coeliac Disease. 4 had positive findings: 3 in Group A and 1 in Group B. One patient in Group A had both coeliac disease and lymphocytic colitis.

Conclusion: Colonoscopy has low yield in young symptomatic patients, especially those with non-diarrhoeal symptoms. Non-invasive tests should be used systematically to better identify patients requiring colonoscopy. We are conducting a prospective study to explore non-invasive diagnostic paradigms. Implementation of these strategies will help reduce colonoscopy waiting times.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. De Cruz et al. Lancet 2015
4. Koliakou et al. Inflamm Bowel Dis 2010

Table 1: Performances of MRI parameters and faccal calprotectin to detect endoscopic postoperative recurrence in Crohn’s disease

<table>
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<td>Faecal calprotectin ≥100 μg/g</td>
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<td>38.5%</td>
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<td>0.79</td>
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Conclusion: Faecal calprotectin and MRI are reliable tools to detect endoscopic POR in CD patients and could be used as non-invasive alternative options to colonoscopy.

Disclosure of Interest: A. Buissone: None related to this work. Lecture fees for Abbvie, Hospitaria, Takeda, MSD, Ferring, Vifor Pharma, Sanofi-Aventis. Consulting fees for Abbvie, Hospitaria, Takeda.

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References

1. De Cruz et al. Lancet 2015
4. Koliakou et al. Inflamm Bowel Dis 2010
Conclusion: This is the first study evaluating the relevance of PEG preparation in a large population of adult patients with CD. Our study has demonstrated that there is no benefit in using PEG for the preparation of the small bowel before the capsule in patients with CD. Quantitatively, the two simplified preparation methods were more efficient than the preparation with PEG and qualitatively, the preparation using the light imaging was more efficient.

Disclosure of Interest: A. Bourreille: Advisory Boards: Medtronic Cours, formations: Medtronic Aids for research: Medtronic
All other authors have declared no conflicts of interest.

Aims & Methods: Totally, 10 consecutive patients with inactive or mildly active UC were enrolled, and fifty-three areas were assessed by LCI. All examinations were conducted with a LASEREO endoscopic system (FUJIFILM CO., Tokyo, Japan). During the colonoscopy, each region of interest (ROI) of terminal ileum, cecum, ascending colon, transverse colon, descending colon, sigmoid colon, and rectum was assessed by light imaging (WLI) and LCI. The Commission international de l’éclairage (CIE) LAB color differences (ΔE) were calculated among WLI and LCI in each ROI. After ROI was observed by colonoscopy, the biopsy specimen was taken in each ROI. Inflammatory cell infiltration, erosion, crypt abscesses, and goblet cell depletion were assessed by the histologic findings of acute inflammation. For evaluation of chronic inflammation, crypt atrophy, crypt distortion, and basal plasmacytosis were assessed.

Results: The mean age of patients who were enrolled in the present study was 41.6 ± 17.7 years. The sex ratio (men/women) was 4:6. The type of extent of UC (ulcerative proctitis/left-sided UC/extensive UC) was 1:5:4, which showed no statistically significant difference. 96.8% of patients had ileal non-suppressive drugs, 10% with biologics, while 20% used combotherapy. 83.3% of patients had perianal disease. In relation with smoking status, 34% were active smokers. According to the behavior of the disease, 50% presented non-stricturing non-obstructive disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1I005 VALUE OF 75SeHCAT IN THE DIAGNOSIS OF BILE ACID MALABSORPTION IN CROHN’S DISEASE WITH CHRONIC DIARRHEA

Disclosure of Interest: forming surgery.

Aims & Methods: We aimed to analyze the incidence of BAM in Crohn’s (CD) patients with chronic diarrhea through 75SeHCAT and to assess whether there is a relationship between the malabsorption degree and the presence of ileal resection prospectively. 33 patients with CD and chronic diarrhea with and without ileal resection during the period between August 2015-April 2016. In all patients, an inflammatory activity was previously discarded through biomarkers and endoscopy/MRI.

Results: 30 patients had ileal disease, 9 had small intestinal disease. 96.8% of patients demonstrated abnormal values defined as

ΔE =C0 −C1

4% retention at seventh day measurements. Epidemiological and clinical data were collected from the local database ENEIDA.

Conclusion: Mild BAM is considered 7–10%, moderate 4–7% and severe <4% retention at seventh day measurements. Epidemiological and clinical data were collected from the local database ENEIDA.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1I007 THE ROLE OF SENSE OF COHERENCE IN DETERMINING HEALTH RELATED QUALITY OF LIFE AND DISABILITY IN INFLAMMATORY BOWEL DISEASE

g. Wild, M. Vitagliano, I. Albunese, K. Shirllow

Gastroenterology, McGill University Health Centre, Montreal/Canada

Introduction: There is an ever growing body of evidence that indicates that Health Related Quality of Life (HRQoL) is significantly impaired in IBD. While clinical variables and disease activity status influence HRQoL, a host of psychosocial and personality variables also play an important role. This content is supported by evidence of impaired quality of life (QoL) and disability in IBD, which is unrelated to the absence of demonstrable disease activity. Moreover, individual differences may play a key role in the psychological adaptation to living with IBD and coping with IBD-related psychological distress and the influence. Sense of coherence (SOC) is an emerging theoretical and dynamic construct that seeks to explain why some individuals in the face of adversity experience illness while others do not. Antonovsky’s theory of SOC suggests that individuals with strong SOC experience effective and flexible coping strategies when faced with stressors (e.g. chronic medical condition) whereas those with weak SOC are less likely to adapt to health stressors and have less motivation when confronted with challenges to their health. While a number of studies have shown that SOC appears to have an impact on HRQoL, data regarding this association in IBD are limited.

Aims & Methods: The goal of the current study was to examine the associations between an individual’s sense of coherence, and their overall health-related quality of life. The first part of this analysis looked at whether sense of coherence accounts for more of the variance in disability level, and an individual’s illness perception, as compared to other reported psychosocial factors. The second part of this study evaluated whether sense of coherence, as well as illness perception, were associated with an individual’s self-reported quality of life, and if this interaction effect was moderated by a number of demographic and level of illness variables. Additionally, the correlations between sense of coherence, as well as illness perception, and self-efficacy, as well as self-reported emotional intelligence were also further evaluated. This is a cross-sectional observational cohort of IBD patients attending MUHC (McGill University Health Center) IBD outpatient clinics. The patient population demographics are as follows: mean age (42.4 ± 12.44, gender (40.6% male), disease type (58.4% CD, 33.7% UC), disease activity (27.7% active, 65.3% inactive). Patients completed multiple validated questionnaires pertaining to a variety of psychosocial and QoL parameters. Data was analyzed by multiple linear regression using statistics software (SPSS version 17.0).

Results: Preliminary analyses of this patient population reveal that 40.2% of the variance in level of disability is explained by sense of coherence. This model suggests a significant negative correlation between sense of coherence and level of disability (β =−0.64, p <0.05). A smaller, albeit significant contribution of sense of coherence with illness perception was additionally found (14.1% of the variance, and β =−0.39, p <0.05). Furthermore, 32.3% of the variance in self-
Introduction: Inflammatory bowel disease (IBD) is primarily assessed by endoscopy, which is a costly and invasive procedure with serious risk of complication, underlining the need for novel non-invasive diagnostic biomarkers. In previous studies, plasma amino acid analysis has revealed significant differences between IBD subjects and controls. This ‘aminoigram’ has not yet been studied in faecal samples of IBD patients. The aim of this explorative study was to compare faecal amino acid composition between paediatric de novo IBD patients and healthy controls, and between the phenotypes ulcerative colitis (UC) and Crohn’s disease (CD).

Aims & Methods: In this cross-sectional case-control study, paediatric treatment-naïve IBD patients from a tertiary centre were included, before bowel cleansing and colonoscopy. Control patients were recruited from schools in the province North Holland, the Netherlands. All participants collected a faecal sample on which amino acid analysis was performed by means of high performance liquid chromatography (HPLC, Biochrom 30). To correct for the influence of faecal contamination or C205 nmol/mg. In particular, alanine, glycine, phenylalanine, leucine, isoleucine, valine and lysine differed between IBD patients and healthy controls with ratios up to 5:1 (table 1). In addition, UC and CD patients differed remarkably based on levels of glycine, phenylalanine and serine with ratios up to 4:1 (table 1).

Table 1: Levels of amino acids in patients with Crohn’s disease, ulcerative colitis and healthy controls

<table>
<thead>
<tr>
<th>Amino acid</th>
<th>healthy controls median</th>
<th>ulcerative colitis median</th>
<th>Crohn’s disease median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alanine</td>
<td>2.07 (1.88–4.39)</td>
<td>5.28 (3.10–13.08)</td>
<td>8.21 (4.59–13.05)</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>0.48 (0.48–1.46)</td>
<td>1.37 (1.07–1.39)</td>
<td>2.62 (1.74–3.91)</td>
</tr>
<tr>
<td>Glycine</td>
<td>1.06 (0.91–2.65)</td>
<td>1.91 (1.10–3.58)</td>
<td>5.28 (2.17–5.97)</td>
</tr>
<tr>
<td>Leucine</td>
<td>1.00 (0.86–2.88)</td>
<td>3.04 (2.34–5.32)</td>
<td>4.13 (3.80–7.45)</td>
</tr>
<tr>
<td>Isoleucine</td>
<td>0.76 (0.09–2.15)</td>
<td>1.69 (0.88–2.01)</td>
<td>3.07 (2.17–5.97)</td>
</tr>
<tr>
<td>Valine</td>
<td>0.96 (0.76–2.61)</td>
<td>2.43 (2.35–5.19)</td>
<td>4.41 (3.29–6.64)</td>
</tr>
<tr>
<td>Lysine</td>
<td>1.72 (1.21–4.03)</td>
<td>2.63 (1.75–6.54)</td>
<td>4.62 (2.27–8.04)</td>
</tr>
<tr>
<td>Serine</td>
<td>0.81 (0.52–1.69)</td>
<td>1.08 (0.97–1.96)</td>
<td>2.57 (1.48–4.57)</td>
</tr>
</tbody>
</table>

*All levels are displayed in nmol/mg.

Conclusion: This was the first pilot study to assess the potential of the faecal aminoogram as non-invasive biomarker for disease activity of paediatric IBD. We observed remarkable differences in faecal amino acid composition between IBD patients and healthy controls, and between the IBD phenotypes. Whether these differences reflect decreased absorption or increased loss by inflamed intestines needs to be elucidated. Currently, we are awaiting the results of a larger proof-of-concept study on these faecal amino acid profiles.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

3. Reinisch et al, Factors Associated With Short- and Long-Term Outcomes of Therapy for Crohn’s Disease, *Clinical Gastroenterology and Hepatology* 2015;13:539-547

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**P1001** EVALUATION OF PET-MRI AND FECAL BIOMARKERS TO MONITOR DISEASE ACTIVITY IN PATIENTS WITH UC


1Department For Internal And Integrative Medicine, Klinikum Essen-Mitte Integrative Gastroenterology and Hepatology, University Hospital of Essen, Essen/Germany

2Teclab Inc, Blackburn/United States of America/V/4

3Enterosan, Labor L+S, Bad-Bocklet-Grossenbrach/Germany

4Diagnostic And Interventional Radiology And Neuroradiology, University Hospital of Essen, Essen/Germany

5Radiology, Evangelisches Krankenhaus, Duesseldorf/Germany

Contact E-mail Address: j.langhorst@klinikum-essen-mitte.de

Introduction: Endoscopy is the gold standard diagnostic tool in ulcerative colitis (UC). However noninvasive methods like cross-sectional imaging and fecal biomarkers are needed for interval clinical assessments and assessing response to medical treatment. The combination of positron emission tomography (PET) with 18F-fluorodeoxyglucose (18F-FDG) with magnetic resonance imaging (MRI) as integrated PET/MRI in one examination is a new cutting-edge technology for the non-invasive assessment of the inflammatory activity in UC. In addition a panel of noninvasive biomarkers like Lactoferrin and Calprotectin are increasingly popular and used in all-day patient care.

Aims & Methods: To compare the performance of non-invasive biomarkers to PET/MRI and colposcopy in patient with UC. In every patient a PET/MRI including the maximum standardized uptake value ratio gut/liver (SUVRquot) and a colonoscopy including an endoscopy index (EI) was performed within 48 hours and the Disease Activity Index Mayo score (DAI) was calculated. Fecal Lactoferrin (LF), Calprotectin (CALP), PMN-elastasis (PMN-e), S100A12, Eosinophil-derived Neurotoxin (EDN) as well as CRP were correlated to the SUVRquot, the DAI and the EI using correlation analyses. Sensitivity, specificity and diagnostic accuracy were calculated for all cut-offs and performances were performed using SPSS (IBM SPSS Statistics for Windows, release 22.0).

Results: 32 patients (21 female), mean age 44.4 ± 10.63 years (range 23–67) with diagnosed UC were included in the study. Mean time since diagnosis was 11.41 years (SD = 6.42). EI and SUVRquot (r (32) = 0.45; p = 0.009), EI and DAI (r (32) = 0.87; p = 0.000) as well as DAI and SUVRquot correlated significantly (r (32) = 0.40; p = 0.022). SUVRquot was correlated significantly with LF (r (32) = 0.36; p = 0.046), EDN (r (32) = 0.49; p = 0.005), and CRP (r (32) = 0.36; p = 0.034), but not with PMN-e, S100A12 and CALP (p > 0.05). DAI was correlated significantly with PMN-e (r (32) = 0.55; p = 0.001), LF (r (32) = 0.55; p = 0.001), EDN (r (32) = 0.70; p = 0.000), CRP (r (32) = 0.46; p < 0.008), and CALP (r (32) = 0.56; p = 0.001), but not with S100A12 and CALP (p > 0.05). EI was correlated significantly with LF (r (32) = 0.61; p = 0.000), EDN (r (32) = 0.63; p = 0.000), PMN-e (r (32) = 0.51; p = 0.003), S100A12 (r (32) = 0.41; p = 0.021), CALP (r (32) = 0.52; p = 0.002), CRP (r (32) = 0.44; p = 0.012), but not with CALP (p > 0.05). The median values (inactive active) were: LF: 1.75; 201.3 µg/g; EDN: 1.025±10.5 µg/g; CALP: 62.5%/62.5%; PMN-e: 63.6%/63.6%; S100A12: 18.2-88.96; DAI: 0.39/2.35 µg/g; CRP: 0.15/0.75 mg/dl. Sensitivity, specificity, diagnostic accuracy (confidence interval) and optimized cut-off for LF was 87.5%/87.5%/87.5% (CI 72.1%/100%); 4, 27 µg/g; CALP: 62.5%/62.5%/62.5% (CI 36.5%/68.2%); 68, 43 µg/g; PMN-e: 83.3%/75%/81.25% (CI 60.9%/99.9%; 0.005 µg/g; S100A12: 75.0%/75.0%/75.0% (CI 56.9%/94.1%); 60.40; EDN: 75.5%/75.0%/75.0% (CI 80.8%/100%); 1, 30 µg/g; CRP: 70.8%/75.0%/71.9% (CI 53.5%/94.9%); 0, 35 mg/dl.

Conclusion: Using EI as gold standard reference we found that fecal biomarkers LF, EDN, PMN-e and S100A12 can reliably distinguish between active and remission state of UC. However, Calprotectin did not perform well. LF, EDN and S100A12 were correlated significantly to the SUVRquot which was significantly correlated with EI and DAI. In conclusion, Lactoferrin and Eosinophil-derived Neurotoxin performed best using endoscopy and PET/MRI as reference.

Disclosure of Interest: J. Langhorst: Research grant by Teclab Inc. J.H. Boone: Employee of Teclab Inc. All other authors have declared no conflicts of interest.

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Langhorst J, Boone J, Lauche R, Ruelfer A, Dobos GJ. Fecal Lactoferrin, Calprotectin, PMN-elastase, CRP, Lactoferrin, EDN and White Blood Cell Count as an Indicator for Mucosal Healing and Clinical Course of Disease in Patients with Mild to Moderate Ulcerative Colitis: Post Hoc Analysis of a Prospective Clinical Trial. *JOURNAL OF CROHNS AND COLITIS* 2016; Febr 13

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**P1012** MMP3 (METALLOPROTEINASE 3): A NEW MARKER FOR ASSESSING LOSS OF RESPONSE TO INFliximAB IN IBd


Dixcy, Azicura Ospedaleria de Pudova, Padova/Italy

Contact E-mail Address: brigida.barberio@gmail.com
Introduction: At present, drug response to infliximab is monitored by trough levels and anti-drug antibody levels. Recent studies have shown that loss of drug degradation has been hypothesized since MMP3 and MMP9 were found to be able to cleave IgG, like infliximab, in both animal and human experimental studies (1). 

Aims & Methods: We collected serum samples in 102 patients (27 Crohn’s Disease and 75 Ulcerative Colitis) treated with stable doses of infliximab for at least 6 months (t0) and 6 months thereafter (t1). In each patient, TL and ATI were assessed at t0 and t1 by ELISA. In addition, MMP3 levels were assessed in 28 healthy subjects as controls. Clinical (HBI or Mayo score) and biochemical (CRP, fecal calprotectin) markers were assessed to define disease remission/activity. TL were considered therapeutic if >3.8 mcg/ml, ATI were considered positive if >10 mcg/ml. Data are presented as mean ± Standard Error Mean (SEM). Comparison among groups was performed by non-parametric tests.

Results: MMP3 levels were similar at t0 and t1 in patients which maintained therapeutic TL (14.5 ± 1.7 pg/ml and 15.0 ± 1.6 pg/ml, respectively) and in patients with lower than therapeutic TL (22.2 ± 3.2 pg/ml and 22.3 ± 2.4 pg/ml, respectively). Patients with higher than therapeutic TL but ATI negative had significantly higher MMP3 levels compared to the group with low TL and ATI positive (33.2 ± 3.0 and 20.4 ± 2.7 respectively, p = 0.0003), showing another pathway of drug degradation. 21 patients lost response between t0 and t1: 15 out of 21 patients demonstrated high levels of MMP3 (32.0 ± 4.1 pg/ml) already at t0; in addition, 17 of these 21 patients were in clinical remission at t0, while at t1 all patients had disease activity.

Conclusion: Serum MMP3 levels may be useful in predicting loss of response to anti TNFα in patients with low TL but without ATI. High MMP3 levels predict with 90.5% accuracy loss of response over the next 6 months.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1013 USEFULNESS OF A MULTIDISCIPLINARY APPROACH FOR COMBING BOTH RHEUMATOLOGY AND GASTROENTEROLOGY FOR THE ASSESSMENT AND MANAGEMENT OF INFLAMMATORY BOWEL DISEASE PATIENTS

M. Barreiro-De Acosta1, E. Pérez-Parmín2, R. Ferreiro Iglesias1, R. Mejuto1, A. Mera1, J.E. Dominguez-Munoz1

1Gastroenterology, University Hospital of Santiago, Santiago de Compostela; Spain
2Rheumatology, University of Santiago de Compostela, Santiago de Compostela; Spain

Contact E-mail Address: manu.barreiro@hotmail.com

Introduction: More than one third of inflammatory bowel disease patients (IBD) present gastrointestinal manifestations, with the most common, clearly the more incapacitating and which more alter the quality of life of IBD patients. These patients could benefit from a multidisciplinary approach for quicker diagnosis and for optimizing treatments.

Aims & Methods: The aim of the study was to evaluate the impact of a multidisciplinary approach carried out by both a rheumatologist and a gastroenterologist in the management of these patients. Therapeutic changes after the combined evaluation were also evaluated.

Results: From April 2015 to April 2017, all IBD patients reporting articular pain to the IBD-dedicated gastroenterologist were referred to an experienced rheumatologist. The day of the consultation a multidisciplinary committee with a rheumatologist and a gastroenterologist evaluated and discussed in all patients their possible diagnosis and potential changes in their treatment. Assessment was made according to current guidelines and data recorded in a common database regarding the reasons why patients were remitted from IBD, their rheumatologic diagnosis and all changes implemented in their treatments. Results are shown in percentages.

Results: 112 consecutive IBD patients were remitted from the IBD Unit and analyzed by the committee. Mean age 38 years (ranging from 18 to 73). Most patients were women (67%), 19% were smokers and 23% former smokers. 51% of patients had Crohn’s disease and 49% ulcerative colitis. The main causes for derivation from IBD were a suspicion of inflammatory arthropathies in 43% and of arthromyalgias in 40%. The more frequent diagnosis after the rheumatology consultation and the committee meeting were inflammatory arthropathies associated with IBD in 41% (51.5% presented axial arthropathies and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%. Regarding treatment changes, after the multidisciplinary committee with a rheumatologist and a gastroenterologist, changes were made in 28% of patients. Of those, in 35% of patients methotrexate was added in patients with biologic treatment (in some of them patients were in monotherapy, but in others the drug was introduced for replacing thiopurines). In 24% of patients sulfasalazine was introduced instead of mesalamine. In the other patients either other biologies like ustekinumab were introduced or the doses of anti-TNFα were optimized in accordance with rheumatologic schedules.

Conclusion: A multidisciplinary consultation combining inflammatory bowel disease and rheumatology offers both an earlier detection of inflammatory arthropathies associated with IBD and earlier changes in treatment, thereby helping to optimize the hospital resources. Fibromyalgia is common among IBD patients, though it is important that it is detected it should not be confused with. 

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1015 ADALIMUMAB TROUGH LEVELS AND ANTI-ADALIMUMAB ANTIBODIES CORRELATE WITH CLINICAL AND ENDOSCOPIC ACTIVITY IN CROHN’S DISEASE PATIENTS

G. Pellegrata1, S. Lo Pumo1, G. Bodin2, I. Baldassarre1, E.G. Giannini3, V. Savarino1, A. Jain2, E. Savarino1

1Division Of Gastroenterology, Department Of Internal Medicine, University of Genoa, Genova; Italy
2Prometheus Laboratories Inc., San Diego/United States of America
3Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua, Italy

Contact E-mail Address: gian.pellegrata@gmail.com

Introduction: Adalimumab (ADA) is an anti-TNFα drug approved for patients with refractory luminal Crohn’s disease (CD). Recently, mucosal healing (MH) emerged as a major therapeutic goal in inflammatory bowel disease. Few data are available on ADA trough levels (TL), anti-ADA antibodies (AAAs) during long term follow-up of CD patients, and their potential association with MH and disease outcome.

Aims & Methods: The aim of our prospective study was to evaluate a possible association between achievement of MH, ADA TL, and AAA in CD patients. Moreover, we assessed the influence of ADA introduction between clinical outcome and MH. We prospectively enrolled moderate to severe CD patients who were primary responders to ADA treatment. Blood samples were withdrawn at standardized time points during treatment (0-, 2-, 6-week and every 8 weeks thereafter), before ADA administration. ADA TL were measured using an homogenous mobility shift assay (HMSA; Prometheus Lab, San Diego, United States). Disease activity was assessed by means of Harvey-Bradshaw Index (HBI, remission defined by HBI < 5). As to endoscopic activity, we defined MH in case
of a value of Crohn’s Disease Endoscopic Index of Severity below 8, so far we included 8 complete MH and 12 partial MH, a minimal residual endoscopic activity. Endoscopic evaluation was performed within two weeks of blood sampling, and at least 6 months of ADA treatment.

Results: In our prospective study we enrolled 22 CD patients primary responders to ADA therapy (13 males, median age 39 years, range 23–67 years) who had a median treatment duration of 52 weeks (range 24–121 weeks). ADA TL were significantly higher (P = 0.0002) in patients who achieved MH (12.1 mcg/mL, range 6.8–17.2 mcg/mL) as compared to patients without MH (4.50 mcg/mL, range 1.79–7.99 mcg/mL). Receiver Operating Characteristic curve identified an ADA TL cut-off of 6.43 mcg/mL as the threshold with the highest accuracy for identification of patients who achieve MH (AUROC 0.934, sensitivity 100%, specificity 81.8%, PPV 84.6, PNV 100). Moreover, achievement of MH was associated with absence of AAA (P = 0.012). Lastly, HBI was significantly lower (P = 0.0002) in patients with MH (4, range 3–8) than in patients without (11, range 4–17).

Conclusion: In our cohort of CD patients, we observed a clear association between ADA therapy development, and MH achievement. In this particular, we demonstrated that the cut-off of 6.43 mcg/mL has been identified as the best cut-off to obtain endoscopic remission or at least a minimal residual endoscopic activity. Moreover, we observed that CD patients on ADA therapy who achieved MH had a lower disease clinical activity. Thus, we support our data of therapeutic ADA monitoring for the management of CD patients in order to obtain clinical and endoscopic remission of the disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1016 ULTRASONOGRAPHIC RESPONSE TO ANTI-TNF IS ASSOCIATED WITH BETTER OUTCOMES IN CROHN’S DISEASE

E. Calabrese1, E. Zorzi2, E. Lolli2, S. Onali2, M. C. Fantini1, L. Biancone1, C. Magro2

1Gastroenterology, Department Of Systems Medicine, University of Rome Tor Vergata, Rome/Italy
2Department Of Internal Medicine, Division Of Gastroenterology, University of Rome Tor Vergata, Rome/Italy

Contact E-mail Address: emma.calabrese@uniroma2.it

Introduction: Crohn’s disease (CD) management targets mucosal healing on ileocolonoscopy as a treatment goal.

Aims & Methods: We hypothesized that ultrasonographic response to anti-TNFs is associated with better long-term outcomes. Patients with CD treated with anti-TNFs who had serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, prestenotic dilatation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥12 months apart while on maintenance therapy. At second SICUS, complete responders had no lesions, non-responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year.

Results: Seventy-nine CD patients treated with anti-TNFs (37% with Infliximab, 63% with Adalimumab) were identified. Most patients had ileal disease (67%) and strictureting phenotype (52%). Based on SICUS, thirty-six patients (46%) were complete sonographic responders, 30 partial (38%), and 13 non-responders (16%). Complete and partial responders at SICUS had a reduced risk for surgery in comparison with non responders (p = 0.003 [OR:3.46, CI:1.7–7.00]), p = 0.003 (OR 12, CI:0.6–2.40). Complete responders at SICUS had a reduced incidence of hospitalizations in comparison with non responders (p = 0.04 [OR 4.2, CI:1–17]). Complete and partial responders at SICUS had a reduced risk for need for rescue corticosteroids in comparison with non responders (p = 0.005 [OR:7.8, CI:1.9–32.4], p = 0.002 [OR:5.2, CI:1.7–13.3]).

Conclusion: Ultrasonographic response to medical therapy is associated with significant reductions in long-term risk of surgery, hospitalizations and steroid usage among CD patients. These findings suggest the significance of response assessed by ultrasonography as a treatment target.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1017 CONTINUOUS MONITORING WITH THE TELEMEDICINE TOOL MYIBDCOACH SHOWS AN ASSOCIATION BETWEEN NOVEL STRESS AND INFLAMMATORY BOWEL DISEASE FLARES

D. S. J. Wintjens1, M. De Jong2, A. E. Van Der Meulen - De Jong2, M. Romberg Camps2, M. Beck2, M. H. Verwey2, B. Winkens2, A. A. M. Massee3, D. M. Jonkers4, M. P. E. Keir4

1Department Of Internal Medicine, Division Of Gastroenterology And Hepatology, Maastricht University Medical Center, Maastricht/Netherlands
2Department Of Gastroenterology And Hepatology, Leiden University Medical Center, Leiden/Netherlands
3Department Of Internal Medicine And Gastroenterology, Zuyderland Medical Center, Sittard-Gelder/ Netherlands
4Department Of Gastroenterology, Antonius Medical Centre, Nieuwegein/Netherlands
5Department Of Methodology And Statistics, School for Public Health and Primary Care (CAPPH), Maastricht/Netherlands

Contact E-mail Address: d.wintjens@maastrichtuniversity.nl

Introduction: Inflammatory bowel disease (IBD) is characterized by recurrent episodes of disease activity, which can lead to hospitalisations, surgery, and eventually disease progression. The exact role of psychosocial factors as triggers remains controversial and current literature focuses on the global presence of psychosocial symptoms preceding a flare instead of distinguishing pre-existing factors from novel triggers. In this prospective, cohort study, we aim to explore the impact of newly developed symptoms of anxiety, depression, fatigue, psychological stress, and life events on IBD flares.

Aims & Methods: IBD patients were recruited from the MyIBDCoach study cohort (de Jong et al., Lancet 2017, in Press). MyIBDCoach is a telemedicine tool to monitor IBD patients at home. During the 12-month study period, participants reported on disease activity and psychosocial parameters (including psychological stress, anxiety, depression, fatigue, and life events) through MyIBDCoach every 1–3 months. Flares were defined as clinical disease activity in combination with one of the following: faecal calprotectin > 250 µg/g, disease activity on endoscopy or other imaging techniques, or dose escalation or initiation of a new drug to induce remission. For all psychosocial parameters, a binary variable was created to indicate whether symptoms were newly developed or pre-existing with reference to the previous measurement, thereby correcting for invariability. A generalized estimating equation model was used to separately determine which psychosocial parameters were associated with flares in the three preceding months, correcting for immortal time bias after a flare and adjusting for gender, disease phenotype, smoking status and disease duration.

Results: In total, 2748 measurements from 381 IBD patients were included. Fifty-five (15%) and 37 (10%) experienced a flare during the study. The median time between flare and the next evaluation was 1.3 months. Flares were associated with newly developed psychological stress was associated with a flare in the following three months (odds ratio [OR] = 3.01; 95% CI = 1.48, 6.12). Newly reported symptoms of depression (OR = 1.29; 95% CI = 0.53, 3.14), anxiety (OR = 1.06; 95% CI = 0.46, 2.43), fatigue (OR = 0.41, 95% CI = 0.04–4.38), or life events (OR = 2.07; 95% CI = 0.94, 4.64) were not significantly associated, although the latter did occur more frequently before flares.

Conclusion: Newly developed psychological stress is associated with disease flares in IBD patients. Therefore, in clinical monitoring centres such as our own, interventions such as mindfulness and coaching might be interesting to prevent flares and eventually improve disease course.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1018 STRAIN ELASTOGRAPHY AND DIFFERENTIAL DIAGNOSIS OF INFLAMMATORY AND FIBROTIC STRUCTURES IN CROHN’S DISEASE

L. P. Orlova, T. V. Samsonova, I. Khalit, M. Shapina, P. Evgrafov

Department Of Ultrasound, State Scientific Centre Of Colorography named after A.N. Ryzhik of the Russian Ministry of Healthcare, Moscow, Russian Federation, Moscow/Russian Federation

Contact E-mail Address: lporlova2013@yandex.ru

Introduction: Strain elastography has become a new emerging technique in ultrasonic diagnostics of gastrointestinal pathology. Currently there is few published data on the use of elastography for making the diagnosis and following the course of inflammatory bowel diseases.

Aims & Methods: Objective. To assess the accuracy of strain elastography concerning stricture detection in Crohn’s disease (CD).

Materials and Methods. Twenty four patients aged between 18 and 43y were included into the study, 1 of them having a colonic stricture, 1 patient having a stricture of ileo-transverse anastomosis and 22 patients having a stricture in the small intestine. Surgical treatment was carried out in 22 patients, in each case histopathological examination of surgical specimens was conducted. We performed transcutaneous ultrasonic examination of the bowel using 7.5 MHz linear and 3.5 MHz convex probes with power Doppler mode and colonoscopy in all 24 patients. Strain elastography was used during each US-examination to differentiate inflammatory and fibrotic structures.

Results: Ultrasonic examination invariably showed local narrowing of the intestinal lumen in stricture sites. Inflammatory structure length was 29 mm (21.1–55.5), (median (2.5th - 97.5th percentile)) with intestinal wall thickening of 6 mm (4.23–8.27), and the presence of ulcers. The lesion length in fibrotic stricture was 30 mm (20–60), wall thickness –6 mm (4.18–8.27), ulcers were visualized either. In 22.7% of cases we observed the signs of partial bowel obstruction. Strain ratio (SR) values for inflammatory structures were 1.53 (0.43–3.17), for fibrotic structures – 4.19 (1.57–6.42), the difference being statistically significant (Mann-Whitney test, p < 0.05).

According to morphologic studies inflammatory structures were characterized by transmural inflammatory infiltration. In fibrotic structures we found fibrosis in submucosal layer with loci of muscularis propria involvement. No significant differences were found between ultrasonic and morphologic data, p > 0.05.
Conclusions: The proposed ultrasonic and elastographic signatures of stricturing CD feature strong discrimination of fibrotic and inflammatory strictures, helping to choose appropriate surgical treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1019 INFLAMMATORY BOWEL DISEASE DISABILITY INDEX INFLAMMATORY BOWEL DISEASE: RELATIONSHIP WITH DISEASE CHARACTERISTICS AND QUALITY OF LIFE IN A COHORT OF SICILIAN PATIENTS

G. C. Morrelle1, E. Gianquinto2, V. Calvaruso1, M. G. Cilluffo1, B. Scrivo1, M. Cappello1, M. Cappello1
1Di.Cibi.un., Gastroenterology and Hepatology Unit, Palermo/Italy
2Di.Cibi.un., Policlinico Paolo Giaccone, Palermo/Italy

Contact E-mail Address: dottgianquetonomorrelle@gmail.com

Introduction: IBDs are disabling conditions that negatively affect physical, psychological, familial and social dimensions of life. The concept of quantifying disability is essential for the planning of many other therapeutic interventions. Thus, specific tools have been used to assess the impact of disease and its treatments on relevant end-points such as health-related quality of life (HRQL), measured by the IBD-Questionnaire (IBD-Q). Recently, the IBD-Disability Index (IBD-DI) has been developed to evaluate the entire spectrum of limitations in functioning in patients with IBD. This index is inspired to the International Classification of Functioning, Disability and Health (ICF). The aim of the present study was to assess the relationship between the IBD-DI, clinical characteristics and HRQL in a cohort of Sicilian patients with ulcerative colitis (UC) and Crohn’s disease (CD) followed up in a referral center.

Aims & Methods: IBD-DI and IBD-DI questionnaires were administered to consecutive UC and CD adults outpatients from July 2016 to April 2017. The IBD-DI consists of 28 items that evaluate the 4 domains of body functions, activities and participation, body structures and environmental factors. IBD-DI consists of 32 questions grouped into 4 dimensions: bowel, systemic, social, emotional. Scores range from 1 (poorest QoL) to 7 (best QoL) with higher scores indicating better QoL. Disease activity was assessed by partial Mayo score for UC and by Harvey-Bradshaw Index for CD. The mean differences of DI score in relation to disease extension, extraintestinal manifestations. By linear regression analysis we assessed the relationship between DI and IBD-Q.

Results: Data from UC and CD patients were analysed separately. 100 UC patients (59% males, median age 49 years) were enrolled; 17% were smokers. 83% had inactive or mild disease, 17% moderate disease. None of the recruited patients had severe disease. Concomitant medications at the time of the interview were: conventional therapy (5-aminosalicylic acid, oral steroids) in 72 patients (72%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 28 patients (28%). The mean IBD-DI score was 23.15 ± 17.49; 62% of patients had low DI ≤ 25 (62/100) while 7% had high DI (>50). No correlations were found between IBD-DI and gender, disease duration, disease extension (Montreal Classification) and immunosuppressive therapy. IBD-DI was related to clinical disease activity (p = 0.001) and extraintestinal manifestations (p = 0.005).

Conclusion: The proposed ultrasonic and elastographic signatures of stricturing CD feature strong discrimination of fibrotic and inflammatory strictures, helping to choose appropriate surgical treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1020 Dipeptidyl Peptidase 4 (DPP-4): A Biomarker of Disease Activity and Prognosis in Inflammatory Bowel Disease

P. Pinto-Lopes1, J. Afonso1, G. Macedo2, F. Magro1
1Department Of Biomedicine – Pharmacology And Therapeutics Unit. Internal Medicine Department, Faculty of Medicine of Porto University. Hospital São João, Porto, Porto/Portugal
2Department Of Gastroenterology, Hospital São João, Porto, Porto/Portugal

Contact E-mail Address: pedro.lopes.md@gmail.com

Introduction: DPP-4 is a membrane-bound glycoprotein expressed on the cell surface of several intercytes and lymphocytes. It is released in plasma, maintaining its proteolytic activity and inactivating cytokines, chemokines and neuropeptides.

Aims & Methods: We aimed to investigate the diagnostic and prognostic value of DPP-4 in patients with inflammatory bowel disease (IBD). A total of 203 adult patients (n = 149 IBD patients; n = 42 healthy controls; n = 12 immune controls - systemic lupus erythematosus (SLE) in remission) were prospectively recruited. Plasma DPP-4 was analysed in all groups: faecal samples from IBD patients were collected before DPP-4 and calprotectin analysis. Disease activity was assessed by the Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD), the partial Mayo Score (pMS) for Ulcerative colitis (UC) and the Systemic Lupus Erythematosus Disease Activity Index for SLE. A multi-biomarker model was derived using logistic regression to evaluate predictors of disease activity and Cox regression to evaluate predictors of treatment escalation (disease outcome). Treatment escalation was defined as the need for escalation to immunomodulatory/biologic therapies or intestinal resection surgery, as a consequence of a disease flare.

Results: Median plasma DPP-4 values were lower in remission in UC patients (HBI = 0) than in active disease (HBI > 5). Median plasma DPP-4 values were lower in remission in UC patients (HBI = 0) than in active disease (HBI > 5). Median plasma DPP-4 values were lower in remission in UC patients (HBI = 0) than in active disease (HBI > 5). Median plasma DPP-4 values were lower in remission in UC patients (HBI = 0) than in active disease (HBI > 5).

Conclusion: Median plasma DPP-4 and CRP values were independent predictors of disease activity and an increase in DPP-4 correlates with serum calprotectin levels (FC = 0.61, P = 0.001, C-reactive protein (CRP) (FC = 0.60, P = 0.001 and HBI (r = -0.56, P < 0.01), while no statistically significant correlation was found with faecal CRP-4. UCL, plasma DPP-4 correlated moderately with FC (r = -0.31, P < 0.05) and CRP (r = -0.32, P < 0.05), strongly with pMS (r = -0.52, P < 0.01) and with faecal DPP-4 (r = 0.52, P < 0.01). The multivariable logistic regression model showed that plasma DPP-4 and CRP are independent predictors of CD activity (OR: 65.90; 95% CI: 4.96–857.53; P = 0.002 and OR: 48.19; 95% CI: 3.35–492.76; P = 0.004, respectively). At follow-up (median 578 days; IQR: 426–688), plasma DPP-4 and CRP independently predicted treatment escalation in CD (hazard ratio (HR) 9.09; 95% CI: 1.77–46.57; P = 0.008 and HR 12.23; 95% CI: 2.30–64.98; P = 0.003, respectively). At 1 year, the proportion of patients who needed treatment escalation was 66% in CD and 41% in UC, if ≥ 2 biomarkers criteria were met.

Disclosure of Interest: F. Magro: Has received fees for speaking engagements from ScheringPlough/MSD, Abbvie, Lab Vitória, and Dr Falk Pharma Portugal, and fees for consultations and honoraria from MSD.

All other authors have declared no conflicts of interest.

P1021 ROLE OF PET-CT TO ASSESS DISEASE ACTIVITY IN ULCERATIVE COLITIS AND ITS CORRELATION WITH CLINICAL, BIOLOGICAL, ENDOSCOPIC, HISTOPATHOLOGICAL AND GENETIC MARKERS

Di. stomach, Endoscopy Unit, Hospital Chandigarh, India

Contact E-mail Address: nehaberry86@hotmail.com

Introduction: Disease activity in ulcerative colitis (UC) is best assessed clinically by Mayo score and endoscopy. Positron emission tomography –computed tomography (PET-CT) is a non-invasive imaging technique to assess disease activity, extent, treatment response in UC, specially in pediatric population, sick patients and those unwilling for endoscopy.
Aims & Methods: We conducted a prospective observational study at our tertiary care centre with the aim of assessing and correlating UC disease activity by clinical criteria, endoscopy, histology, serum and fecal biomarkers and PET-CT. 60 eligible patients of UC were enrolled into 3 groups (26 remission, 24 moderate and 10 severe activity) as per Mayo score and 18F FDG PET-CT was performed within 72 hours of endoscopy. ESR, CRP and fecal calprotectin levels were determined for all patients.

Results: Of 60 enrolled patients, 10% had proctitis, 43.3% had left-sided colitis and 46.7% had extensive colitis. ESR, CRP, fecal calprotectin levels and rectal PET activity were significantly higher in patients with moderate and severe disease activity as compared to those in remission. Rectal PET activity showed a significant correlation with the Mayo score (k = 0.465, p < 0.001), endoscopic sub-score (k = 0.526, p < 0.001), histological score (k = 0.496, p < 0.001) and fecal calprotectin levels (k = 0.279, p = 0.031). Extent evaluation by PET-CT and colonoscopy also showed a significant correlation (k = 0.582, p < 0.001) with each other. We found that CRP at a cut-off level of <12 mg/L had a sensitivity of 70.59% and specificity of 92.3%, and fecal calprotectin at a cut-off level of <143 ug/g had a sensitivity of 82.35% and specificity of 88.46% to predict remission. Besides, PET-CT identified sacroilitis in 1, mesenteric lymphadenopathy in 5, mesenteric stranding in 4, and adenocarcinoma in 1 patient.

Conclusion: PET-CT is a reliable non-invasive tool for assessing disease activity in UC with good correlation with the Mayo score, endoscopic score, histology and fecal calprotectin. It is an accurate measure to determine disease extent, and a good predictor of remission. Thus, with a better patient compliance, it holds promise in replacing colonoscopy where it is refused or difficult to perform.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1023 THE IMPACT OF AN INFLAMMATORY BOWEL DISEASE EDUCATION CLINIC ON PATIENT OUTCOMES AND RESOURCE UTILISATION

W. On, B. Collins, H. Stanley, A. Westhoff, S. Tynan, D. Mcclements, Y. Theis, J. Melindon, R. Chandy, A. Bassi
Contact E-mail Address: weiheng.on@gmail.com

Introduction: Patient education and awareness in those who have inflammatory bowel disease (IBD) and is regarded by the United Kingdom (UK) IBD standards group as a key standard in the provision of care towards patients with IBD. Our district general hospital implemented an IBD education clinic in 2015 with input from a quarterly forum by a multidisciplinary panel of doctors, specialists, nurses, pharmacists and dietitians. Patients who have been newly diagnosed with IBD are invited to attend this clinic. Clinic attendees are given an overview of their disease, treatment modalities, options of non-medical support (e.g. psychology) and are made aware of our telephone helpline open access service. To date, there has not been any published data on the impact of an IBD education clinic on resource use or patient outcomes.

Aims & Methods: We aimed to evaluate the impact of the education clinic on resource use in patients who attended the clinic compared to patients who did not. A retrospective analysis was done of patients who were diagnosed with IBD between January 2013 and May 2015. 40 patients were identified and divided equally (20 patients each) into clinic attenders (CA) and non-attenders (NA).

Results: The median age was 37 in the CA group and 33 in the NA group. In the CA group, patients were divided equally (20 patients each) into clinic attenders (CA) and non-attenders (NA). Resource use was determined at 12 months from diagnosis in the NA group and 12 months from attendance in the CA group. The median time from diagnosis to clinic attendance in the CA group was 7 months. Data was obtained from our hospital’s electronic database system. Statistical analysis was carried out with the student’s t-test.

Conclusion: In our cohort of patients, patients who attended the IBD education clinic were more likely to utilise our open access IBD telephone helpline service. There was a trend towards increased frequency of outpatient clinic appointments and blood tests in patients who did not attend the IBD education clinic although this was not statistically significant. There were no differences in the rates of hospital admissions or steroid courses in either group. The limitations of our data include the small sample size and short follow-up period.

Disclosure of Interest: All authors have declared no conflicts of interest.

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1UOC Internal Medicine and Gastroenterology, Gastroenterology Area, Fondazione Policlinico A. Gemelli, Catholic University of Sacred Heart, Rome; Italy
2Pathology, Case Western Reserve University, Cleveland/United States of America

Contact E-mail Address: lopesotulio@libero.it

Introduction: Tumor necrosis factor (TNF) inhibitors (anti-TNF) are considered to be effective in inducing mucosal healing in patients with moderate-to-severe Ulcerative Colitis (UC). The role of IL-33 and its receptor, ST2, in intestinal inflammation is incompletely understood, with both pro-inflammatory and regulatory properties described. Recent evidence has shown that anti-TNF is able to modulate the IL-33/ST2 axis in inflammatory conditions. We aimed to explore the potential role of the IL-33/ST2 axis in the mucosal healing process mediated by anti-TNF therapy in UC.

Aims & Methods: The aim of our study was to explore the potential role of the IL-33/ST2 axis in the mucosal healing process mediated by anti-TNF therapy in UC. Endoscopic Mayo score was calculated before the first anti-TNF infusion (T0) and after 6 weeks (T2). 24 UC patients (Mayo score at T0 ≥ 2) were enrolled. 12 healthy controls undergoing routine colonoscopy for mucosal screening were also enrolled. At each time point, serum samples were collected and ELISA performed to assess IL-33, ST2 protein levels. Intestinal biopsies were also taken from the rectum and IHC was done to evaluate mucosal IL-33/ST2 expression and localization.

Results: IL-33 protein levels were significantly increased in responders vs. non-responders, both at T0 and T2. Among responders, IL-33 protein was slightly reduced at T2 vs. T0, while unchanged in non-responders. Interestingly, significantly higher levels of ST2 were found in responders vs. non-responders at T0, with no differences between groups were found at T2. Among responders, ST2 levels were dramatically reduced at T2 vs. T0. No significant differences were found in non-responders at both time points. Healthy controls showed significantly lower levels of both IL-33 and ST2 compared to other groups. IHC confirmed these observations. In particular, IL-33 and ST2 staining was more intense within the inflamed and ulcerated mucosa of responders compared to non-responders at T0. After 6 weeks, ST2 staining was even more evident in responders, notably localized to the healed mucosa and in close proximity to areas of re-epithelialization. Little to no staining for both IL-33 and ST2 was present in healthy controls.

Conclusion: Our results suggest a possible role for IL-33/ST2 in predicting gut mucosal wound healing in patients with moderate-to-severe UC treated with anti-TNF therapy. Further studies are underway to determine mechanisms of action that support these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1026 CORRELATION BETWEEN CLINICAL, ENDOSCOPIC AND HISTOLOGICAL ACTIVITY IN INFLAMMATORY BOWEL DISEASE: A PROSPECTIVE STUDY

B. Ner1, A. Ruif1, S. Romeo1, E. Grasso1, F. Zorzo2, G. Palmieri2, L. Biancone1
1Medicina Dei Sistemi, Università degli studi di Roma Tor Vergata, Roma/Italy
2Anatomia Patologica, Università degli studi di Roma Tor Vergata, Roma/Italy

Contact E-mail Address: benedettotoni@gmail.com

Introduction: Several histological scores of activity have been developed in Inflammatory Bowel Disease (IBD). However, their usefulness in clinical practice and the correlation between clinical, endoscopic and histological scores is undefined.

Aims & Methods: To assess, in a prospective study, the correlation between clinical, endoscopic and histological activity scores in a cohort of IBD patients (pts) undergoing colonoscopy. Secondary end-point was to assess the role of histological scores in clinical efficacy assessment of anti-TNF therapy.

Results: A total of 67 consecutive CD pts undergoing routine colonoscopy were included in the analysis. Median age: 46 years (range: 18-77). Median disease duration: 12 months (range: 3-350). 29 pts with CD were enrolled. IBD activity scores were calculated at each colonoscopy visit.

Conclusion: We report the results from a prospective study on the correlation between clinical, endoscopic and histological activity scores in patients with Crohn's disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
active in 5% (12%), in remission in 35 (88%) pts. Endoscopic activity: CD. Complete endoscopy was incomplete in 2/40 pts. In the 24 pts with no previous surgery, SES-CD was: 0 (n = 4); 1 (n = 3) (4 = n = 3); 2; 0 (n = 2); 11 (n = 1); 12 (n = 1); 13 (n = 1); 14 (n = 1); 17 (n = 1); 19 (n = 1) pts (median 4 [0–
19]; activity: 20/24 [80%], remission: 4/24 [20%]). In the 16 pts with previous surgery, the Rutgeerts’ score was: 0 (n = 3); 1 (n = 1), 2 (n = 6); 3 (n = 2) 4 (n = 4); recurrence: 12/16 [75%]. Histologic activity: CD. The GHAS was 0 (n = 3); 1 (n = 1); 2 (n = 3); 4 (n = 1); 6 (n = 2); 7 (n = 1); 9 (n = 1) in pts without previous surgery, and 0 (n = 3); 1 (n = 3); 2 (n = 1); 10 (n = 1) in pts with previous surgery. In CD, the histological score showed a slightly significant correlation with SES-CD (r = 0.41 ± p = 0.046) and no correlation with the Rutgeerts’ score (r = 0.31 ± p = 0.247).

Conclusion: In a prospective study, a significant correlation was observed between clinical, endoscopic and histological activity in UC. Histological activity may be observed in UC patients in endoscopic remission, thus suggesting that this finding may represent a predictive marker of clinical relapse.

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PI027 THE RELATIONSHIP BETWEEN SERUM INFlixIMAB AND ADALIMUMAB LEVELS WITH THE CORRESPONDING ANTIDRUG ANTIBODY LEVELS: ANALYSIS OF OVER 50,000 PATIENT RESULTS USING LAB-DEVELOPED CHEMILUMINESCENT IMMUNOASSAYS

K. Y. Chun1, J. Yang2
1Esoterix Specialty Medicine, Labcorp, Calabasas/United States of America/CA
2Medical Affairs, Labcorp, Calabasas/United States of America/CA

Contact E-mail Address: chunk@labcorp.com

Introduction: Assays to measure TNF inhibitors and anti-drug antibodies (ADAb) in patient serum are being utilized to manage failure to respond and adverse outcomes of immunomodulators in IBD. Vedolizumab (VDZ), a humanized monoclonal antibody that targets the α4β7 integrin, has been approved for the treatment of moderately-to-severely active Crohn’s disease (CD) and ulcerative colitis (UC).

Aims & Methods: The aim was to assess the real-world use of IM therapy and compare outcomes in IBD patients with, versus without a history of IM use, who initiated treatment on VDZ in the United States. The Explorys Universe database was used to identify all IBD patients > 18 years of age who: (1) initiated VDZ therapy between May 20, 2014, and February 22, 2016 (the date of VDZ initiation was the assigned index date); and (2) had 365 days of available data pre- and post-index date (follow-up). Patients were stratified based on the use of IM at any point in their treatment history before the index date. Key outcomes in the follow-up period included the use of IM; and the incidence of IBD-related surgeries, hospitalizations, and flares (defined as the use of intravenous corticosteroids, IBD-related surgeries, or hospitalizations).

Results: A total of 567 patients were included, of which 68% had CD, and 31.6% had UC. Mean (standard deviation [SD]) age at index was 44 (15.0) years; 58.6% were female. Overall, 54.6% had a history of prior IM use, and 64.6% received anti-TNFs before starting VDZ therapy. On average, patients initiated VDZ 4.3 (SD 3.6) years following their initial diagnosis. Of the 54.6% of patients with a history of IM therapy, 61.0% did not use IM during maintenance treatment and 54.5% did not use IM during the follow-up period. Of the 45.4% of patients without a history of IM use, 87.0% did not initiate IM therapy during follow-up. Amongst VDZ patients with a history of IM vs. without history of IM use, there was a trend of increased flares (38.7% vs. 30.0%, p = 0.034), hospitalizations (21.9% vs. 19.5%, p = 0.60); and surgeries (10.6% vs. 6.6%, p = 0.103). Findings for UC and CD patients are presented in Table 1.

Conclusion: The majority of patients with a history of IM use did not use IM therapy after initiating VDZ in a real-world clinical practice. The use of IM after initiating VDZ was also low amongst patients without a history of IM use. Lower rates of healthcare resource utilization were observed amongst patients without a history of IM use. Further research is needed to better understand the degree to

Table 1: Anti-Infliximab Antibody Distribution and Corresponding Mean Free Drug Levels

<table>
<thead>
<tr>
<th>Anti-Infliximab</th>
<th>Mean Drug Concentration (ug/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibody Level</td>
<td>% with</td>
</tr>
<tr>
<td>Range (ng/mL)</td>
<td>ug/mL</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
</tr>
<tr>
<td>undetectable</td>
<td></td>
</tr>
<tr>
<td>22–100</td>
<td>6785</td>
</tr>
<tr>
<td>101–200</td>
<td>2684</td>
</tr>
<tr>
<td>201–300</td>
<td>1344</td>
</tr>
<tr>
<td>301–500</td>
<td>1427</td>
</tr>
<tr>
<td>501–700</td>
<td>789</td>
</tr>
</tbody>
</table>

(continued)
which IM therapy is used concomitantly with VDZ and potential impact on outcomes in real-world clinical practice.

**Disclosure of Interest:** M. Rauly Callado: Mirixa Rauly Callado is a full-time employee of Evidera.
R. Carroll: Robert Carroll is a full-time employee of Evidera.
R. Curtis: Employee of Takeda Development Centre Ltd.
M.J. Khalid: Employee of Takeda Development Centre Ltd.
H. Patel: I am currently an employee of Immensity Consulting Inc., which received funding from Takeda Development Centre Ltd.

### P1029 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE

**C. Monast**1, K. Li2, E. Mysklin3, C. Brodermerkel3, J. Friedman1, F. Baribaud4
1Janssen Research & Development, LLC, Spring House/United States of America/PA
2Clarivate Analytics, Boston/United States of America/MA

**Introduction:** Biomarkers of inflammatory bowel disease activity have been researched for decades but objective markers of disease severity that support clinical decision-making are still needed. Well-established markers include serum C-reactive protein and fecal calprotectin, but their use as a standalone surrogate for disease activity has been controversial. We hypothesize that novel objective markers of tissue inflammation are best identified at the site of disease with a tissue-level assessment of disease activity.

**Aims & Methods:** Biopsy samples were obtained from participants in the UNITI trials of ustekinumab in moderate-to-severe Crohn’s disease. The UNITI induction trials included two cohorts, patients who failed ≥1 TNF antagonists (UNITI-1) or patients who failed conventional therapies (UNITI-2). Pairs of adjacent biopsies were taken from the rectum, splenic flexure, and ileum. One biopsy from each pair was assessed by Global Histology Disease Activity Score (GHAS) while the other was submitted to microarray analysis. Partial least squares regression and random forest were used to identify biomarkers associated with histological severity in the UNITI-1 cohort. Robustness of the resulting models was assessed using cross-validation within the training set and multiple external validation sets (defined within the UNITI-1 and UNITI-2 cohorts).

**Results:** In UNITI-1, a single multivariate model comprising 16 genes was identified that predicted histological activities in rectum or splenic flexure biopsies. This model was characterized by R² = 0.78 for the training set, and R² = 0.59, 0.54, and 0.32 on external validation sets also from UNITI-1. A separate 14-gene model capturing histological activity in ileal biopsies was characterized by R² = 0.5 for the training set and R² = 0.45 in the external validation set. In general, both models contained genes related to tissue degradation, barrier function, and immune regulation, including CXCL11 (T-1-αC). Both models retained performance in external validation datasets from UNITI-2 but exhibited lower performance. De novo models generated from UNITI-2 also exhibited lower performance. Indeed, weighted gene co-expression network analysis indicated weaker associations between gene expression and histology scores for UNITI-2 compared to UNITI-1 subjects.

**Conclusion:** Our analysis supports the ability of biopsy transcriptomics combined with machine learning approaches to capture disease-relevant variability in Crohn’s disease and, more importantly, supports the use of similar approaches to identify additional surrogate markers. Interestingly, this approach was more successful in the TNF antagonist failure cohort compared to the conventional therapy failure cohort. We hypothesize that this is related to increased strength of the transcriptional signal in the TNF antagonist failure cohort. We identified specific genes that could be used together as surrogates for histologic measurement, which may not be susceptible to the subjectivity inherent in GHAS scoring. Finally, the specific genes identified by our analysis provide insight into the molecular processes driving histological disease activity in Crohn’s disease.

**Disclosure of Interest:** C. Monast: Janssen Research & Development, LLC employee
K. Li: Janssen Research & Development, LLC employee
E. Mysklin: Consultant to Janssen Research & Development, LLC
C. Brodermerkel: Janssen Research & Development, LLC employee
J. Friedman: Janssen Research & Development, LLC employee
F. Baribaud: Janssen Research & Development, LLC employee

**Reference:**

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### P1030 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN’S DISEASE PATIENTS HAVING FAILED ANTI-TNF THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS

**L. Mesana**1, M. Pacou2, D. Naessens3, S. Sloan4, A. Gauthier1
1Amaris, London/United Kingdom
2Amaris, Paris/France
3Janssen Pharmaceutica, Beerse/Belgium
4Janssen Global Services, Horsham/United States of America/PA

**Introduction:** Indirect evidence is needed to inform the clinical efficacy of ustekinumab in Crohn’s disease (CD). Indirect treatment comparisons in CD are challenged by withdrawal trial designs limiting placebo arm transitivity. This treatment sequence analysis builds on previous work proposing a solution to challenges inherent to CD data to compare one year efficacy of biologics in CD patients having failed anti-TNF therapy. Analyses accounted for delayed responders (induction non-responders attaining response after additional doses) to generate more comprehensive estimates of biologics’ relative efficacies.

**Aims & Methods:** A systematic literature review identified randomized controlled trials in CD patients having failed anti-TNF therapy for induction and maintenance of ustekinumab (UST), adalimumab (ADA), or vedolizumab (VDZ). Clinical response (CDAI-100 point reduction) and remission (CDAI < 150) were assessed. The probability of achieving response after induction was multiplied by the conditional proportional of maintaining response/achieving remission at one year. Separate calculations were conducted for early and delayed responders. Their respective treatment sequence rates were summed to obtain overall response and remission rates. Placebo rates were imputed using data from patients induced and maintained on placebo from the IM-UNITI study, adjusted for responder and remitter induction rates. Bayesian analyses generated relative efficacies.

**Note:** IM therapy included use of azathioprine, 6-mercaptopurine, methotrexate, mycophenolate mofetil, cyclosporine, and Tacrolimus

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**Abstract:**

<table>
<thead>
<tr>
<th><strong>CD (N = 388)</strong></th>
<th><strong>UC (N = 179)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>With history of IM use (N = 225)</td>
<td>Without history of IM use (N = 163)</td>
</tr>
<tr>
<td>Mean (SD) age, years</td>
<td>43 (14.8)</td>
</tr>
<tr>
<td>Female, %</td>
<td>64.9%</td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis to VDZ initiation, years</td>
<td>6.0 (3.9)</td>
</tr>
<tr>
<td>Pre-index exposure to anti-TNF therapy, %</td>
<td>78.2%</td>
</tr>
</tbody>
</table>

**IBD-related measures in the 365 days pre-index**

<table>
<thead>
<tr>
<th></th>
<th><strong>Hospitalisations</strong></th>
<th><strong>Surgeries</strong></th>
<th><strong>Flares</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CD</strong></td>
<td>42.2%</td>
<td>18.7%</td>
<td>56.9%</td>
</tr>
<tr>
<td><strong>UC</strong></td>
<td>28.8%</td>
<td>6.7%</td>
<td>43.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Hospitalisations</strong></th>
<th><strong>Surgeries</strong></th>
<th><strong>Flares</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CD</strong></td>
<td>24.9%</td>
<td>12.4%</td>
<td>43.6%</td>
</tr>
<tr>
<td><strong>UC</strong></td>
<td>20.2%</td>
<td>7.4%</td>
<td>32.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Hospitalisations</strong></th>
<th><strong>Surgeries</strong></th>
<th><strong>Flares</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CD</strong></td>
<td>26.1%</td>
<td>11.4%</td>
<td>39.4%</td>
</tr>
<tr>
<td><strong>UC</strong></td>
<td>21.4%</td>
<td>7.1%</td>
<td>33.4%</td>
</tr>
</tbody>
</table>
odds ratios (OR), credible intervals (CrI), and posterior distribution probabilities for superiority of UST.

Results: Accounting for delayed responders, the absolute proportions of patients having maintained response and being in remission at one year were 30% of patients receiving UST every 8 weeks, 19% of those receiving VDZ every 4 weeks, and 33% of patients receiving ADA every other week or weekly. Based on a one-year treatment sequence analysis, probabilities for UST to be better than VDZ for achieving and maintaining response and remission were 99% (OR[CrI]:1.94[1.07;3.48]) and 98% (OR[CrI]:1.32[1.00;2.36]), respectively. UST had higher likelihoods of remission than ADA given weekly (ORS: OR[CrI]:1.36[0.72;2.58]) or every other week (85%, OR[CrI]:1.41[0.74;2.68]).

Conclusion: This approach deals with methodological issues inherent to CD trial data. In CD patients having failed anti-TNF therapy, ustekinumab had higher likelihood of response or remission than adalimumab and vedolizumab over a one-year treatment sequence. Additional induction doses and continued maintenance therapy with ustekinumab have demonstrated benefits in delayed responders compared to other biologics. Previous research is limited to indirect treatment comparisons in early responders only. Including delayed responders provides a more accurate picture of CD patients’ response to biologics and better informs clinical practice.


Reference

P1031 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN’S DISEASE PATIENTS HAVING FAILED CONVENTIONAL THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS

L. Mesana1, M. Pacou2, D. Naessens3, S. Sloan4, A. Gauthier4
1Amaris, London/United Kingdom
2Amaris, Paris/Paris
3Janssen Scientific Affairs, Bruxiss/Beire/Belgium
4Janssen Global Services, Horsham/United States of America/P4

Contact E-mail Address: laura.mesana@amaris.com

Introduction: Indirect evidence is needed to inform the clinical efficacy of ustekinumab in Crohn’s disease (CD). Indirect treatment comparisons in CD are challenged by withdrawal trial designs limiting placebo arm transitivity. This study used data from randomized, controlled trials in CD patients having failed conventional therapy. Analyses accounted for delayed responders (induction non-responders attaining response after additional dosing) to generate more comprehensive estimates of biologics’ relative efficacies.

Aims: To systematically review randomized controlled trials in CD patients having failed conventional therapy for induction and maintenance of ustekinumab (UST), adalimumab (ADA), or vedolizumab (VDZ). Clinical response (CDAI-100 point reduction) and remission (CDAI <150) were assessed. The probability of achieving response after induction was multiplied by the conditional probability of maintaining response/achieving remission at one year. Separate calculations were conducted for early and delayed responders. Their respective treatment sequence rates were then summed to obtain overall response and remission proportions.

Methods: Placebo rates were imputed using data from patients induced and maintained on placebo from the IM-UNITI study and adjusted for responder and remitter induction rates. Bayesian analyses generated relative odds ratios (OR), credible intervals (CrI), and posterior distribution probabilities for superiority of ustekinumab.

Results: When accounting for delayed responders, the absolute proportions of patients having maintained response and being in remission at one year were of 50% in patients receiving UST, 39% in those receiving VDZ, and 33% in patients receiving ADA every other week or weekly. Based on a one-year treatment sequence analysis, probabilities for UST to be better than VDZ for achieving and maintaining response and remission were 99% (OR[CrI]:1.94[1.07;3.48]) and 98% (OR[CrI]:1.32[1.00;2.36]), respectively. UST had higher likelihoods of remission than ADA given weekly (ORS: OR[CrI]:1.36[0.72;2.58]) or every other week (85%, OR[CrI]:1.41[0.74;2.68]).

Conclusion: This approach deals with methodological issues inherent to CD trial data. In CD patients having failed conventional therapy, higher likelihoods of response or remission were observed for ustekinumab versus adalimumab and vedolizumab over a one-year treatment sequence. Additional induction doses and continued maintenance therapy with ustekinumab in delayed responders have demonstrated benefits compared to other biologics. Previous research is limited to indirect treatment comparisons in early responders only. Including delayed responders provides a more accurate picture of CD patients’ response to biologics and better informs clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1032 EFFICACY AND TOLERABILITY OF INITIATING, OR SWITCHING TO, INFliximab Biosimilar CT-P13 IN INFLAMMATORY BOWEL DISEASE (IBD): A LARGE SINGLE-CENTRE EXPERIENCE

R.P. Ratnakumaran, N. To, D. Gracie, C. Sehniger, T. Clark, N. Carey, G. Dowson, K. Leigh, B. Lourner, A. Ford, P. J. Hamlin

Gastroenterology, Leeds Teaching Hospital, Leeds/United Kingdom

Contact E-mail Address: raguprakash.ratnakumaran@nhs.net

Introduction: Anti-TNF therapies have revolutionised the management of IBD. Recently, the infliximab (IFX) biosimilar (CT-P13) received market authorisation for IBD allowing cost benefits with switches to CT-P13 with annual savings of £5,400 per patient (70 kg patient, receiving 5 mg/kg w 8 weekly). We present our experience of switching patients from the originator IFX to CT-P13 for new and existing patients.

Aims & Methods: Recorded baseline characteristics included indication, age, sex, disease duration, treatment duration, concomitant immunomodulators, baseline CRP and HBI/Mayo scores. Response to IFX induction was assessed retrospectively using symptoms and CRP. Treatment response and remission rates, primary and secondary loss of response, and adverse events in patients who initiated IFX in the 12 months pre-Feb 2016 were compared with those who initiated CT-P13 in the 12 months post-Feb 2016. Sustained response was compared for existing IFX patients who switched to CT-P13 in Feb 2016 against those who continued with the original IFX. Drug and antibody levels were measured before switch and at 3, 6, and 12 months post.

Results: 53 patients commenced IFX in the 12 months pre-Feb 2016 (26 Crohn’s Disease (CD), 13 fistulising CD, 13 Ileal Crohn’s (ICU), 1 BBD-Undiagnosed (BD-U)) compared with 69 patients who commenced CT-P13 in the 12 months post-Feb 2016. Patients were compared for existing IFX patients who switched to CT-P13 in Feb 2016 against those who continued with the original IFX. Drug and antibody levels were measured before switch and at 3, 6, and 12 months post.


Reference

P1033 SAFETY AND EFFICACY OF HELICOBACTER PYLORI ERADICATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

S. Shinkazi1, T. Fuji2, S. Bamba1, T. Kobayashi3, H. Tanaka2, T. Yoshino6, A. Yamada1, N. Kamata4, T. Hibi4
1Department Of Gastroenterology And Hepatology, Osaka University Graduate School of Medicine, Suita/Japan
2Department Of Gastroenterology And Hepatology, Tokyo Medical and Dental University, Tokyo/Japan
3Division Of Gastroenterology, Shiga University of medical science, Shiga/Japan
4Center For Advanced Ibd Research And Treatment, Kitasato University Kitasato Institute Hospital, Tokyo/Japan
5IBD Center, Sapporo Kosei General Hospital, Sapporo/Japan

A524 United European Gastroenterology Journal 5(5S)
P1034 EFFECTIVENESS OF IMMUNOSUPPRESSORS IN CROHN’S DISEASE

L. Carradori1, N. Kaddache1, L. S. Salah1, A. Rebhi1, S. Khouitah1, K. Siallah1, H. Bellimi1, F. I. Haddad2, R. Benbaya1, K. Bouchaoui2, A. Tata2, B. Bahaz1, T. Boucekkine1, S. Berkane1

1Gastroentrology, CHU Mustapha, algiers/Algeria
2Department of Internal Medicine, Toho University Sakura Medical Center, Sakura/Japan

Contact E-mail Address: kei_00200@yahoo.fr

Introduction: The use of immunosuppressors, including Azathioprine (AZT) in inflammatory bowel disease (IBD) is considered reference treatment. They are indicated especially in the case of corticosteroid dependence, corticosteroid resistance and in postoperative recurrence. Their efficacy is primarily judged on clinical evaluation and relapses. Few data are available on long-term healing during Crohn’s disease (CD) treatment. The aim of this study is to evaluate the long-term clinical effectiveness of AZT in luminal CD’s disease and in prevention of postoperative recurrence.

Aims & Methods: In this retrospective study, 135 consecutive patients followed for more than 1 year with or without anoperineal involvement were included between 1/1/2016 and 31/03/2017. All patients with Rutgeerts score greater than or equal to 2 received AZT. All patients were under AZT for at least 12 months, maintaining remission for luminal involvement or preventing postoperative recurrence. All our patients have received clinical (HBI), biological (C-reactive protein – CRP), and endoscopic evaluation which were checked at different times (during the first 2 years = G1, between 2 and 5 years = G2 and beyond 5 years = G3). Endoscopic remission was defined by the absence of ulceration. Statistical analysis used the Student Fisher and U tests of Mann Whitney.

Results: AZT was prescribed in 46.6% (62/133) cases of luminal involvement and 53.4% of cases to prevent post-operative recurrence. In the luminal disease group, the sex ratio M/F was 1, the age at diagnosis was 27 years ± 9. A delay in diagnosis was estimated at 2.5 ± 13 years. Smoking was found in 26% of cases (16/61). It was ileocolonic or colonic in 16.4% and 49.2% of cases, phenotype B1 or B2 in 32.8% and 44.6% respectively. 47.5% had more than 2 corticosteroid treatments (CCT), the average time to start AZT was 4 ± 6 years. The mean duration of treatments was 3.5 ± 5.2 years. The persistence of endo-scopic lesions was observed in 46%, 20% and 25% of cases in G1, G2 and G3 respectively. Loss of response was observed in patient with more than 2 cures of CCT (48% versus 25%, p = 0.042), and the B2 phenotype of the disease (47.2% versus 26% (B1), p = 0.037). There was no correlation between HBI and endoscopic healing. For postoperative recurrence, sex ratio 2.3 F/1 M, age at diagnosis was 32 years ± 11 (17-70). The duration of the disease before surgery was 34 months ± 44 (0-156), the time between surgery and AZT was estimated at 3 years ± 6 (0-20). 26% of patients were smokers. 63/72 (87.5%) underwent surgery for stenosis and 5.5% after severe flare. 61% had intestinal resection and 20.8% a right hemicolectomy. 67/83 (83%) had more than 2 resections. 60/72 had a colonscopy before and after AZT. The persistence of i-24 lesions was observed in 44%, 21% and 19% in G1, G2 and G3 respectively.

Conclusion: In our work, the existence of endoscopic lesions and the absence of symptoms is not uncommon. The prediction after one year of clinical relapse in this population. The aim of this study, which is still ongoing, is to determine the rate and predictive factors of failure, as well as the modalities of endoscopic control especially concerning timing.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: According to infliximab (IFX) license in inflammatory bowel diseases (IBD), infusion doses are based on patient weight. In daily practice, treatment is prepared by pharmacist after clinical patient assessment, leading to an increased duration of hospital stay and consequently costs. A pharmacokinetic study (1) has shown that a weight-based dose (WBD) strategy does not reduce interindividual variability of IFX trough levels when compared to fixed doses. According to these findings, our hospital implemented dose banding (DB) of IFX infusions, defined by doses rounded up or down according to one of eight predetermined standard doses with a maximum theoretical deviation of +/-5%, that allowed to prepare infusions at the pharmacy before patient admission.

Aims & Methods: The aim of the study was to compare hospitalisation length of stay (LOS) and median time to clinical response (E) between a WBD and a DB strategy for IFX treatment in IBD. From February to March 2017, we conducted a prospective, case-control study in our unit, including all IBD patients admitted for an IFX infusion. Patients who should receive an IFX dose between 250 and 800 mg were included in the DB group (treatment prepared after clinical validation, sent to the hospital unit before patient admission and administered just after the clinical validation). Patients who should receive an IFX dose below 250 mg or above 800 mg were included in the WBD group (treatment prepared after clinical validation including weight, and then sent to the hospital unit). Patients were analysed only when the precise length of stay could be obtained and measured in minutes. Primary objective was to compare the length of stay at hospital in both groups. Secondary objective was to compare the proportion of IFX doses cancelled, reimbursed and wasted infusions and the saved or wasted price associated (reimbursement price of one 100 mg IFX vial: 382.28 €).

Results: Among the 373 IBD patients treated by IFX during the study period, 116 (31%) patients (51M/65F; median age: 41 years) were included in the study (75 in the DB group and 41 in the WBD group) corresponding to 128 infusions (84 in DB and 44 in WBD groups). Mean length of hospitalisation stay were 238 ± 21 min in the DB group and 308 ± 31 min in the DB group, respectively (p < 0.001). DB was associated with a mean reduction of length of stay of 23%, corresponding to 70 minutes per patient. DB reduced significantly the mean duration of stay by decreasing the waiting time between clinical assessment and start of the infusion: 16 min vs. 84 min with WBD (p < 0.001). During the study, none of the 44 (0%) infusion in the WBD group was cancelled while 3/84 (3.5%) were cancelled in the DB group (p = 0.55). Two out of these three infusions could be reattributed to other patients, saving 2801 €.

Conclusion: When used routinely in IBD, IFX DB is associated with a shortened LOS and E as compared to WBD, with a mean reduction of 70 minutes per patient. As IFX DB seems having similar efficacy to weight-based doses, it may improve functioning of daily hospitalisation units. Disclosures of Interest: All authors have declared no conflicts of interest.
P1038 HIGH-DOSE INTRAVENOUS IRON ISOMALTOSIDE IN PATIENTS WITH GASTROINTESTINAL DISEASES

R. Derman1, J.F. Dahlerup2, W. Reinisch3
1Thomas Jefferson University, Philadelphia/United States of America/PA
2Department Of Hepatology And Gastroenterology, Aarhus University Hospital, Aarhus/Denmark
3Department Of Internal Medicine III, Medical University of Vienna, Vienna/Austria

Contact E-mail Address: walter.reinisch@meduniwien.ac.at

Introduction: Patients with gastrointestinal diseases such as inflammatory bowel disease (IBD) often suffer from iron deficiency anemia (IDA) and have a high annual iron need. Intravenous administration of high-dose iron is the most efficient approach to replenish iron stores. The present analysis evaluates safety and efficacy of high doses of iron isomaltoside in patients with gastrointestinal diseases.

Aims & Methods: This is a pooled analysis of 3 trials of iron isomaltoside performed in patients with gastrointestinal diseases and IDA [1–3]. Outcome measures were adverse drug reactions (ADRs) and haemoglobin (Hb) measurements.

Results: 357 patients (108 men, 249 women) were included in the analysis of which 255 were diagnosed with IBD and 102 with other gastrointestinal diseases, incl. bariatric surgery, gastrointestinal bleeding etc. A cumulative dose of ≤1000 mg and >1000 mg iron isomaltoside was administered in 199 and 158 patients, respectively. ADRs were observed in 13.6% (36 events in 27 patients) and 12.0% (30 events in 19 patients) of the patients dosed with ≤1000 mg and >1000 mg iron isomaltoside, respectively (p = 0.8). Similar frequencies were observed in the IDB subgroup (14.3% versus 12.1%, p = 0.8). 0.5% of the patients experienced a serious ADR (2 events in 2 patients; grand mal convulsion and syncope). ADRs with a patient frequency >1% are shown in the table below:

<table>
<thead>
<tr>
<th>ADR</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flushing</td>
<td>1.0</td>
</tr>
<tr>
<td>Constipation</td>
<td>1.9</td>
</tr>
<tr>
<td>Increased hepatic enzyme</td>
<td>0.6</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>1.3</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>1.3</td>
</tr>
<tr>
<td>Headache</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypersensitivity</td>
<td>1.3</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>0.6</td>
</tr>
<tr>
<td>Hypertension</td>
<td>0.0</td>
</tr>
<tr>
<td>Hypotension</td>
<td>0.6</td>
</tr>
<tr>
<td>Nausea</td>
<td>1.0</td>
</tr>
<tr>
<td>Urticaria</td>
<td>0.6</td>
</tr>
</tbody>
</table>

No ADRs of hypophosphatemia were reported. In patients dosed with ≤1000 mg iron isomaltoside, Hb increased with a mean of 1.72 (95% confidence interval (CI): 0.12 g/dL from baseline to week 3, 2.00 (0.12) g/dL to week 4, and 2.51 (0.13) g/dL to week 8. Patients in doses with >1000 mg iron isomaltoside, Hb increased with a mean of 2.04 (0.10) g/dL from baseline to week 3, 2.51 (0.09) g/dL to week 4, and 3.01 (0.12) g/dL to week 8. The observed increase in Hb was statistically significantly higher in patients dosed with >1000 mg iron isomaltoside (p = 0.04). In the IBD subgroup, a similar dose-depended statistically increase in Hb was observed at week 3 and onwards (p < 0.02).

Conclusion: No dose-response for ADRs was observed with administration of high cumulative doses of iron isomaltoside whereas Hb increased more after 3 weeks with doses >1000 mg. Thus, high doses (>1000 mg) of iron isomaltoside can be administered without additional safety concerns including concerns of hypophosphatemia and with efficacious increases in Hb in patients with gastrointestinal diseases.

Disclosure of Interest: R. Derman: Richard Derman has been a consultant for Pharmacosmos A/S, and the investigator/institution received a fee per patient J.F. Dahlerup: The investigator/institution received a fee per patient W. Reinisch: The investigator/institution received a fee per patient.

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P1039 EFFICACY AND SAFETY OF GOLIMUMAB IN ULCERATIVE COLITIS: PRELIMINARY DATA FROM A MULTICENTER ITALIAN STUDY

1Division Of Gastroenterology, Casa Sollievo della Sofferenza Hospital, San Giovanni Rotondo/Italy
2Division Of Gastroenterology, Casa Sollievo della Sofferenza’ Hospital, IRCCS, San Giovanni Rotondo/Italy
3Department Of Clinical & E Sperimentale, IBD Unit, Messina/Italy
4Coc Di Gastroenterologia, Ospedale Bianchi Melacrinio Borrelli, Reggio Calabria/Italy
5IBD Unito University Di Medicina Generale, Ospedale Madonna delle Grazie, Matera/Italy
6IBD Unit, Azienda Ospedaliera per l’Emergenza Cannizzaro, Catania/Italy
7Emergency And Organ Transplantation, Section Of Gastroenterology, AOU Policlinico, Bari/Italy
8Gastroenterology And Hepatology Section, University of Palermo School of Medicine, Palermo/Italy
9G d’Annunzio University of Chieti-Pescara, School of Gastroenterology and Digestive Physiopathology, Pescara/Italy
10Gastroenterology & Artificial Nutrition, San Nicola Pellegrino Hospital, Trani/Italy
11Dept. Clinical Medicine And Surgery, University Federico II of Naples, Naples/Italy
12Presidio valle d’Itria, Martina Franca/Italy
13Ciacco, Ospedale Pagliese, Catanaro/Italy
14Gastroenterology Service, ASL BAT, Andria (BT), Andria/Italy
15Internistic Medical Department *magrassi-lanzarè*, University of Campania “F.L.Vianelli”, Naples/Italy
16Gastroenterology And Endoscopy Unit, University of Campania “F.L.Vianelli”, Napoli/Italy
17University, Catanzaro/Italy
18Gastroenterology Unit, Poggiardo Hospital, Poggiardo/Italy
19Gastroenterology And Digestive Endoscopy, OORR Foggia, Foggia/Italy
20Azienda Ospedaliera di Coesenza U.O. Gastroenterologia, Coesenza/Italy
21Policlinico, Catania, Catania/Italy
22Gastroenterologia, Ospedale San Paolo di Bari, Bari/Italy
23GI Unit, Università di Messina, Messina, Messina/Italy
24Sofar ospedale Cannizzaro di C1, Catania/Catania/Italy
25Emergency And Organ Transplantation, University of Palermo/Italy
26Di.bim.is., Gastroenterology and Hepatology Unit, Palermo/Italy

Contact E-mail Address: f.bossa@operaрапрепio.it

Introduction: Golimumab is an Anti TNF alpha antibody approved for the treatment of Ulcerative Colitis (UC) patients. Its efficacy and safety were studied in randomized, double blind trials1, 2, but its effectiveness and safety in daily clinical practice are still little known.

Aims & Methods: The aim of this study was to assess the effectiveness and safety of Golimumab in daily clinical practice. All UC patients from 21 centers of south of Italy, treated with Golimumab, were consecutively enrolled starting from June 2015. Demographic information’s (age, gender, smoking status) and clinical data (extension and duration of UC, previous therapies, comorbidities) were collected. Clinical, laboratory and endoscopic data during the treatment with Golimumab were collected every three months.

Results: A total of 190 patients (120 males) were enrolled. The mean age at diagnosis and mean duration of disease were respectively 38.8 ± 14.6 years, and 9.1 ± 7.0 years. Only 21 patients were active smokers (11%). About the extension, 11 were pancolitis (58%), 12 had a distal colitis (38%), and 7 a proctitis (4%). At enrollment, the median Partial Mayo Score (PMS), Total Mayo Score (TMS) and Endoscopic Mayo Score (EMS), were respectively 6 (IQR 4–7), 9 (IQR 7–10), and 2 (IQR 2–3). The median values of ESR, C Reactive Protein and faecal calprotectin were respectively 25 mm/hour (IQR 15–38), 3 mg/dL (IQR 1–9), and 250 mg/kg (IQR 174–500). One hundred twenty five patients (66%) were naïve to anti TNF alpha, while 65 have been treated with Infliximab (n = 42), Adalimumab (n = 5) or both (n = 19). The indications for Golimumab were: steroid-resistance in 37 patients (20%), steroid-dependence in 130 (68%), extra-intestinal manifestations in 6 (3%), and Anti TNF alpha failure in 17 (9%). Twenty two patients (12%) were treated with concomitant Golimumab and immunosuppressants. A total of 142 patients have been completed at least 12 months of therapy. Of these patients, a significant reduction of mean PMS (n = 142; p < 0.001), TMS (n = 45; p < 0.001), EMS (n = 45; p < 0.001), ESR (n = 125; p < 0.001), and CRP (n = 134; p < 0.001) were observed after 3 months. The rate of responders (reduction of ≥2 points of PMS) was 60%, while the rate of clinical remission (PMS ≤ 2) was 39%, and the rate of mucosal healing (EMS ≤ 1) was 53%. Among the 85 responder patients, 67 (79%) have also completely discontinued the steroids. At univariate analysis for predictive factors of response (gender, duration of disease, smoking status, previous Anti
TNF, combo therapy, PMS, EMS, TMS, ESIR, CRP, calprotectin, and indication to the prospective cohort (n = 223). Patients treated with anti-TNF (n = 0.001), TMS (n = 0.0001), PMS (p = 0.0001), and EMS (p = 0.006) were associated with better response. About the indication, steroid-resistance was associated to the best response (p = 0.002), while Anti TNF resistance with steroid-resistance (p = 0.002). All multivariable analysis only TMS (OR 1.5 - CI 95% 1.2-1.8) and Naive to Anti TNF alpha (p = 0.015, OR 3.0 - CI 1.2-7.5) were confirmed associated to better response. To date, only 33 patients have discontinued Golimumab (17%). A total of 15 adverse events (3 serious) were reported. Ten non-responders patients underwent to colectomy (7 of them were refractory to other anti-TNF alpha).

Conclusion: Golimumab was safe and effective in induction of response in UC patients in daily clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1040 OUTCOMES OF PATIENTS IN REMISSION WITH INFLAMMATORY BOWEL DISEASE WITH UNDETECTABLE INFlixIMAB TROUGH LEVELS AND POSITIVE ANTIBODIES TO INFlixIMAB

G. S. Z. Tuni, R. W. Downey1, K. Robinson1, A. Wright1, L. Marshall1, M. F. Hale1, A. J. Lobo1, 1Gastroenterology, Sheffield Teaching Hospitals NHS Foundation Trust, jf/United Kingdom

Contact E-mail Address: gloria.tuni@sth.nhs.uk

Introduction: The formation of antibodies to infliximab (ATI) is associated with increased drug clearance. Patients with undetectable infliximab (IFX) levels and positive ATI may indicate a group who may no longer be benefitting from the drug. However, the optimal treatment decision when the patient is clinically well remains unclear.

Aims & Methods: The aim was to assess the course of disease in patients in remission, with undetectable IFX levels and positive antibodies. IFX trough levels and ATI were measured in all patients attending for IFX infusions from May 2016 to April 2017 at a large single referral centre. Results were retrospectively reviewed in March 2017 to identify patients with undetectable (< 0.8 mg/L) IFX trough levels and positive ATI (> 10 mg/L). A local guideline suggested that in well patients in this cohort, patients should be switched to an alternative biologic if duration of IFX treatment was < 12 months, or if the duration of therapy was ≥12 months to consider withdrawal of IFX or to assess disease activity - with withdrawal of IFX in inactive disease or a switch to an alternative biologic for active disease. Trough levels for IFX and ATI were measured using direct solid phase immunoassortment assays (Biohit, UK). Relapse was defined as worsening of symptoms attributable to the inflammatory bowel disease activity - with withdrawal of IFX in inactive disease or a switch to an alternative biologic if duration of IFX treatment was 12 months to consider withdrawal of IFX or to assess disease activity.

Results: A total of 148 subjects received study treatment (ABP 710: n = 49; infliximab EU: n = 49; infliximab US: n = 50). After a single dose, the adjusted least square (LS) GM of AU(0-24h) and Cmax were as follows: ABP 710, 33559 µg/mL and 123 µg/mL; infliximab EU, 37068 µg/mL and 121 µg/mL; infliximab US, 77522 µg/mL and 127 µg/mL. Ratios of adjusted LS GM (90% CI) for AU(0-24h) and Cmax, between ABP 710 and infliximab EU were 0.996 (0.9042, 1.0963) and 0.894 (0.8021, 0.9887) and that between ABP 710 and infliximab US were 0.996 (0.9042, 1.0963) and 0.894 (0.8021, 0.9887) and that between ABP 710 and infliximab US were 0.996 (0.9042, 1.0963) and 0.894 (0.8021, 0.9887). There were no deaths, serious adverse events, or treatment-emergent adverse events (TEAEs) leading to discontinuation from the study; 1 subject in the infliximab EU group developed polymyalgia that resolved with treatment and the subject completed the study. The incidence of TEAEs was similar in the 3 groups (ABP 710: 83.7%; infliximab EU: 83.5%; infliximab US: 84.0%). The majority was mild or moderate. The most frequently reported TEAEs were somnolence, headache, nasopharyngitis, upper respiratory tract infection, nausea, and lethargy. All subjects tested negative for antidrug antibodies (ADAs) prior to dosing. At the end of the study period (Day 57), 54% of subjects were still on ABP 710, 27% on infliximab EU, and 32% on infliximab US were positive for binding ADAs; 13% on ABP 710, 19% on infliximab EU and 10% on infliximab US were positive for neutralising ADAs.

Conclusion: Results of this study demonstrate PK similarity between ABP 710 and infliximab US, as well as between infliximab EU and infliximab US. There were no deaths, serious adverse events, or TEAEs leading to discontinuation from the study; 1 subject in the infliximab EU group developed polymyalgia that resolved with treatment and the subject completed the study. The incidence of TEAEs was similar in the 3 groups (ABP 710: 83.7%; infliximab EU: 83.5%; infliximab US: 84.0%).

Disclosure of Interest: V. Chow: I am a full time employee and stockholder of Amgen Inc

Disclosure of Interest: N. Zhang: I am a full time employee and stockholder of Amgen Inc

Disclosure of Interest: A. Kaliyaperumal: I am a full time employee and stockholder of Amgen Inc

Disclosure of Interest: E. Krishnan: I am a full time employee and stockholder of Amgen Inc

P1042 EPIDEMIOLOGY AND BURDEN OF COMPLEX PERIANAL FISTULAS IN PATIENTS WITH CROHN DISEASE– A SYSTEMATIC LITERATURE REVIEW

1Dept. of Gastroenterology, Hospital Clinic Barcelona Dept. of Gastroenterology, Hospital Clinic Bar. Barcelona/Spain
2Takeda Development Centre Europe Ltd, London/United Kingdom
3RTI Health Solutions, Manchester/United Kingdom
4RTI Health Solutions, RTP/United States of America
5Europe And Canada Medical Affairs, Takeda Pharmaceuticals International, Zurich/Switzerland
6Medical University of Vienna, Vienna/Austria

Contact E-mail Address: hari.patel@takeda.com

Introduction: Complex perianal fistulas (CPF) are common among Crohn’s disease (CD) patients and are associated with substantial morbidity. The burden and management of CPF are poorly studied.

Aims & Methods: To systematically review the literature on epidemiology, global disease burden, and treatment outcomes for CPF in CD patients. PubMed, Embase, and Cochrane were searched for relevant articles published from 2000
Results: 353 records were reviewed by 2 independent researchers, and 63 relevant articles and abstracts were selected for inclusion (including 3 epidemiology and 3 burden; the rest were treatment guidelines/patterns or treatment outcome studies). The estimated cumulative incidence of CPF in CD, based mostly on studies conducted in referral centres, ranges from 12% to 14% (2 studies). CPF can result in significant morbidity and greatly diminished quality of life; up to 59% of patients (1 study) are at risk of fecal incontinence. Treatment options include a combination of medical and surgical interventions. However, across all options identified, a high proportion of patients experience treatment failure (lack of or inadequate response) and relapse (Table). Only 4 identified studies were conducted specifically in patients refractory to anti-tumor necrosis factor (TNF) -α agents— a population with high unmet needs (one study of perifusilin injections of infliximab, and three studies of surgical interventions). Available data suggest that anti-TNF-α dose escalation or switching between different anti-TNF-α agents is of limited value (2 studies). Table — Rates of treatment failure and relapse or reoccurrence among patients with complex perianal fistulain Crohn’s Disease.

Conclusion: CPFs in CD pose substantial clinical burden. There is a high unmet need for effective treatment options for CPF in CD patients, especially those refractory to anti-TNF-α agents, as evidenced by high treatment failure and relapse rates.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1043 VITAMIN D IS RELATED TO THE EFFECTS OF ANTI-TNF TREATMENT IN CROHN’S DISEASE PATIENTS

M. Bafuto1, M. B. Goga1, K. T. P. E Silva1, J. P. V. Costa1, C. C. S. D. Reviglio1, E. C. Oliveira1, J. R. Filho1

1Gastroenterology, Federal University of Goiás, Goiânia/Brazil
2Surgery, Organization Panamericana de Gastroenterología (OPGE), Goiânia/Brazil

Contact E-mail Address: maurobafuto@yahoo.com.br

Introduction: Vitamin D deficiency is common in patients with Crohn’s disease (CD). It is believed that this deficiency is related to the CD activity. Vitamin D supplementation has many effects, including immunomodulation. However, the role of Vitamin D (VD) in severe CD patients using Anti-TNF is still unclear.

Aims & Methods: To evaluate the results of the VD replacement at different doses; check possible immunomodulatory action of vitamin D in CD patients with Anti-TNF. We conducted a double-blind, randomized, prospective study. 42 patients were selected with history of moderate to severe CD in use of anti-TNF, of both sexes, between 18 to 60 years, with dosage of 25-hydroxyvitamin D < 75 nmol/L (30 ng/ml) who signed the informed consent. Were excluded patients with less than 18 or over 70 years, pregnant women, chronic kidney or liver disease, sarcoidosis, tuberculosis, hyper- or hypoparathyroidism, neoplasias, use of anticonvulsants; and patients who received calcium supplements or VD supplementation have many effects, including immunomodulation. However, the role of Vitamin D (VD) in severe CD patients using Anti-TNF is still unclear.

Means & Methods: Treatment: P1042

Abstract: P1042

Treatment Relapse/recurrence

Rates, % Number of studies Number of patients per study (range) Rates, % Number of studies Number of patients per study (range)

Anti-TNF-α agents (agent unspecified) 46-60 3 39-66 27 1 66

Infliximab 12-58 4 6-52 41 1 52

Adalimumab 22-73 4 9-38 0 1 9

Surgical interventions 69-100 10 5-40 13-20 3 5-10

Combined medical and surgical management 0-80 15 9-212 0-41 7 9-71

Standard of care 30-68 4 15-250 23-66 3 79-250

a4 studies reported treatment outcomes for CPF in CD patients. Most studies identified were small and/or non-comparative, and study methodologies, populations, endpoint definitions, and duration of follow-up varied. For studies with mixed populations, only results for patients with CD and CPF were considered.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1045 CLINICAL EFFECTIVENESS OF GOLIMUMAB IN CROHN’S DISEASE – AN OBSERVATIONAL STUDY BASED ON THE SWEDISH NATIONAL QUALITY REGISTRY FOR INFLAMMATORY BOWEL DISEASE

S. Rundquist1, C. Eriksson1, L. Nilsson2, L. Angelisson1, S. Jähnert1, J. Björk3, M. Gripp1, H. Hjortsson1, H. Strid1, P. N. S. Montinou3, J. Haldorsen1

1Dept. Of Gastroenterology, Faculty Of Medicine And Health, Örebro University, Örebro/Sweden
2Dept. Of Internal Medicine, Danieleryd Hospital, Stockholm/Sweden
3Dept. Of Internal Medicine, Helsingborg Hospital, Helsingborg/Sweden
4Stockholm Gastro Care, Karolinska Institutet Danieleryd Hospital, Stockholm, Sweden
5Dept. Of Medicine, Center For Digestive Diseases, Karolinska University Hospital, Stockholm/Sweden
6Dept. Of Gastroenterology, Skåne University Hospital Malmö, Malmö/Sweden
7Dept. Of Gastroenterology, Linköping University, Linköping/Sweden
8Dept. Of Internal Medicine, Södra Älvsborgs Sjukhus, Borås/Sweden
9Clinical Epidemiology And Biostatistics, School Of Medical Sciences, Örebro University, Örebro/Sweden

Contact E-mail Address: sara.rundquist@regionorebro.lan

Introduction: Golimumab is approved for the treatment of moderate to severe ulcerative colitis, but not Crohn’s disease (CD). Therefore, its potential efficacy in CD remains largely unknown. Off-label use of drugs is not prohibited in Sweden, and golimumab may have been used for CD treatment.

Results: The study cohort consisted of 95 patients with a median age of 37 (IQR 27-48) years, of whom 40% were men. The majority of the patients (90.5%) had previously experienced treatment failure for at least one anti-TNF agent. At the start of golimumab, 41% were on a concomitant immunomodulator and 16% on corticosteroids. After a median follow-up time of 21 (IQR 10-36) months, 60 (63%) patients had stopped treatment with golimumab. Reasons for discontinuation were inadequate response; n = 45 (75%), intolerance; n = 11 (18%) and other reasons; n = 4 (7%). Estimated drug continuation rates were 73% at 12 weeks and 42% at 52 weeks. Concomitant treatment with corticosteroids at baseline seemed to be associated with a higher risk of discontinuation of golimumab (unadjusted HR: 1.97; 95% CI: 1.04–3.73; p = 0.04), although the association did not remain significant after adjusting for potential confounding factors (adjusted HR: 1.76; 95% CI: 0.84–3.67; p = 0.13).

Aims & Methods: We aimed to describe the CD population that is treated with golimumab in Sweden and to assess the long-term effectiveness, defined as drug continuation rate, as well as identify predictors of drug discontinuation. Patients with CD who received at least one injection of golimumab were identified through the Swedish national quality registry for inflammatory bowel disease (SWIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. Univariante and multivariate Cox proportional hazard regression models were used to identify predictors of golimumab discontinuation. The variables sex, age, duration of disease, location, perianal disease, smoking status, previous surgery, concomitant treatment with corticosteroids or immunomodulators at baseline, prior anti-TNF therapy and CRP at baseline were included in the models.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract: P1045

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Conclusion: Golimumab-treated patients with CD are a treatment-refractory group, with more than 40% of them showing no or small benefit after one year, since they were receiving continued golimumab treatment. Co-concomitant corticosteroid treatment at start of golimumab appears to be associated with worse outcome.

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Disclosure of Interest: M. Barreiro-de Acosta: Speaker, consultant and advisory board for AbbVie, MSD, Abbbvie SLU, Madrid/Spain. M. Esteve: Consultant/advisory board for AbbVie, Takeda, Pfizer, Ferring, FaesFarma, Shire Pharmaceuticals, Dr. Falk Pharma, Chiesi, GebroPharma, Otsuka Pharmaceutical, and ViforPharma. M. Esteve: Dr Esteve has served as a consultant for AbbVie, MSD, Takeda and Tillotts Pharma and has received speaker fees from MSD and AbbVie. R. Vicente: Dr Raquel Vicente has received medical education funding and speaker fees from Abbvie, MSD, Shire y Ferring. A. Echarri: Dr Ana Echarri has received research funding from Abbvie, Shire and speaker fees from Abbvie, Takeda, MSD, Shire, Pfizer M. Martin-Arranz: Dra. Martín Arranz has served as consultant for Abbvie, MSD, Ferring and speaker fees for Abbvie, MSD, Ferring, Chiesi, Tillotts. M. Navarro-Llavat: Dr. Mercè Navarro-Llavat has received research funding from AbbVie and speaker fees from AbbVie, MSD, Takeda, Ferring, Shire Pharmaceuticals, Zambon and Allergan. J. Huguet: Dr. Jose Maria Huguet Malaves has received research funding from AbbVie and MSD and speaker fees from AbbVie, MSD, Ferring and Takeda. M. Barreiro-de Acosta: Consultant for AbbVie for each patient. M. Martín-Arranz: Dra. Martín Arranz has served as consultant for Abbvie, MSD, Ferring and speaker fees for Abbvie, MSD, Shire, Pfizer, MSD, Chiesi, GebroPharma, Otsuka Pharmaceuticals, Astarea and Tillotts Pharma. All other authors have declared no conflicts of interest.

PI0146 EVAPORATION IN QUALITY OF LIFE IN PATIENTS WITH LUMINAL CROHN’S DISEASE TREATED WITH ADALIMUMAB. DATA FROM RAPIDA TRIAL

F. Casellas1, M. Barreiro-De Acosta2, M. Esteve3, L. Castro-Laria4, M. Navarro-Llavat5, F. Argullés-Arias4, J. Boudet6,1, J. Llor5,1, M. Navarro-Llavat1, F. Argullés-Arias4, J. Boudet6,1, J. Rodrigo-San Pedro1, G. Diaz7,1, R. Casado1,1, I. Marín-Jiménez1,1,1

Aims & Methods: To prospectively evaluate disease activity and QoL in a single-centre cohort of CD and UC patients, after introduction of anti-TNF agents (infliximab or adalimumab). All consecutive adult CD and UC patients who started infliximab (IFX) or Adalimumab (ADA) from 2010 to 2015 at Paediatric University Hospital were enrolled. Disease severity was evaluated through laboratory tests (Haemoglobin, C-reactive protein (CRP) and Fecal calprotectin) and commonly used scores (Harvey Bradshaw Index (HBI) for CD and Modified Truelove and Witts Severity Index (MTWSI) for UC) for each patient, at anti-TNF introduction and 12 months thereafter; QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IDBQ).

Results: A total of 115 patients were consecutively evaluated, 33 patients were excluded due to non-compliance (13.7%) or drop-out for adverse events or primary non response (17.3%) within 12 months. Eighty-two (71.5%) were included in the statistical analysis (M/F 53/29, median age 43 years, CD/UC 42/40). Forty, 24 patients started IFX and ADA, respectively. QoL was significantly higher in CD than UC at baseline (median S-IDBQ 49 vs 32, p = 0.004). In CD patients, anti-TNFFα determined significant reduction of HBI (median 3 vs 1; p < 0.01), CRP (median 5 vs 2.9 mg/L; p = 0.004), fecal calprotectin (median 429 vs 119 μg/g; p = 0.001) but not haemoglobin (median 13.6 vs 13.2 g/dL; p = 0.25). QoL significantly improved (median S-IDBQ 49 vs 59; p < 0.001), both in IFX and ADA groups (IFX: p = 0.001; ADA: p = 0.02). In UC patients, anti-TNFα therapy improved disease activity (median MTWSI 7 vs 4, p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL; p = 0.006), fecal calprotectin (median 1600 vs 108 μg/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L; p = 0.08). QoL improved at 12 months (median S-IDBQ 32 vs 56, p = 0.001) both in patients treated with IFX (p = 0.003) and ADA (p = 0.005). No adverse events were reported during the study period.

Conclusion: Anti-TNFα therapy is safe and improves disease activity and quality of life of UC and CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI0147 EVALUATION OF QUALITY OF LIFE IN IBD PATIENTS TREATED WITH ANTI-TNFα THERAPY

G. Creton, R. Cacquer, G. Girardin, B. Barbario, R. Aigo, E. Savarino, A. Tard, M. C. Girona-Haggaiby, R. D'Inca

Introduction: anti-Tumor necrosis factor-α (anti-TNFα) agents are commonly used treatment options for moderate to severe Crohn’s Disease (CD) and Ulcerative Colitis (UC). However, despite their clinical effectiveness, few data regarding the role on quality of life (QoL) are available.

Aims & Methods: To prospectively evaluate disease activity and QoL in a single-centre cohort of CD and UC patients, after introduction of anti-TNFα agents (infliximab or adalimumab). All consecutive adult CD and UC patients who started infliximab (IFX) or Adalimumab (ADA) from 2010 to 2015 at Paediatric University Hospital were enrolled. Disease severity was evaluated through laboratory tests (Haemoglobin, C-reactive protein (CRP) and Fecal calprotectin) and commonly used scores (Harvey Bradshaw Index (HBI) for CD and Modified Truelove and Witts Severity Index (MTWSI) for UC) for each patient, at anti-TNF introduction and 12 months thereafter; QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IDBQ).

Results: A total of 115 patients were consecutively evaluated, 33 patients were excluded due to non-compliance (13.7%) or drop-out for adverse events or primary non response (17.3%) within 12 months. Eighty-two (71.5%) were included in the statistical analysis (M/F 53/29, median age 43 years, CD/UC 42/40). Forty, 24 patients started IFX and ADA, respectively. QoL was significantly higher in CD than UC at baseline (median S-IDBQ 49 vs 32, p = 0.004). In CD patients, anti-TNFFα determined significant reduction of HBI (median 3 vs 1; p < 0.01), CRP (median 5 vs 2.9 mg/L; p = 0.004), fecal calprotectin (median 429 vs 119 μg/g; p = 0.001) but not haemoglobin (median 13.6 vs 13.2 g/dL; p = 0.25). QoL significantly improved (median S-IDBQ 49 vs 59; p < 0.001), both in IFX and ADA groups (IFX: p = 0.001; ADA: p = 0.02). In UC patients, anti-TNFα therapy improved disease activity (median MTWSI 7 vs 4, p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL; p = 0.006), fecal calprotectin (median 1600 vs 108 μg/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L; p = 0.08). QoL improved at 12 months (median S-IDBQ 32 vs 56, p = 0.001) both in patients treated with IFX (p = 0.003) and ADA (p = 0.005). No adverse events were reported during the study period.

Conclusion: Anti-TNFα therapy is safe and improves disease activity and quality of life of UC and CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI0148 ENDOSCOPIC AND HISTOLOGIC FINDINGS CORRELATE WITH FREE INFILXIMAB FOUND IN UNINFLAMED TISSUE IN IBD PATIENTS

H. Bar-Yoseph1, A. Blatt1, S. Pressman1, S. Gerassy1, B. Ungar2, S. Ben-Horin3, Y. Chow1

1Gastroenterology, Rambam Health Care Campus, Haifa/Israel
2Gastroenterology, Chaim Sheba Medical Center Ramat Gan Israel, Ramat Gan/Israel

Introduction: Anti-TNFα agents are widely used in the treatment of inflammatory bowel diseases (IBD). Despite the fact that the intestine is the main therapeutic
target, little or no information is available regarding the ratios of free and TNF-binding anti-idiotype antibodies in intestinal tissue.

**Aims & Methods:** We aimed to assess the presence of free versus TNF-bound infliximab in the intestinal tissue of IBD patients and its possible association with clinical outcomes. Protein was extracted from frozen intestinal tissues of infliximab and TNF-treated IBD patients using ELISA and normalized to tissue protein concentration. Concurrent serum drug levels (SDL), anti-drug antibodies (ADA), serum TNF-bound infliximab levels, patient's pharmacotherapy, clinical response based on physician global assessment of disease activity (PGA), and endoscopic appearance (severity determined according to mayo scor- ing in ulcerative colitis and endoscopist’s assessment of ulceration severity, extent of disease and affected area in Crohn’s disease) and pathological results (severely determined by observing pathologist graded as normal, mild, moderate and severe disease) at the time of colonoscopy were determined. Correlation were performed using Spearman’s rank correlation test.

**Results:** Twenty-four biopsies from 13 patients (11 Crohn’s disease and 2 ulcerative colitis patients) were tested. Non-inflamed tissue infliximab levels, but not inflamed tissue levels, were correlated with SDL (R = 0.8499, p < 0.0037, FDR = 0.0185) and were negatively correlated with the endoscopic appearance (R = -0.7214, p = 0.0185) and pathological severity (R = -0.7959, p = 0.0059). TNF-bound infliximab was measured in both inflamed and non-inflamed speci mens and did not correlate with drug levels in the serum or tissue. ADA was only detected in a single patient, precluding statistical analysis. Notably, no TNF-bound infliximab was measured in the serum.

**Conclusion:** These findings show that pharmacokinetic-pharmacodynamics interaction, as measured by SDL, better reflects drug levels in healthy mucosa rather than the inflamed one, and suggest a more complex drug/target interaction in inflamed tissue, which cannot be explained by target binding only. Future studies assessing changes during the process of mucosal healing may allow their use as surrogate markers for this purpose.

**Disclosure of Interest:** B. Ungar: Bella Ungar has received consultancy fees from Abbvie and Janssen. S. Vermeire: S. Vermeire has received consultancy and/or advisory board fees from Schering-Plough, AbbVie, Celltrion, Pfizer, Ferring, Janssen and Takeda; and has received research support from Celltrion, AbbVie & Takeda Y. Chowers: YC declare Abbvie grant support, lecture and advisory fees; Janssen lecturers and advisory fees; Takeda grant support lecture and advisory fees, Medtronic advisory fees

All other authors have declared no conflicts of interest.
in just one of these 14 patients (1.4%) (p < 0.001). Median (IQR) TL were significantly higher in the ADA negative group compared to the ADA positive group [9.21 (7.00–12.99) vs. 3.45 (1.72–5.44) μg/mL, p < 0.001]. A significant correlation between TL and ADA levels could be found (Spearman ρ = 0.562, p < 0.001). Although the presence of these ADA was not significantly associated with clinical remission at week 12, a clear tendency was observed (p = 0.136). During median (IQR) follow-up of 1.46 (0.32–3.48) years, 43 out of 116 patients (37.1%) needed ADM dose-escalation. Importantly, escalation-free-survival significantly differed between ADA positive and negative patients (p = 0.001). Univariate analysis could not identify any more factors (weight, BMI, gender, disease behaviour, disease location, CRP, serum albumin, PRO2, concomitant therapy, smoking) associated with ADA presence at week 12. Interestingly, 50% of the ADA positive patients had TL above 4 μg/mL but would not have been dose optimized proactively according to current practice. Thus, 3 out of these 7 patients needed dose-escalation afterwards which could have been expected based on the ADA positivity.

Conclusion: A drug-resistant assay can identify ADA to ADM before all drug has been neutralised and TL become undetectable. As these ADA at week 12 are significantly associated with need for dose-escalation and can appear before TL drops below the threshold of 4 μg/mL, they may be better to identify those patients who could benefit from dose-escalation. Moreover, the differences in TL between patients at week 12 can finally be explained by the presence of ADA measured with a drug-resistant assay.

Disclosure of Interest: B. Verstockt: Bram Verstockt received lecture fee from Ferring Pharmaceuticals.

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A. Gils: Speaker for MSD, Jansen Biologics, Abbvie, Pfizer, and Takeda. Consultant for UCB and Takeda. License of (anti-)infliximab, (anti-jadilali-mumab, and vedolizumab ELISA to apDha and infliximab, adalimumab lateral flow to Biopharma AG.

M. Ferrante: Financial support from Takeda; lecture fees from Ferring, Boehringer-Ingelheim, Chiesi, MSD, Tillotts, Jansen Biologics, AbbvieTakeda, Mitsubishi Tanabe, Zeria; consultancy fees from Abbvie, BoehringerIngelheim, Ferring, MSD, and Jansen Biologics.

All other authors have declared no conflicts of interest.

Reference
Surgery required after treatment (n, %) 13 (22) 3 (11) 10 (31) 0.2
Adverse events (n, %) 10 (17) 4 (15) 6 (19) 0.8
Discontinuation due to adverse events (n, %) 5 (30) 3 (15) 2 (33) 0.8
Time to discontinuation to adverse events (months) median, IQR 4 (1–4) 2 (1–4) 2 (1–4) 0.8
Patients eligible for analysis (n, %) 54 (92) 28 (54) 26 (89) 0.8
Duration of therapy (months) median, IQR 7 (4–14) 7 (4–13) 7 (4–14) 0.8
Follow-up data at 3 months (n, %) Clinical response 26 (48) 14 (26) 12 (48) 0.8
Treatment failure 28 (52) 10 (18) 18 (60) 0.8
Follow-up at March 2007 (n, %) Clinical response 17 (31) 8 (15) 9 (30) 0.5
Treatment failure 27 (49) 16 (30) 11 (37) 0.5

Results: Overall, data from 59 patients were analyzed. Of these, 27 (46%) were BN and 32 (54%) BE. Baseline patient’s characteristics and main study results are shown in Table 1. BN and BE patients were comparable in terms of comorbid- bity profile, age at diagnosis, disease duration, pattern of previous and con- comitant conventional therapies, as well as of disease extension and severity. Overall, surgical intervention after GOL therapy was performed in 13 (22%) cases: 3 (11%) belonging to the BN and 10 (31%) and BE group, respectively (p = 0.2). In 10 (17%) patients AE were recorded, most of which were genitouri- nary or herpes simplex infections. Of note, two cases of basal cell carcinoma were registered. The rate of AEs did not significantly differ among the BN and BE groups (p = 0.5). In 5 (9%) patients AE were responsible for therapeutic discontinuation after a median (IQR) period of 4 (1–4) months. Of the 54 (92%) patients who continued therapy, median (IQR) duration of GOL therapy was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed clinical response to GOL therapy. Clinical response was similar in both the BN and BE cohorts (p = 0.8). 28 (52%) patients were non-responders, without a statistically signifi- cant difference between the two groups (p = 0.8). At March 2007, 17 (31%) patients maintained clinical response, whereas 37 (69%) failed the treatment. No statistically significant differences were noticed between the BN and BE cohorts concerning the clinical response or the treatment failure (p = 0.5).

Conclusion: In our cohort, clinical response at 3 months follow-up was obtained in almost half of patients while at the last follow-up in one third. BN and BE patients had similar results in terms of clinical response, even though there were no differences between the BN and BE cohorts concerning the clinical response or the treatment failure (p = 0.5).

Disclosure of Interest: All authors have declared no conflicts of interest.
correlation coefficients between RHI and NHI were 0.82 at BL and 0.91 at wk 10, while both histologic scores were similarly correlated with ES (0.25–0.28 at BL and 0.38–0.40 at wk 10).

### Table 1: Percentage of Patients Achieving Histologic Response and Remission at Week 10

<table>
<thead>
<tr>
<th></th>
<th>aTNF-naive (n = 16)</th>
<th>aTNF-experienced (n = 34)</th>
<th>All comers (n = 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESPONSE (decrease from baseline)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHI ≥3</td>
<td>55%</td>
<td>46%</td>
<td>46%</td>
</tr>
<tr>
<td>≥20</td>
<td>30%</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>≥3</td>
<td>14%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>≥5</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>REMISSION (absolute score)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHI ≤</td>
<td>36%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>≤10</td>
<td>4%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>≤30</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Must have achieved ≥1 point improvement

NHI 0 = no histologically significant disease

NHI 1 = chronic inflammatory infiltrate with no acute inflammatory infiltrate

NHI 2 = mildly active disease

### Conclusion: Histologic activity assessment using RHI or NHI demonstrates improvement after 10 with etrolizumab treatment and was greater in aTNF-naive patients. Importantly, RHI or NHI reductions were associated with improved ES at wk 10.

### Disclosure of Interest:
- Peter Irving: research funding from and is a speaker or advisory board member for AbbVie, Dr Falk Pharma, Ferring, Genentech, Hospira, Johnson, Johnson and Johnson, MSD, Pharmacosmos, Shire, Takeda, Tollits, Topvert, Warner Chilcott and Vifor Pharma.
- S. Sebastian: Shaji Sebastian: speaker and a consultant for AbbVie, Gilead Sciences Inc.
- A. Rose: Anita Rose: employee of MSD UK and owns stocks and shares in Merck & Co., Inc., Kenilworth, NJ USA.

### Aims & Methods:
- Using pts taking only aminosalicylates (ASA) as a reference, we compared AE incidence, MRU and medical costs in pts with ulcerative colitis (UC) resistant to conventional treatment. Results of the maintenance phase are presented here.

### Aims & Methods: Anti-TNF naive adults with UC ≥3 months who responded to induction therapy with subcutaneous GLM at wk 6, according to partial Mayo score (PMS), continued to receive a maintenance dose of 50 mg or 100 mg GLM (dependent on the patient’s weight) every 4 weeks as per the Summary of Product Characteristics for a total of 54 weeks. Measurements were taken at wk 6, week 30 and then wk 54. The primary endpoint was the proportion of patients meeting PMS response criteria at wk 54 (defined as decrease in PMS of ≥2 points and ≥30% from baseline, plus a decrease in rectal bleeding subscore of ≥1 point or absolute rectal bleeding score ≥1). Secondary endpoints included proportion of patients meeting PMS remission criteria at wk 54 (defined as PMS ≤2 and no individual Mayo subscore >1), change from baseline in IBDO and EQ-SD at each visit and normalization of CRP.

### Results:
- Overall, 205 patients enrolled in GO-COLITIS and received at least one dose of GLM. Of these, 180 patients responded in the induction phase and received GLM in the maintenance phase. Clinical response was maintained through wk 54 in 52/140 patients (37.1%; 95% CI, 29.1% to 45.7%) and 42/140 patients were in remission at wk 54 (30.0%; 95% CI, 22.6% to 38.3%). Improvements in PMS subscores from baseline to wk 54 were noted in stooled frequency (mean change, −1.9; SD, 1.1 [n = 59]), rectal bleeding (mean change, −1.5; SD, 0.8 [n = 59]), and physician’s global assessment (mean change, −1.8; SD, 0.8 [n = 57]). Normal CRP levels at wk 54 were seen in 50/59 patients (84.7%; 95% CI, 73.0% to 92.8%). IBDO and EQ-SD results are summarised in the Table. Serious adverse events (SAEs) occurred in 49/205 patients (23.9%), with 3 SAEs considered treatment-related.

### Table: Mean (SD) Change from baseline to wk 54 in IBDO and EQ-SD

<table>
<thead>
<tr>
<th></th>
<th>n Baseline</th>
<th>n Week 54</th>
<th>n Change From Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBDO total score</td>
<td>138</td>
<td>116 (32.7)</td>
<td>22 1 (30.2)</td>
</tr>
<tr>
<td>EQ-SD index score</td>
<td>136</td>
<td>0.7 (0.2)</td>
<td>58 2 (0.3)</td>
</tr>
</tbody>
</table>

### Conclusion: In the maintenance treatment with GLM phase of GO-COLITIS, 37.1% and 30.0% of patients with moderate to severe UC in the UK demonstrated clinical response and remission at wk 54, respectively. Improvements in patient-reported quality of life measures (IBDO, EQ-SD) were seen; the degree of improvement in IBDO total score exceeded the IBDO increase cutoff (i.e. ≥20 for patient-defined remission previously identified as representative of a patient-defined improvement in an assessment of UC clinical endpoints). Adverse events were consistent with previous observations.

### Contact E-mail Address:
- chris.probert@liverpool.ac.uk

### Aims & Methods: Using pts taking only aminosalicylates (ASA) as a reference, we compared AE incidence, MRU and medical costs in pts with ulcerative colitis (UC) or Crohn’s disease (Crohn’s) who initiated treatment with oral corticosteroids (OCS), immuno suppressants (I), anti-tumor necrosis factor agents (aTNF) or with combinations thereof. Eligible pts (aged >18 years) in the IMS PharMetrics insurance claims database between 7/1/10 and 6/30/15 had ≥2 medical claims (≥7 days apart) and a diagnosis of UC (ICD-9-CM: 556.x) or Crohn’s (ICD-9-CM: 555.x), with >1 qualifying claim in the year preceding treatment. Univariate comparisons included statistical tests of significance (χ², F test, or Kruskal Wallis). Multivariate analyses were based on Cox proportional hazards regression, negative binomial regression, logistic regression or linear regression.
P1059 CAN EARLY DRUG AND ANTINFILXIMAB-ANTIBODY LEVELS PREDICT PRIMARY NON RESPONSE TO INFILXIMAB THERAPY?
H. Bar-Yoseph1, Y. Chowers1, N. Levhar1, L. Selinger1, U. Manor2, M. Yavzori2, E. Fudim2, O. Picard2, U. Kopylov2, R. Eliakim2, S. Ben-Horin2, B. Ungar2

Objective: To examine the impact of infliximab levels on the probability of primary non response to infliximab therapy.

Methods: This was a retrospective study of all patients who received infliximab induction at the Gastroenterology Department of Sheba Medical Center between 2009 and 2016. Clinical data and infliximab and anti-infliximab antibody levels were measured at week 2 and 6. Multivariate analysis was performed to determine the factors associated with primary nonresponse.

Results: A total of 105 primary nonresponders were identified. The median infliximab levels at week 2 and 6 were significantly lower in nonresponders compared to responders (week 2: median 7.2 µg/ml vs. 13.5 µg/ml, p = 0.0019; week 6: median 2.2 µg/ml vs. 9.5 µg/ml, p = 0.0016). Anti-infliximab antibody levels were also significantly higher in nonresponders compared to responders (week 2: median 0.004 µg/ml vs. 0.0004, p > 0.0001; week 6: median 10.8 µg/ml vs. 0.0004, p > 0.0004). Higher levels of anti-infliximab antibody were predictive of primary nonresponse. The odds ratio for primary nonresponse was 10.54 (95% CI, 2.18-51.6) for anti-infliximab antibody levels above 77% and 2.54 (95% CI, 1.12-5.77) for infliximab levels below 6.8 µg/ml.

Conclusions: Early drug and anti-infliximab antibody levels are predictive of primary nonresponse to infliximab therapy. Patients with low infliximab levels and high anti-infliximab antibody levels are at higher risk for primary nonresponse.

Disclosure of Interest: Y. Chowers: Abbvie; grant support, lecture and advisory fees; Takeda: grant support lecture and advisory fees; Medtronics: advisory fees. U. Kopylov: Speaker fees; abbvie Research support, speaker and advisory fees; S. Ben-Horin: SBH has received consultancy and/or advisory board fees from Celltrion, AbbVie, Genentech, Roche, and Takeda; and has received research support from Celltrion, AbbVie & Takeda.

B. Ungar: I received consultation fees from Abbvie and Janssen. All other authors have declared no conflicts of interest.

P1060 TREATMENT EXPERIENCE WITH TOPICAL PRODUCTS FOR ULCERATIVE COLITIS–THE PATIENTS PERSPECTIVE IN EUROPE AND THE USA

T. Buryhoffer1, A. Thompson2, T. Knittel3

Objective: To evaluate the treatment experience of patients with ulcerative colitis (UC) with topical products in Europe and the USA.

Methods: A survey was conducted among patients with UC in Europe and the USA to assess their treatment experience with topical products. The survey included questions about product use, satisfaction, and factors influencing product choice.

Results: A total of 148 patients were surveyed, with 72% from Europe and 28% from the USA. The majority of patients reported using topical products as an adjunct to other therapies. The most commonly used products were aminosalicylates and topical corticosteroids. Patient satisfaction with these products was high, with 80% of patients reporting satisfaction levels of 9 or 10 on a 10-point scale.

Conclusions: Topical products are an important component of UC management. Patient satisfaction with these products is high, and they are commonly used in conjunction with other therapies.

Disclosure of Interest: Y. Chowers: Abbvie - grant support, lecture and advisory fees; Medtronics: advisory fees; U. Kopylov: Speaker fees; Abbvie Research support, speaker and advisory fees; A. Thompson: Consulting and advisory fees from Janssen, UCB, Genentech, Celgene, and Roche; T. Knittel: Consulting and advisory fees from Celltrion, AbbVie & Takeda.

Contact E-mail Address: thomas.knittel@indexpharma.com

Introduction: Topical products for ulcerative colitis have shown evidence of good efficacy and can induce better responses and earlier improvement in distal ulcerative colitis (UC) when compared with oral therapies. Despite this attractive targeted approach of delivering medications topically to the left colon a certain resistance to the use of topical therapy seems to exist.

Aims & Methods: The aim of this study was to assess the familiarity with and perceptions of patients towards topical products. A qualitative market research study was performed in the USA and 3 European countries (Germany, UK and Italy). The primary patient recruitment sources were online web portals, e-mail campaigns and social networking sites. Informal feedback gathered from opinion leader patients to identify the right sources was also used. In order to select patients with more advanced disease and/or a longer disease history current or past steroid medication was mandatory as a qualification for inclusion in the market research study. A structured questionnaire covering 14 items was pre-tested and modified in phone interviews, which was then subsequently used in telephone interviews or as a web based interactive survey, both in local language. A total of 148 patient responses were obtained via 10 phone interviews and 138 web-survey, 60 patients came from the US, 27, 25 and 36 from Germany, UK and Italy, respectively.

Results: In this survey cohort patients had been diagnosed with UC for > 5 years on average, 2/3 of patients had left-sided disease and less than a third had extensive disease. The majority of patients experienced at least 1–2 flare-ups each year and less than 15% of patients had them only rarely. Asa and steroids were the most commonly used medications in all countries, biological treatments were reported as highest in 35% (US) to the lowest 16% (UK) as stated by the patients. The vast majority of patients stated that they had treatment experience with topical products at some point during their treatment journey with slightly lower number in the US (83%) compared to the EU countries (Range 89–92%). Rectal enemas were the most common formulation delivery for topical ASA products in all markets (79%) followed by suppository (25%) and foam (13%). A total of 53% of patients were not concerned about the rectal mode of administration, while 47% reported some concerns. These mainly comprised the need to hold the enema in place, a generally uncomfortable feeling with rectal medications and painfull administration.

Conclusions: Despite a certain resistance to use topical therapy almost all patients stated to have used rectally administered products at some point during their disease journey and even patients in the USA were very familiar with these medications. Although physicians see patients as the primary driver for the resistance to use topical products in UC, less than 50% of the patients were actually concerned about the use of topical therapy in this study, thereby calling for better physician-patient communication.

Disclosure of Interest: Y. Chowers: Consultant; Abbvie, Takeda, and Merck

S. Ben-Horin: SBH has received consultancy and/or advisory board fees from Celltrion, AbbVie, Genentech, Roche, and Takeda; and has received research support from Celltrion, AbbVie & Takeda.

B. Ungar: I received consultation fees from Abbvie and Janssen. All other authors have declared no conflicts of interest.
influence the degree of SM a patient is willing to apply, such as: disease duration, active disease, health literacy, self-efficacy, patients' age, and level of trust between patient's and their IBD team. Caregivers were asked per item whether they thought this factor would be of influence and to name the three most important factors.

Results: 38 nurses (mean age 42 years) and 32 physicians (mean age 44 years) responded to the survey. The three most appealing options for nurses regarding SM were: availability of a SM web-app, Skype/Face-time consultation with nurse/physician, and an at-home faecal-calprotectin test. Physicians preferred the same SM web-app, an at-home faecal-calprotectin test in skin, and making patients in charge of their patient records. When comparing the value of each of the 12 possible choices in which patients could apply SM, only one option was valued differently between nurses and physicians, 56% of physicians factored patient's records being in charge of patient records compared to 18% of nurses (p = 0.001). Physicians thought that the 3 most important factors influencing SM in patients were: level of trust between physician and patient, self-efficacy, and disease perception. Also, 41% of the physicians found health literacy to be an important factor whereas nurses suggested that self-efficacy and disease perception and disease activity were most important. One factor was valued differently between nurses and physicians: 78% of nurses thought that patient's age was an important factor in patient's SM, compared to 34% of physicians (p = 0.001). Conclusion: Nurses and physicians agree that patient characteristics, in contrast to disease characteristics, influence SM, with self-efficacy being the most important. This study calls for further research on what patients and caregivers, want and need from SM, as SM is a team sport.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1062 DISTINCT PATTERNS OF SHORT-CHAIN FATTY ACIDS IN PATIENTS WITH ULCERATIVE COLITIS EXPERIENCING A FLARE DURING TREATMENT WITH MESALAMINE AND A HERBAL COMBINATION OF MYRRH, CHAMOMILE FLOWERS AND COFFEE CHARCOAL

J. Langhorst1, A. K. Koch1, A. Rüeff1, G. Dobos1
1Department For Internal And Integrative Medicine, Klinikum Essen-Mitte, Integrative Gastroenterology, Essen/Germany
2Enterosan, Bad Buckel-Grossenbrach/Germany
3Internal And Integrative Medicine, Klinikum Essen-Mitte, Essen/Germany

Contact E-mail Address: j.langhorst@klinikum-essen-mitte.de

Introduction: The combination of myrrh, chamomile flowers, and coffee charcoal has shown first evidence for potential efficacy in maintaining remission in ulcerative colitis (UC) patients. SCFA are end products of the microbial fermentation of dietary fibers in the gut. They are involved in the regulation of the gut immune system, promote mineral absorption, lipid metabolism, macronutrient uptake and expression of antimicrobial peptides. UC patients often show reduced occurrence of SCFA especially acetate and propionate. This might lead to unfavorable health impairments including higher risk of inflammation and heightened cancer risk.

Aims & Methods: The purpose of this study was to evaluate the influence of mesalazine and of the herbal preparation on SCFA in ulcerative colitis. Analyses was proceeded as sub-study of a randomized double-blind, double-dummy, controlled clinical trial that has been published previously. Patients were treated with the herbal preparation consisting of 100 mg myrrh, 70 mg chamomile extract and 50 mg coffee charcoal (Myrrhisol-Intest®, Repha GmbH, Langenhagen/Germany). This might lead to unfavorable health impairments including higher risk of inflammation and heightened cancer risk.

Results: A total of n = 89 patients were included in the study. N = 43 pts developed a clinical flare (descriptive statistics are shown in table 1). Patients who were treated with the herbal preparation showed a significant decline of the SCFA (M baseline = 66.12; SD = 39.59; M flare = 29.83; SD = 15.05; 95% BC [21.86–58.60]) in the event of a flare. In contrast, patients who were treated with the herbal preparation showed no significant decline of the SCFA (M baseline = 64.30; SD = 53.74; M flare = 48.09; SD = 35.90; 95% BC [7.17–42.28]) in the event of a flare. There was no significant decline in SCFA in the patients in remission neither for the herbal preparation (n = 19; M baseline = 65.77; SD = 43.38; M 12month = 48.63; SD = 23.23; 95% BC [-7.02–39.95]) nor for mesalazine (n = 27; M baseline = 57.01; SD = 34.40; M 12month = 42.01; SD = 19.84; 95% BC [-34.29–20.54]).

Conclusion: Findings show that the herbal preparation might induce different effects on the SCFA of patients with UC compared to mesalazine and therefore might exhibit different modes of action in treating UC. Since a decline of SCFA might lead to unfavorable health impairments like higher cancer risk, treatment options like the herbal preparation might yield additional beneficial effects in the treatment of UC. A combination of the two treatment modalities might be useful and should be investigated in further studies.

Disclosure of Interest: J. Langhorst: Has served as a Speaker for Repha; Research grant from Repha GmbH

All other authors have declared no conflicts of interest.

References

P1063 GRANULOCYTE-MONOCYTE APHERESIS (GMA) IN DIFFICULT-TO-TREAT INFLAMMATORY BOWEL DISEASE (IBD).

A SINGLE-CENTER REAL-LIFE EXPERIENCE

A. Caroli, F. Lamboglia, I. Franceschetti, C. Pozzan, D. Checchin, F. Bortoluzzi, R. Cappuccio, A. Vitalba

UOC di Gastroenterologia, Ospedale dell’Angelo, Mestre; Ospedale SS Giovanni e Paolo, Venezia, Mestre-Venezia/Italy

Contact E-mail Address: alessandro.caroli@uls21.ve.it

Introduction: Selective GMA using Adacolumn® device is a non-pharmacological therapeutic option for patients affected by IBD, but its precise role among the various treatments available and its true effectiveness are still debated. In particular, steroid-dependent patients, refractory or intolerant to immunosuppressant and biologics, represent a sub-group of patients with limited options of treatment. Recently, a multicentric open-label trial [the ART trial *] showed, for the first time, a clinical benefit of GMA in these problematic patients.

Aims & Methods: The aim of this study was to further evaluate, in our real-life clinical experience, the efficacy and safety of GMA in these difficult-to-treat patients. We retrospectively reviewed the clinical data of patients treated with GMA-Adacolumn® in our center between 1/1/2008 and 31/12/2016. Only steroid-dependent and/or AZA/IFX/ADA-resistant or intolerant cases were considered. GMA was performed once a week for a minimum of five consecutive weeks. Occasionally, one or two additional sessions were performed. A clinical response was defined as a ≥ 3 points reduction of a clinical activity index (CAI) for ulcerative colitis (UC) and a ≥ 100 points reduction of the Cohn disease activity index (CDAO) for Crohn disease (CD) after 12 weeks from the beginning of the treatment.

Results: The study population included a total of 30 patients (17 males, 13 females, mean age 49 years, range 21–73) affected by UC (20 patients) and CD (10 patients). Eight patients (5 UC, 3 CD) were excluded from the final analysis for insufficient data. In the non-responders group, at week 12, no response was observed in 15 (68%). The response was better in UC (11/15 = 73%) than in CD (4/7 = 57%). A steroid-sparing effect was observed in all responsive patients. GMA was generally well tolerated, as only 4 patients (13%) reported mild adverse events (headache in two, hypotenston in one, vascular procedure complication in one) and no patients discontinued the apheresis due to the adverse events.

Conclusion: In our real-life single-center experience, focused to a selected group of difficult-to-treat patients affected by IBD, GMA with Adacolumn® seems to be, in a short-time evaluation, a useful and safe option of treatment, supporting the recent data from the ART trial. Prospective randomized trials in larger series of patients with and without extended follow-up are needed to confirm these results.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
*Dignass A et al., JCC 2016;10: 812-920.
Aims & Methods: The present study aims to investigate the influence of the single and combined herbal extracts with regard to its anti-inflammatory and immune-modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine inhibiting acetylcholine-induced contractions in rat small intestinal preparations. IL1β, CXCL13 release from LPS-stimulated human macrophages (THP-1) was investigated respectively using an ELISA test system. Budesonid served as positive control. To characterize the challenged human macrophages (THP-1) was investigated respectively using an Aims & Methods:

Herbal combinations were compared and IC50 values derived. Interpretation of the combined effect, concentration-response relations of single components and the ELISA test system. Budesonid served as positive control. To characterize the challenged human macrophages (THP-1) was investigated respectively using an Aims & Methods:

Introduction:

The present study aims to investigate the influence of the single and combined herbal extracts with regard to its anti-inflammatory and immune-modulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal extract on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine inhibiting acetylcholine-induced contractions in rat small intestinal preparations. IL1β, CXCL13 release from LPS-stimulated human macrophages (THP-1) was investigated respectively using an ELISA test system. Budesonid served as positive control. To characterize the challenged human macrophages (THP-1) was investigated respectively using an Aims & Methods:

Results:

Chamomile flower and myrrh interacted additively (IC50: myrrh ¼ 5 µg/mL; chamomile flower ¼ 22 µg/mL; coffee charcoal ¼ 29 µg/mL) resulting in a DRI of 3.7. CXCL13 released from Caco2 cells was reduced by all herbal components (IC50: myrrh ¼ 41 µg/mL; chamomile flower ¼ 364 µg/mL; coffee charcoal ¼ 447 µg/mL) with comparably high IC50 values. However, application of the herbal combination, significantly reduced the IC50 of the plant extracts (myrrh ¼ 25 µg/mL; DRI ¼ 1.7; chamomile flower ¼ 124 µg/mL; DRI ¼ 2.9; coffee charcoal ¼ 124 µg/mL; DRI ¼ 3.6). IL8 release from cytokine-challenged Caco2 cells was inhibited after myrrh (IC50 ¼ 3 µg/mL; 28% max inhib.) and coffee charcoal (IC50 ¼ 218 µg/mL; 75% max inhib.) but increased after chamomile flower treatment (IC50 ¼ 39 µg/mL; 29% max stim.). Treatment with all three plant extracts resulted in a moderate IL8 inhibition with an inverted U-shape concentration-response curve (IC50: myrrh ¼ 56 µg/mL; coffee charcoal ¼ 281 µg/mL; 77% max inhib.).

Conclusion:

The herbal components myrrh, chamomile flower and coffee charcoal influenced chemokine signalling of simulated intestinal epithelial cells and activated macrophages. Myrrh and chamomile flower additionally exerted anti-inflammatory effects. Synergistic and additive effects between the plant extracts justifies the composition of the traditional herbal medicinal product (Myrrhinil Intes®) and its application for the treatment of inflammatory intestinal disorders. Disclosure of Interest: C. Vissiennon: Author Cica Vissiennon is employed by Repha GmbH Biologische Arzneimittel K. Goos: Co-Author Karl-Heinz 30 Goos is shareholder of Repha GmbH Biologische Arzneimittel All other authors have declared no conflicts of interest.

Reference


P1066 IMMUNOSUPPRESSIVE CO-TREATMENT WITH INFliximab AND ADALIMUMAB IS NOT SUPERIOR TO ANTI-TNF MONOTHERAPY TO PREVENT TREATMENT FAILURE AND TREATMENT DISCONTINUATION IN ULCERATIVE COLITIS

S. Vieujean1, E. Louis2, C. Reenaers1

1Gastroenterology, CHU Liège, Liège/Belgium

2University Hospital CHU of Liège, Liège/Belgium

Contact E-mail Address: catherine.reenaers@chu.ulg.ac.be

Introduction:

In Crohn’s disease there is clear benefit from combination therapy with infliximab (IFX) and immunosuppressive drugs (IS), while the benefit seems more limited for adalimumab (ADA). Although some studies suggest a benefit of combination therapy with IFX in ulcerative colitis (UC) few data are available for adalimumab.

Aims & Methods: Our aim was to compare real life efficacy of anti-TNF mono-therapy (IFX and ADA) and anti-TNF + IS for UC maintenance. This was a retrospective study of patients with UC treated with IFX or ADA in 2 Belgian academic and regional Hospitals. Treatment periods were divided into 6 months. We categorized patients into 3 groups: 1. monotherapy (IS during the first semester); 2. combination therapy (IFX + IS during the first semi-ster); 3. single agent (IFX or ADA during the first semester with or without failure and with or without optimisation). Patients were followed-up for the next 2 years.

Conclusions:

Conclusions: In this real-life experience, combination therapy of IFX or ADA with IS during the first semester did not achieve clinical benefit with less side effect burden compared to monotherapy.
Disclosure of Interest: All authors have disclosed no conflicts of interest.

Reference

P1067 EFFICACY AND SAFETY OF ADA-LUMINUMAB AFTER INFLEXIMAB FAILURE IN PEDIATRIC ULCERATIVE COLITIS: A REAL-LIFE EXPERIENCE FROM THE SIGENP-IBD REGISTRY


1Pediatric Gastroenterology And Liver Unit, Sapienza University of Rome Dept. of Pediatric Gastroenterology SIGENP IBD Group, Rome/Italy
2Institute For Maternal And Child Health, Irséi “barolo Garofalo,” Pediatric Department, Gastroenterology and Nutrition Unit, Trieste/Italy
3Pediatric Gastroenterology Unit, Institute “Giannina Gaslini”, Genova/Italy
4Pediatric Gastroenterology And Endoscopy, Pediatric Department, Pediatric Department, Messina/Italy
5Pediatric Gastroenterology Unit, Maggiore Hospital, Bologna/Italy
6Pediatric Gastroenterology Unit, Salesi Children Hospital, Ancona/Italy
7Pediatric Gastroenterology And Endoscopy Unit, Spirito Santo Hospital, Pescara/Italy
8Pediatric Department, Gastroenterology Unit, Buzzi Children Hospital, Milan/Italy
9Gastroenterology And Nutrition Unit, “Bambino Gesù” Children Hospital, Rome/Italy
10University Department Of Pediatrics, A.C.S. International Pharma Group SRL, Brescia/Italy
11GI Unit, Ospedale Maggiore, Bologna, Bologna/Italy

Contact E-mail Address: marina.aloi@unironiam1.it

Introduction: The objective of the present study was to evaluate the effectiveness and safety of adalimumab (ADA) in children with ulcerative colitis (UC) who experienced previous infliximab (IFX) failure or intolerance.

Aims & Methods: This retrospective study included all children with UC from a national pediatric registry who received ADA therapy. The primary endpoint was the rate of corticosteroid (CS) free remission (PUCAI <10) at week 52. Secondary outcomes were: the rate of continuous clinical response and remission, primary non-response and loss of response at Weeks 12, 30, and 52 and rate of mucosal healing (MH) at week 52.

Results: A total of 32 children with UC received ADA (median age 10 ± 4 years). Median disease duration before ADA therapy was 27 months. All patients received previous IFX therapy (43% intolerant, 50% non-responders, 7% positive anti-IFX antibodies). Fifty-two weeks after ADA initiation 13 patients (41%) were in CS-free remission. MH occurred in 9 patients (28%) at 52 weeks. The cumulative probability of clinical relapse-free course was 69%, 59% and 53% at 12, 30 and 52 weeks, respectively. Ten patients (31%) had a primary failure and 5 (15%) loss of response to ADA. No significant differences in terms of efficacy were reported between not-responders and intolerant to IFX (p = 1.0). Overall, 19 patient (59%) maintained ADA therapy during 52-week follow-up. Seven patients (22%) experienced an adverse event. No serious side effects were observed and none resulted in ADA discontinuation.

Conclusion: In this cohort of children with UC ADA had a favorable short- and long-term efficacy, allowing to recover a significant percentage of patients intolerant or not-responding to IFX. The efficacy was not related to the cause of IFX discontinuation (intolerance/failure). Overall, safety profile was good. Larger, prospective, controlled trial with longer follow-up should be suggested to better clarify the role of ADA in pediatric UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1068 LOW FODMAP DIET IMPROVE DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

G. Bodini1, E.G. Giannini2, V. Savarino1, M. Crespi1, S. Lo Pumo1, C. Zanella1, I. Baldiescara1, F. Savarino1

1Department Of Internal Medicine, IRCCS San Martino DIMI, Genova/Italy
2Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy

Contact E-mail Address: giorgia.bodini@gmail.com

Introduction: Inflammatory Bowel Diseases (IBD), Crohn Disease (CD) and Ulcerative Colitis (UC), are idiopathic autoimmune conditions whose pathogenesis is still unknown. It has been hypothesized that, in genetic predispose subjects, a deregulated immune response associated to an increase of intestinal permeability may lead to bowel damage and clinical manifestations. Thus, environmental factors and, in particular, food intake may play a pivotal role in IBD pathogenesis.

Aims & Methods: The aim of this prospective study was to evaluate the effects of a 6-week low fermentable Oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) diet on disease activity and quality of life in patients with IBD. At first visit (T0), patients were clinically evaluated by a gastroenterologist and a nutritionist, filled a questionnaire on quality of life (the IBD-Q) and underwent blood tests as well as fecal calprotectin assessment. Disease activity was defined using the Mayo score and the Harvey Bradshaw Index (HBI) for UC and CD respectively. After the baseline visit, patients were randomized into two groups: A) patients underwent a low FODMAP diet; B) patients underwent a diet with normal FODMAP amount. A food diary was used to assess patients’ adherence to the different diets. After six weeks (T1), patients had a second visit to assess disease activity, complete the IBD-Q, and repeat blood tests as well as fecal calprotectin assessment.

Results: In this prospective, interventional, cohort study, we enrolled 55 consecutive IBD patients who agreed to participate from an initial cohort of 127 IBD patients. Twenty-six patients were randomised to a low FODMAP diet (group A), while 29 patients to a standard FODMAP diet (group B). Among CD patients (n = 35, 63.6%), median HBI values significantly decreased during the study, in the whole population and in group A, whereas no change was recorded in group B (respectively P = 0.02, P = 0.02, P = 0.3). Among UC patients (n = 28, 36.4%), median Mayo scores did not significantly decrease during the study, both in the whole population and the two groups (P = 0.3, P = 0.3, and P = 0.8, respectively). Moreover, despite no statistically significant difference in quality of life in both groups at T0, in group A quality of life improved after the diet compared to group B (respectively, P = 0.06, P = 0.05 and P = 1).

Conclusion: We demonstrated that a low FODMAP diet, for a limited period of 6 weeks, is able to improve both disease activity, at least for CD, and quality of life in IBD patients. Further, larger multicentre studies are needed to confirm these preliminary data.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017
09:00–17:00

PAEDIATRIC: LOWER GI - HALL C

P1069 SUBCUTANEOUS USTEKINUMAB PROVIDED CLINICAL AND BIOLOGICAL Benefit for 9/12 REFRACTORY PEDIATRIC CROHN’s DISEASE

C. Martinez-Vinson. J. Hugot, M. Bellucin, J. Viala

Gastroenterologie Pediaetrique, Hopital Robert Debré, Paris/France

Contact E-mail Address: christine.martinez-vinson@aphp.fr

Introduction: Ustekinumab has shown a good safety profile and efficacy to induce and maintain remission in adult patients with refractory Crohn’s Disease (CD). Data are lacking in children.

Aims & Methods: All CD patients under 18 years who received ustekinumab were included in this retrospective observational study performed in a single tertiary paediatric centre.

Results: See table.

Conclusion: Subcutaneous ustekinumab is effective to induce and maintain remission in severe pediatric CD refractory to anti-TNF-α antibodies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Abstract P1069. Main patients’ characteristics at ustekinumab induction

<table>
<thead>
<tr>
<th>Gender</th>
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<th>M</th>
<th>F</th>
<th>M</th>
<th>F</th>
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<th>M</th>
<th>F</th>
<th>M</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>Age at CD onset</td>
<td>13</td>
<td>5</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>6</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>8</td>
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<tr>
<td>Age at ustekinumab induction</td>
<td>13</td>
<td>10</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>11</td>
<td>8</td>
<td>13</td>
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<tr>
<td>Duration of disease</td>
<td>2</td>
<td>12</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
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<td>2</td>
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<tr>
<td>Prior exposure to immunosuppressors</td>
<td>Aza</td>
<td>MTX</td>
<td>Tacrolimus</td>
<td>6-MP tacrolimus</td>
<td>MTX</td>
<td>Aza</td>
<td>MTX</td>
<td>MTX thalidomide</td>
<td>Aza</td>
<td>Aza</td>
</tr>
</tbody>
</table>
| Prior exposure to Biotherapies | Primary inefficacy | Loss of efficacy | Loss of efficacy | Allergy to IFX | Loss of efficacy | Primary inefficacy | Loss of efficacy | 12.5 points since inclusion without a remission as defined above; (3) absence of partial response or remission.

Results: We analyzed 107 patients with CD, with a total of 428 visits until W14. The principal reason to start infliximab was failure of immunosuppressive therapy (60%). Infliximab proved to be an effective treatment in our cohort since 75.7% (n = 81) patients were responders to infliximab and 40% (n = 42) were in clinical remission whereas 24.3% (n = 26) were non responders at W14. At week 14, 107 patients were divided in three groups related to the clinical activity of their disease: lack of clinical response, partial clinical response, clinical remission. It concerns respectively 26, 39 and 42 patients. Major baseline characteristics were not associated with clinical remission: sex, age at diagnosis, disease location, time between diagnosis and induction, age at induction. Drugs associated with infliximab at W0, W2, W6 or W14, whether it was immunosuppressive agents or corticoids were not associated with remission. Patients with low albumin levels had a worse response at induction Activity score at induction was also statistically associated with clinical remission: each decreasing of 10 points of activity score at induction increase of 0.48 times the risk to obtain clinical remission. Trough residual of infliximab > 8.5 μg/ml at W6 increase of 4.5 times the risk to obtain clinical remission at W14. Lack of growth retardation at induction increase of 3.98 times the risk to obtain clinical remission at W14.

Conclusion: Infliximab measurement in combination with evaluation of clinical severity (low body weight, growth retardation, hypoalbuminemia, severe disease) appears to be a reasonable strategy for predicting both short- and long-term treatment outcomes with IFX in the initial stage of treatment. Early detection of response to IFX is critical for the management of CD, especially in acute severe patients: it seems that the infliximab trough level at week 6 (more than 8.5 μg/ml) is predictive of a remission at week 14. Severe patients, especially patients with low body weight, growth retardation, hypoalbuminemia and severe disease may require higher doses than standard doses.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


References
Disclosure of Interest: All authors have declared no conflicts of interest.

References

Conclusion: Corticosteroids have been effectively used for decades for the rapid induction of clinical remission in patients with Inflammatory Bowel Disease (IBD). However their adverse event profile is well-known, particularly with long-term use and in younger populations, and they have no role in maintenance of remission. Steroid-sparing agents and more recently biological therapy have reduced systemic steroid use and the incidence of steroid prescriptions especially in the outpatient setting is not known.

Aims & Methods: The aim of this study was to capture real-life steroid use in both adult and adolescent populations older than 13 years old who attend a dedicated IBD clinic in a tertiary referral centre. We tried to identify risk factors associated with appropriate or excessive steroid use in the whole cohort and in the two subgroups separately. All consecutive IBD patients who were followed up for at least one year in the adult and adolescent clinic in UCLH and attended their IBD appointment during February and March 2017 were included in the study.

A steroid assessment questionnaire was completed by the clinician during the visit for eligible patients. Use and type of steroids prescribed during the past year was recorded, as well as appropriate bone protection and disease activity based on patient and Global Assessment.

Results: 60 adolescents and 59 adults were included in the study. Two thirds of adolescents had Crohn’s disease while in the adult population Crohn’s and ulcerative colitis (UC) were equally distributed. 57 (95%) adolescents had been exposed to thiopurines and 47 (78%) to anti-TNFs as opposed to 69% (p = 0.002) and 39% (p < 0.001) of adults respectively. Vedolizumab exposure was similar in adults and adolescents. The percentage of patients with moderate to severe disease at last visit was comparable between two groups (60, 30% vs. 18, 31% adults, p = NS). 27 (21.3%) of patients were offered steroids during the past year and the incidence was the same in the adult and adolescent populations. 427 (15%) received excessive steroids, ie > 2 courses with a mean age of 25, 17 (62%) of them were an adult and 17 (62%) adults and adolescents were treated with Vedolizumab, while the choice of steroid was associated with a diagnosis of Crohn’s disease and was not different between the two groups. One third of patients did not receive bone protection with the steroid prescription, however this was only observed in the UC population rather than Predisimone (7/10 vs 2/17, p = 0.003). Steroid use overall was not associated with the age group or initial diagnosis but was expectedly associated with severity of disease (severe > moderate > mild, p < 0.001). The use of thiopurines or anti-TNFs did not affect steroid prescriptions, but interestingly the majority of Vedolizumab users received steroids in contrast to Vedolizumab naïve patients (7/9, 78% vs 20,109, 18%, p < 0.001). This association remained significant even after adjustment for disease severity and other co-factors, suggesting possibly the higher need for “bridging” Crohn’s disease to Budesonide rather than Predisimone (binary logistic regression showed naïve to Vedolizumab patients were protected against steroid use, OR 0.043 CI 95% 0.005–0.382, p = 0.005).

Conclusion: The use of steroids in an outpatient population with IBD is still common regardless of age group and use of anti-TNFs, as almost 1 in 4 patients received some type of oral steroid during a period of one year. Newer biologics, such as Vedolizumab, may predispose patients to higher steroid use, possibly due to slow induction of remission.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
GMA sessions continued with GMA while non-responders received GMA in combination with a low dose prednisolone 0.5 to 1.0 mg/kg bodyweight. At entry and week 12, patients were clinically and endoscopically evaluated with each patient serving as her or his own control.

**Results:** At entry, all 30 patients were corticosteroid naïve and none had deep colonic lesions or extensive loss of the mucosal tissue at the affected sites (GMA non-responders features). Ten patients achieved stable remission with the first-line medications and did not receive GMA. Six patients did not respond well to the first 5 GMA sessions and received prednisolone together with GMA, while 12 patients responded well to GMA, and achieved stable remission, but 2 patients withdrew to receive high dose prednisolone (up to 2 mg/kg bodyweight). At entry, the average CAI was 14 ± 0.4. Prednisolone was tapered to 0 mg within 3 months in those who received. Therefore, at week 12, all 30 patients were in remission, majority with mucosal healing.

**Conclusion:** In this treatment design, GMA in young corticosteroid naïve patients with active UC refractory to the first-line 5-aminosalicylates was associated with clinical remission and mucosal healing, while in non-responders to GMA mono-therapy, addition of a low dose prednisolone enhanced the efficacy of GMA and tapering of the prednisolone dose was not associated with relapse. Therefore, the majority of young steroid naïve UC patients who fail to respond to first-line 5-aminosalicylates should respond well to GMA and avoid pharmacologicals. Additionally, GMA has a good safety profile, which is a very favourable feature in growing patients.

**Disclosure of Interest:** A.R. Saniabadi: Dr. Saniabadi has a non-regular employment position at JIMBO.

**All other authors have declared no conflicts of interest.**

**References**


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**Table 1:** Continued

<table>
<thead>
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<th>AILD-IBD</th>
<th>AILD</th>
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<tr>
<td>AST (U/l)</td>
<td>235.0 [113.5 to 470.5]</td>
</tr>
<tr>
<td>IgG (g/l)</td>
<td>25.3 [16.2 to 37.8]</td>
</tr>
<tr>
<td>Fecal calprotectin (μg)</td>
<td>298.5 [114.5 to 439.8]</td>
</tr>
<tr>
<td>GI symptoms (n)</td>
<td>12</td>
</tr>
<tr>
<td>Fecal protection &gt; 60 U (n/total)</td>
<td>11/12</td>
</tr>
</tbody>
</table>

**Conclusion:** In our cohort 35% of children presenting with AILD were subsequently diagnosed with IBD. Possible risk factors for development of IBD in AILD are low haemoglobin, being leaner and younger at diagnosis. An elevated FC and the presence of GI symptoms are useful to assess the need for diagnostic endoscopy when considering diagnosis of IBD in the context of AILD. As current immunosuppression may mask mild to moderate signs and symptoms of IBD a lower threshold for endoscopy should be considered in these patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Results: Twenty-one patients with chronic refractory angiodysplasia bleeding were recruited in this study, included 10 women, aged between 40–85; 11 cases of massive hemorrhage due to self-withdrawal. Among the remaining 20 patients who were given thalidomide regularly for 6 months. (1) Eighty patients come across constipation, sleepiness and dry mouth. There were no skin rashes, peripher neuropathy and any other adverse reactions during the treatment. All side-effects resolved when thalidomide was discontinued. (2) The red blood cell after treatment was increased to 43.7 ± 10.6% (P < 0.05) compared to before treatment (35.6 ± 10.9%); hemoglobin after treatment (94.7 ± 13.5 g/L) compared with before treatment (83.2 ± 17.6 g/L); HCT after treatment (0.32 ± 0.05) compared with before treatment (0.29 ± 0.08); the difference was statistically significant (P < 0.05). (3) The ALT after treatment (32.9 ± 18.5 U/L) compared with before treatment (30.6 ± 12.8 U/L); AST after treatment (25.1 ± 8.56 U/L) compared with before (28.0 ± 12.4 U/L); γ-GT after treatment (34.4 ± 8.4 U/L) compared with before (35.6 ± 12.7 U/L); AKP after treatment (85.5 ± 19.8 U/L) compared with before (83.0 ± 20.8 U/L); ALB after treatment (36.2 ± 3.1 g/L) compared with before (36.3 ± 4.3 g/L); there was not statistically significant difference (P > 0.05). (4) Prothrombin time (PT) after treatment (12.1 ± 1.3s) compared with before (11.8 ± 1.4s); APTT after treatment (30.2 ± 3.7 s), compared with before (31.0 ± 6.2s); the difference was not statistically significant (P > 0.05). (5) cases of colonic capillary malformation review colonoscopy, and the vascular malformation improved significantly after treatment.

Conclusion: Thalidomide, with its antiangiogenic mechanism of action, seems to be a promising drug in bleeding angiodysplasia as a treatment option for patients unable to benefit from other available modalities of treatment. The study drug was well tolerated.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1079 NEWLY DEVELOPED ENDOSCOPIC DETACHABLE SNARE LIGATION THERAPY FOR COLONIC DIVERTICULAR HEMORRHAGE: A MULTICENTER PHASE II TRIAL


Gastroenterology, Shinmatsudo Central General Hospital, Chiba/Japan
Gastroenterology, Mino Medical Center, Ibaraki/Japan
Gastroenterology, Hitachinaka General Hospital, Ibaraki/Japan
Gastroenterology, Mito Medical Center, Ibaraki/Japan
Gastroenterology, Koyama Memorial Hospital, Ibaraki/Japan
Gastroenterology, University of Tsukuba Hospital, Ibaraki/Japan
Gastroenterology, University of Tsukuba Hospital, Ibaraki/Japan
Gastroenterology, Tsukuba Gakuen Hospital, Ibaraki/Japan
Gastroenterology, Koyama Memorial Hospital, Ibaraki/Japan
Gastroenterology, Hitachi University Hospital, Ibaraki/Japan
Gastroenterology, Tachikawa Memorial Hospital, Ibaraki/Japan
Gastroenterology, Hachioji Gastroenterology Clinic, Ibaraki/Japan
Gastroenterology, Hachioji Gastroenterology Clinic, Ibaraki/Japan
Gastroenterology, Hachioji Gastroenterology Clinic, Ibaraki/Japan
Gastroenterology, Kaminagura Medical Center, Ibaraki/Japan

Contact E-mail Address: kat00625@hotmail.co.jp

Introduction: Colonic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. We have reported the preliminary safety results of endoscopic detachable snare ligation (EDSL), a new method for diverticular hemorrhage. The bleeding diverticulum was ligated with a detachable snare. Unlike the endoscopic band ligation, removal of the scope to attach a ligation device and reinserter for treatment are not needed in this method. We performed a clinical trial to evaluate the efficacy and safety of EDSL.

Aims & Methods: This multicenter single arm phase II study was conducted in 12 Japanese institutions. Patients suspected of diverticular bleeding were enrolled from June 2015 to March 2017. Patients with serious heart, renal, or liver failure, sepsis, disseminated intravascular coagulation, and high-dose steroid use (pre-dnisolone dosage >10 mg/day) were excluded. The primary endpoint was the early (within 1 month) rebleeding rate in patients who were treated with EDSL. The secondary endpoints were overall early rebleeding rate in patients who had colonoscopic diverticular bleeding (intention to treat:ITT), success rate of EDSL total procedure time, EDSL procedure time, identification rate of bleeding diverticula, and adverse events. This study was approved by the ethics committee of each participating hospital and conformed to the Helsinki Declaration and the Japanese Clinical Research Guidelines.

Results: Of 123 patients with diverticular hemorrhage, 101 were treated with EDSL and the early rebleeding rate was 5% (5/101). The rebleeding rate in ITT population was 9% (11/123). Success rate of EDSL was 78% (96/123). EDSL and the early rebleeding rate was 5% (5/101). The rebleeding rate in ITT population was 9% (11/123). Success rate of EDSL was 78% (96/123). Early re-bleeding occurred in 112 patients (26%; 86 men and 26 women, mean age: 71 ± 12 years) to our hospital for treatment following a diagnosis of colonic diverticular bleeding based on abdominal CT and endoscopy findings. Early and late re-bleeding was defined as macroscopically bloody stools as a result of colonic diverticular bleeding during hospitalization and after discharge, respectively. Risk factors for early and late re-bleeding were retrospectively examined using univariate and multivariate analysis.

Results: Early re-bleeding occurred in 112 patients (26%; 86 men and 26 women, mean age: 71 ± 12 years). The mean duration until re-bleeding was 3.9 ± 2.4 days, and the average, early re-bleeding occurred 1.7 ± 1.2 times. On average, lower gastrointestinal endoscopy was performed 2.7 ± 1.2 times and endoscopic hemos- tatic treatment was performed 1.0 ± 1.0 times. In the univariate analysis, significant differences were seen in males (P = 0.005), in the use of oral antiplatelet agents (P = 0.012), and in patients not undergoing endoscopic hemostasis (P = 0.004). In the multivariate analysis, male gender (P = 0.006; odds ratio 2.06, 95%CI 1.23–3.44), the use of oral antiplatelet agents (P = 0.008; odds ratio 1.85, 95%CI 1.17–2.93), and patients not undergoing endoscopic hemostasis (P = 0.005; odds ratio 1.5, 95%CI 0.31–0.81) were independent risk factors for early re-bleeding. Late re-bleeding was seen in 72 of 345 patients who were able to follow up (21%; 46 men and 26 women, mean age: 73 ± 12 years). The mean duration until late re-bleeding was 41 ± 40 months, and on average, late re-bleeding recurred 1.5 ± 1.2 times. Only the use of oral antiplatelet agents (P = 0.05; odds ratio 1.72, 95%CI 0.98–2.98) was identified as an independent risk factor for late re-bleeding in the univariate and multivariate analysis.

Conclusion: Not undergoing endoscopic hemostasis and male gender were identified as risk factors for early re-bleeding, indicating the importance of choosing measures and hemostatic treatments to improve the detection rate of bleeding sources during endoscopy. The use of oral antiplatelet agents was a risk factor for both early and late re-bleeding, suggesting the need for patient management through multi-departmental cooperation.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1081 ACUTE LOWER GASTROINTESTINAL BLEEDING–IS NOBLADS THE ANSWER?

S. Xavier1, J. Magalhães2, J. Cotter3
1Life and Health Sciences Research Institute (ICVS); School of Medicine, University of Minho, Braga/Portugal
2Gastroenterology Department, Hospital da Senhora da Oliveira, Guimarães, Portugal
3Pt Government Associate Laboratory, 4 ICVS/3B’s, Braga/Guimarães/Portugal

Contact E-mail Address: smaxavier@gmail.com

Introduction: Acute lower gastrointestinal bleeding (ALGIB) constitutes an important gastroenterological emergency. A new score (NOBLADS) that intends to determine the risk of severe ALGIB was recently developed. We aimed to assess the validity of this score in a cohort of patients with ALGIB.

Aims & Methods: Retrospective study. Emergency consecutive admissions for ALGIB were reviewed. Severe ALGIB was defined as transfusion of ≥2 units of packed red blood cells (PRBC) and/or hematocrit decrease of ≤20% within the first 24 h and/or recurrent bleeding after 24 h of stabilization. NOBLADS score was calculated and its discriminative capacity for severe ALGIB as well as for other outcomes was assessed.

Results: Included 118 patients with a mean age of 73.6±14.4 years and 52.5% males. Most frequent etiologies for ALGIB were diverticular bleeding (23.7%) and post-polypectomy (21.2%). ALGIB was severe in 38.1% of patients. NOBLADS score showed a weak discriminative capacity to determine severe ALGIB (AUC = 0.68, p < 0.01). However, when comparing patients with NOBLADS ≤4 and >4, patients with higher scores were significantly older (69.2±15.7 years vs 78.6±10.0 years, p < 0.01), had lower hemoglobin levels as admission (11.8±2.3 g/dL vs 10.2±2.5 g/dL, p < 0.01), were transfused with more units of PRBCs during the first 24 hours and during hospital in-stay (0.4±0.9 vs 1.1±1.3, p < 0.01 and 1.0±2.2 vs 3.0±3.3, p < 0.01, respectively) and were more frequently admitted to intermediate care units (35.2% vs 59.6%, p < 0.01). No differences were found between the two groups regarding in-stay length, rebleeding rate, need for surgery or death.

Conclusion: NOBLADS score showed a weak discriminative capacity to determine severe ALGIB however, patients with NOBLADS ≤4 had greater PRBCs transfusion need and were more frequently admitted to intermediate care units. New or improved scores that can predict severe ALGIB are needed to determine more precisely appropriate care and to allow for a standardized approach.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1082 COLORECTAL CANCERS (CRCs) DEPENDING ON THE SCREENING INTERVAL IN IBARAKI, JAPAN

Y. Saitoh1, H. H. Suzuki2, I. Hyodo3
1Dept. Of Gastroenterology, Ibarakiden Medical Center, Ibaraki, Japan
2University of Tsukuba, Tsukuba, Japan
3Gastroenterology, University of Tsukuba, Ibaraki, Japan

Contact E-mail Address: saitoitoyo@yahoo.co.jp

Introduction: In Japan, CRC screening was launched as a national policy for all people aged over 40 years in 1992. 2-day FIT has been widely accepted, and has been recommended performing in every year.

Aims & Methods: The aim of this study is to analyze the concentration of FIT for colorectal cancers (CRCs) from the screening. The cut off value is adapted 20 µg Hb/g stool and the rate of further examination is around 75% for many years. In Ibaraki prefecture, CRCs were detected 3,421 cases from the screening (2000–2014) with 2-day FIT. The concentration of FIT was grouped in 20–80, 80–140, 140–200 and over 200 µg Hb/g stool. Screening have been performed with the OC-SENSOR DIANA (EIKEN, JAPAN) automated analyzer. CRCs were analyzed with age group (40–49, 50–59, 60–69, over 70-year-old), size (1–24, 25–49, over 50 mm), location (proximal, distal), Dukes’ classification (Dukes A, C, D) depending on the concentration. The chi-square test was used to compare of each group.

Results: There was no difference in gender and age group for concentration. The concentration of CRCs in the distal colon was significantly higher in the proximal colon [distal 39% (861/2,200) and proximal 32% (337/1,053) with over 200 µg Hb/g stool]. The concentration of CRCs with larger size was significantly higher than smaller size [1–24 mm 27% (533/1,961), 25–49 mm 54% (439/818) and over 50 mm 64% (169/263) with over 200 µg Hb/g stool]. The concentration of invasive CRCs was significantly higher than intra-mucosal CRCs [intra-mucosal 23% (370/1,617) and invasive 50% (888/1,793) with over 200 µg Hb/g stool]. The concentration of Dukes B, C and D were significantly higher than Dukes A except for intra-mucosal. There was no difference between Dukes B and D [Dukes A except for intra-mucosal 36% (325/910), B 68% (247/363), C 60% (232/385) and D 69% (61/89) with over 200 µg Hb/g stool].

Table 1: Fecal Hb concentration and progress of colorectal cancer

<table>
<thead>
<tr>
<th>Age</th>
<th>Size(mm)</th>
<th>Location</th>
<th>Dukes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conc.</td>
<td>40–49</td>
<td>50–59</td>
<td>60–69</td>
</tr>
<tr>
<td>20–80</td>
<td>48</td>
<td>198</td>
<td>605</td>
</tr>
<tr>
<td>80–140</td>
<td>14</td>
<td>51</td>
<td>185</td>
</tr>
<tr>
<td>140–200</td>
<td>17</td>
<td>33</td>
<td>117</td>
</tr>
<tr>
<td>200+</td>
<td>55</td>
<td>177</td>
<td>497</td>
</tr>
<tr>
<td>total</td>
<td>134</td>
<td>451</td>
<td>1,419</td>
</tr>
</tbody>
</table>

Conclusion: In 20–80 µg Hb/g stool, there were CRCs with smaller size, no inva- sion, in the proximal colon, Dukes A except for intra mucosal CRCs and so on. When the cut off value is raised over 80 µg Hb/g stool, the detection of early stage CRCs and proximal CRCs may be lost. There were many advanced CRCs with concentration over 200 µg Hb/g stool. Therefore, when the participants, who are positive with high concentration of FIT, need to take a further examination as soon as possible. Why concentration of CRCs in the distal colon were higher than in the proximal colon? It may be related to the fact that the number of developable CRCs in the distal colon are more than in the distal colon. We will go on researching mechanism about this.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1084 COLONOSCOPY SURVEILLANCE DETECTS A HIGH PREVALENCE OF ADVANCED COLORECTAL NEOPLASIA AND SERRATED POLYPSIS SYNDROME IN HODGKIN LYMPHOMA SURVIVORS
1Gastroenterology, Netherlands Cancer Institute, Amsterdam/Netherlands
2Gastroenterology & Hepatology, Erasmus Medical Center Rotterdam, Rotterdam/Netherlands
3Radiation Oncology, Netherlands Cancer Institute, Amsterdam/Netherlands
4Dept. Of Gastroenterology & Hepatology, Radboud University Medical Centre, Nijmegen/Netherlands
5Gastroenterology And Hepatology, University Medical Center Utrecht, Utrecht/Netherlands
6Hematology, Erasmus MC Cancer Institute, Rotterdam/Netherlands
7Radiation Oncology, Erasmus MC Cancer Institute, Rotterdam/Netherlands
8Hematology, University Medical Center Utrecht, Utrecht/Netherlands
9Radiation Oncology, University Medical Center Utrecht, Utrecht/Netherlands
10Radiation Oncology, Radboud University Medical Center, Nijmegen/Netherlands
11Pathology, Netherlands Cancer Institute, Amsterdam/Netherlands
12Dept Of Gastroenterology And Hepatology, Erasmus MC University Medical Center, Rotterdam/Netherlands
13Dept Of Gastroenterology & Hepatology, University Medical Center Rotterdam; Department of Gastroenterology & Hepatology, University Medical Centre Amsterdam; Amsterdam/Netherlands
14Gastroenterology & Hepatology, AMC - Gastroenterology & Hepatology, AMC: Amsterdam/NL, Amsterdam/Netherlands
15Medical Oncology, Netherlands Cancer Institute, Amsterdam/Netherlands
16Epidemiology, Netherlands Cancer Institute, Amsterdam/Netherlands

Contact E-mail Address: L.rigter@nki.nl

Introduction: Hodgkin lymphoma (HL) survivors treated with abdominal radiotherapy and/or alkylating chemotherapy have a high prevalence of colorectal cancer. This study evaluated the prevalence of colorectal neoplasia in HL survivors.

Aims & Methods: The primary aim of this multicenter cohort study was to assess the diagnostic yield of advanced colorectal neoplasia detected by a first surveillance colonoscopy in HL survivors treated with abdominal radiotherapy and/or procarbazine. Advanced colorectal neoplasia was defined as an advanced adenoma (high-grade dysplasia, ≥25% villous component, or ≥10 mm diameter), an advanced serrated lesion (dysplasia or ≥10 mm diameter), or CRC. Results were compared with general population data that underwent a primary screening colonoscopy (n = 1276 asymmetrical individuals between 50–70 years of age). This study demonstrates the results of a predefined interim analysis.

Results: A colonoscopy was performed in 101 HL survivors, who were significantly younger than general population controls (median 51 years (interquartile range 45–57) vs. 60 years (interquartile range 55–65), p < 0.001). A mean of 3.5 neoplastic lesions was detected per HL survivor (standard deviation 4.9) vs. 1.1 per control (standard deviation 1.8, p < 0.001). Despite their young age, the prevalence of advanced neoplasia was higher in HL survivors than in controls (25% (95% confidence interval 16–33%) vs. 12% (10–14%), p < 0.001). Advanced adenomas were detected in 14% (6–21%) of HL survivors and 9% of controls (7–17%, p < 0.001). The prevalence of advanced serrated lesions was higher in HL survivors than in controls (12% (6–18%) vs. 4% (3–5%), p < 0.001). Serrated polyposis syndrome was present in 6% (2–11%) of HL survivors and 0% of controls (p < 0.001).

Conclusion: HL survivors treated with abdominal radiotherapy and/or procarbazine have a high prevalence of advanced colorectal neoplasia. Colonoscopy surveillance should therefore be implemented as standard of care.

Aims & Methods: We aim to investigate the incidence of prostate cancer as a second primary malignancy among patients with prior primary colorectal cancer (CRC) using a nationwide population-based dataset. This study is a nationwide population-based retrospective cohort study. We followed up with patients registered in the Republic of Korea National Health Insurance Corporation who were diagnosed with colorectal cancer between 2007 and 2014 and investigated the incidence of prostate cancer (one year lag period). The incidence of prostate cancer was also evaluated in age and gender-matched controls using a cohort of patients diagnosed with colorectal cancer during the same period. The incidence rate was defined as the number of newly diagnosed prostate cancer patients per 1000 person-years. To assess the role of detection bias-related to the follow-up of CRC, follow-up started at the date of CRC diagnosis and continued until the earliest date of prostate cancer diagnosis, death, loss to follow-up, or the 2015 end of follow-up. We used Cox proportional hazards models to identify prostate cancer occurrences among CRC patients. We also performed the multivariable analysis. Multivariable models included the variables of age, sex, body mass index, hypertension, diabetes mellitus, dyslipidemia, and income.

Results: We analyzed a total of 85,462 first primary CRC survivors. During the follow-up period of 494,222 person-years, 2005 (2.3%) developed prostate cancer (incidence rate 4.06/1,000 person-years). The median duration of follow-up was 5.78 years. Compared with the general population, CRC patients had a significantly increased risk of secondary prostate cancer (HR = 2.30, 95% CI: 2.182–2.426; P = 0.001). Multivariable analysis (including age, sex, body mass index, hypertension, diabetes mellitus, dyslipidemia, and income) showed that age ≥ 55 years (HR = 20.85, 95% CI: 11.88–36.59; P < 0.001) is a significant independent predictor of prostate cancer.

Conclusion: Men who develop colorectal cancer are at an increased risk of prostate cancer, with the greatest risk in men under the age of 55. This data suggests that CRC patients under 55 years old require regular screening for prostate cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1086 SITE AND STAGE DISTRIBUTION OF SCREEN DETECTED AND CLINICALLY DETECTED COLORECTAL CANCERS IN THE NETHERLANDS
E. Toes-Zoutendijk1, A. Kooyker1, M. A. Elferink2, V. Lennema2, M. E. Van Leerdam1, L. S. Rigter3, M. A. Elferink2, V. Lennema2
1University Medical Center Rotterdam, Rotterdam/Netherlands
2Netherlands Comprehensive Cancer Organization, Utrecht/Netherlands
3Dept. Of Gastroenterology, Netherlands Cancer Institute, Amsterdam/Netherlands
4Department Of Public Health, Erasmus University Medical Center, Rotterdam/Netherlands

Contact E-mail Address: e.toes-zoutendijk@erasmusmc.nl

Introduction: The primary aim of this multicenter cohort study was to assess the proportion of site and stage distribution of screen detected and clinically detected colorectal cancers (CRC). The study addressed the question whether long-term colorectal cancer (CRC) mortality, screening has been introduced. Screening can be beneficial if cancers are detected in an earlier stage or in a pre-malignant stage, as survival rates of these patients will improve.

Aims & Methods: In this study stage distribution of screen detected CRCs were compared with clinically detected CRCs in the Netherlands. All CRCs detected in men and women aged 55 to 75 years in the Netherlands in 2015 were included in the analysis. Data were gathered from the Dutch Cancer Registry. The current analysis is based on 70% of these cancers that had staging information available at initial data retrieval. Data will be updated in May 2017. Proportions of site and stage distribution of screen detected and clinically detected CRCs were compared.

Results: A total of 6,517 CRCs in 2015 with staging information were available for the preliminary analysis. Of those, 2,591 (39.8%) were diagnosed as a result of CRC screening (screen detected), 3,463 (53.1%) presented with symptoms and were diagnosed as a result of CRC screening (screen detected), 1,188 (1.8%) were detected during surveillance colonoscopy and 203 (3.1%) as coincidental finding and of 143 (2.2%) the method of detection was unknown. Screen detected cancers were more often detected in an earlier stage (stage I and II) compared with clinically detected cancers, 1,687 (66.5%) and 1,188 (1.8%) respectively (p < 0.001). Screen detected cancers were more often diagnosed in the left side of the colon compared with clinically detected cancers, 46.2% vs 31.5% (p < 0.001). Comparison of stage distribution by location showed that left sided cancers were most often diagnosed in an early disease stage with 59.0% of the CRCs in stage I or II, followed by the right sided cancers with 52.8% of the CRCs in stage I or II. The CRCs of the rectum were most often diagnosed in a late disease stage, only 39.4% in stage I or II. Table 1 shows the comparison of stage distribution by location and method of detection. With screening, 68.8% of the right sided cancers, 71.0% of the left sided cancers, and 56.5% of the rectum CRCs were diagnosed in an early disease stage (stage I and II) which was all higher than clinically detected cancers (p < 0.001).

Table 1: Stage distribution of screen detected and clinically detected colorectal cancers by location and method of detection

<table>
<thead>
<tr>
<th></th>
<th>Screen detected</th>
<th>Clinically detected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right sided</td>
<td>Left sided</td>
</tr>
<tr>
<td></td>
<td>Right sided</td>
<td>Left sided</td>
</tr>
<tr>
<td>Stage</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>I</td>
<td>254 (38.3%)</td>
<td>637 (54.7%)</td>
</tr>
<tr>
<td>II</td>
<td>203 (30.8%)</td>
<td>193 (16.5%)</td>
</tr>
<tr>
<td>III</td>
<td>166 (25.0%)</td>
<td>262 (22.4%)</td>
</tr>
<tr>
<td>IV</td>
<td>41 (6.2%)</td>
<td>77 (6.6%)</td>
</tr>
</tbody>
</table>

Conclusion: Screen detected CRCs show a more favourable stage distribution compared with clinically detected cancers, with two third of the cancers
diagnosed in stage I or II. As those patients will have better survival rates, it is expected that this will decrease CRC mortality rates.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1087 LOCATION AND SEX PREDOMINANCE OF MISMATCH REPAIR DEFICIENT COLORECTAL CANCER IN IVORY COAST DIFFER FROM ITS EUROPEAN COUNTERPART
L. Bienfait1, B. Doukoure2, N. D’Haene3, I. Salmon1, P. Demetet1, L. Verset3
1Department Of Pathology, Erasme Hospital, Université Libre de Bruxelles, ULB, Brussels/Belgium
2Pathology, Université Félix Houphouët-Boigny, Abidjan/Côte D’Ivoire

Contact E-mail Address: lucie.bienfait@erasme.ulb.ac.be

Introduction: According to European and American series, 1,2 up to 20% of colorectal cancers are characterised by instability at microsatellite sites and have deleterious mutations in mismatch repair (MMR) genes (MLH1, MSH2, MSH6 and PMS2) or hypermethylation of the MLH1 promoter gene. MMR deficient colorectal cancers are predominantly found in the right colon. Although an increasing rate of colorectal cancer has been observed in many low- and middle-income countries including in West-Africa,3 data on epidemiology and biology of colorectal cancer in native Africans from this region are scarce.

Aims & Methods: We aimed to study the incidence of MMR deficient in Ivory Coast and to compare the data with those from a tertiary center in Belgium. Immunohistochemistry for MLH-1, MSH-2, MSH-6 and PMS-2 was performed on paraffin-embedded tissue samples from 83 colorectal cancers (54% males) operated in Abidjan and from 343 colorectal cancers (48% males) from Erasme University Hospital in Brussels. Immunohistochemical staining was interpreted as normal or loss of expression.

Results: Colorectal cancer is occurring at a younger age in Ivory Coast compared to Belgium (median age: 53 vs. 66). In both populations, MMR deficiency was detected in 13% of cases (11 and 43 cases, respectively). Whereas MMR deficient cancers in Brussels were mainly found in women (26/43 i.e. 61%) only 3/11 (27%) of the MMR deficient cancers from the Abidjan series occurred in females. The predominant location of MMR deficient tumours was different between both series: in the Brussels patients group, MMR deficient tumours were mainly located in the right colon (33/43 i.e. 77%) whereas in the Abidjan group they were predominant (10/11 i.e. 91%) in the left colon. With regard to the involved proteins, 6/11 (55%) of the MMR deficient cases from Ivory Coast were characterised by loss of expression of MSH2 and MSH6 whereas this immunohistochemical staining pattern was observed in only 9/43 (20%) cases from Belgium.

Conclusion: Our pilot study reveals marked differences in presentation of MMR deficient colorectal cancer between the two geographic regions. In contrast to Europe, MMR deficient colorectal cancer in Ivory Coast is mainly found in male patients and in the left colon. Moreover, there are differences with regard to the involved mismatch repair proteins. Together with the younger age at presentation, these data suggest differences in epidemiology and biology of colorectal cancer in native Africans from West Africa compared to the European population.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1088 ROUTINE MOLECULAR ANALYSIS FOR LYNCH SYNDROME IN PATIENTS WITH ADVANCED ADENOMA OR COLORECTAL CANCER WITHIN A NATIONAL SCREENING PROGRAM FOR COLORECTAL CANCER
A. Goverde1, W. Nm Dinjens2, M.J. Bruno1, R.M.W. Hofstra1, M. Doukas3, M.M. Van Der Weiden1, H.J. Dubbink1, A. Wagner1, M.C.W. Spanader1
1Clinical Genetics, Erasmus MC, University Medical Center Rotterdam, Rotterdam/Netherlands
2Pathology, Erasmus MC, University Medical Center, Rotterdam, Netherlands, Rotterdam/Netherlands
3Gastroenterology & Hepatology, Erasmus MC, University Medical Center Rotterdam, Rotterdam/Netherlands

Contact E-mail Address: a.goverde.1@erasmusmc.nl

Introduction: Lynch syndrome (LS) is the most common hereditary cause of colorectal cancer (CRC). Identifying LS carriers and their affected family members is of great importance for prevention of CRC. Routine screening for LS by immunohistochemical staining (IHC) in CRC patients <70 years of age is recommended. LS screening in adenoma patients could yield more benefit, since CRC can still be prevented in these patients. A small number of participants of the national CRC screening program is expected to have LS. We aimed to assess the diagnostic yield of IHC for LS in patients with advanced and multiple adenomas or CRC within the Dutch national fecal immunochromatographic test (FIT)-based CRC screening program.

Aims & Methods: We included participants of the national CRC screening program, referred to our center after a positive FIT from December 2013 to December 2016. IHC for MLH1, MSH2, MSH6 and PMS2 protein was performed on advanced adenomas and CRCs found at colonoscopy. Adenomas were considered advanced if they had a villous component, high-grade dysplasia or were ≥10 mm in size. Also, in cases with ≥4 non-advanced adenomas, IHC was performed on the largest adenoma. MLH1 hypermethylation analysis was added as a distinguishing sporadic from LS. All LS cases referred for genetic counselling were included. For LS patients with IHC suspect for LS were offered germline mutation analysis. If no pathogenic mutation was found, we performed somatic mutation analysis.

Results: A total of 1006 patients (54% male; mean age of 67 years (±6 years)) with positive FIT were included in the study. At colonoscopy, 355 (35%) patients (63% male; mean age of 67 years (±6 years)) had a CRC and/or adenoma eligible for IHC. A total of 322 adenoma patients were analyzed. None had aberrant MLH1 staining. A few adenomas had MLH1 promoter hypermethylation. The two patients without MLH1 promoter hypermethylation were referred for genetic counselling. Both patients had no family history suspect for LS. In both cases no germline MLH1 mutation was found and somatic mutation analysis showed that both had a likely sporadic tumour.

Conclusion: Our results indicate that routine LS screening by IHC and MLH1 hypermethylation in patients with advanced and multiple adenoma within a national FIT-based screening CRC program is not an effective strategy. The diagnostic yield of LS screening in younger adenoma patients should be assessed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. St. Anthony Hospital Gastroenterology Unit Dept. of Medicine, Padova/Italy
2. San Martino Hospital - Ulss1, Gastroenterologic Unit, Belluno/Italy
3. Department Of Gastroenterology, Cattinara Hospital, Trieste/Italy
4. Surgery Unit, Padova/Italy

Contact E-mail Address: d.caroli@libero.it

Introduction: Colorectal cancer (CRC) is a leading cause of cancer mortality in the Veneto Region (North-eastern part of Italy). Population screening of adults between 50 and 75 for CRC was begun in 2002, and it became standard practice in the Veneto local health units (LHU) of the region in 2008. In both periods, the LHU provided an FIT-based CRC screening program and the Veneto Region (NB) also provided follow-up colonoscopies and 7 LHU no. The current prospective cohort study was carried out to evaluate the impact of CRC screening on the rate of surgical oncology procedures to treat colon and rectal cancer.

Aims & Methods: Data from hospital discharge records (HDR) regarding CRC patients hospitalized between 2000 and 2015 were collected. All CRC patients whose principal diagnosis was colon and/or rectal cancer were included in the study. The number of patients studied rose approximately 18% reaching 1,547,097 for the last year (2015). The Standardized Hospitalization Ratio (SHR) using five-year age groupings was calculated and expressed per 10,000 population.

Results: During the study period, 30,399 surgical procedures for colorectal cancer were performed (colon 63%, rectum 36%, secondary malignant neoplasm 1%) with a SHR of 139.1; the number was higher in males (1.69 vs. 1.02; OR: 1.66; CI 95%: 1.62–1.7; p < 0.05). An analysis of the annual SHR distribution uncovered two distinct phases: during the first phase there was a rising tendency that reached a maximum value in 2007 (166.9; X2 trend: 46.731; p < 0.05) and during the second there was a falling tendency that reached its minimum value in 2015 (102.3; X2 trend: 429.791; p < 0.05). When the cancer sites were ana- lyzed, it was seen that despite the peak in 2007, the rate of surgical procedures of the proximal colon during the last year was the same as the 2000 value (41.5); there was, instead, a relevant decrease in the rate of procedures on the distal colon and rectum which fell from 94.4 to 59.2 (–37.5%). The study also shows that there was no significant difference in the reduction in surgical procedures for CRC in LHU in which the screening program included a follow-up colonoscopy (SHR 2015: 139.8; –29%) with respect to those centers where it was not forseen (SHR 2015: 138.5; –28%).
P1090 ETHNIC VARIATION IN ADENOMA DETECTION IN THE UK FLEXIBLE SIGMOIDOSCOPY BOWEL CANCER SCREENING PROGRAMME

Diseases Digestive Centre, University Hospital of Leicester NHS Trust, Leicester/United Kingdom

Contact E-mail Address: dennis.lim@uhl-tr.nhs.uk

Introduction: The NHS bowel scope screening programme was introduced in 2013 as a result of adults aged 55 invited for a ‘one-off’ flexible sigmoidoscopy followed by a colonoscopy if significant adenomas are detected. University Hospitals of Leicester Bowel Cancer Screening Centre serves an ethnically diverse community with approximately 25% of the population eligible for sigmoidoscopy screening being British Asian Indians and 45% being British White. Within the faecal occult blood based bowel cancer screening programme we have previously reported a lower polyp detection rate (PDR) and adenoma detection rate (ADR) in Asians undergoing colonoscopy compared to White British2. This study aims to evaluate PDR, ADR and cancer detection (CDR) in British Asian Indians taking part in the bowel scope screening programme.

Aims & Methods: Patients who underwent screening sigmoidoscopy between February 1st 2015 to March 31st 2017 were included. All individuals participating in screening sigmoidoscopy routinely report their self-selected ethnic origin. This database was cross referenced with the endoscopic and histology findings from the ‘Exeter’ online database. The findings in British Asian Indians were compared with British Whites.

Results: A total of 4287 patients underwent screening sigmoidoscopy over the 2-year period. 1169 individuals had polyps (500 adenomas). Overall polyp detection rate (PDR) was 1169/4287 (27.3%), adenoma detection rate (ADR) was 500/4287 (11.7%), hyperplastic polyps were 642/4287 (15%), sessile serrated lesions were 13/4287 (0.3%), and other polyps were 14/4287 (0.3%) (Inflammatory polyps 13, Juvenile polyp 1). Cancer detection rate was 6/4287 (0.14%). During the period studied, 3509 British white individuals (82%) and 778 British Asian Indians were detected in British White (CDR = 0.17%) but none in British Asian Indians.

Conclusion: This study found no cancers and significantly lower PDR and ADR in British Asian Indians compared to British White participants in the bowel scope screening programme. Further long term evaluation of these differences is needed and may shed light on factors contributing to the development of bowel cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1091 DEAD BOX POLYPEPTIDE 27 PROMOTES TUMORIGENICITY IN COLORECTAL CANCER THROUGH ACTIVATING NUCLEAR FACTOR KAPPA B PATHWAY AND ITS EXPRESSION IS ASSOCIATED WITH POOR SURVIVAL IN PATIENTS

1Institute Of Digestive Disease And Department Of Medicine And Therapeutics, State Key Laboratory Of Digestive Disease, The Chinese University of Hong Kong, Hong Kong/Hong Kong Pre
2Division Of Gastroenterology And Hepatology, Shanghai Institute Of Digestive Disease, Ren Ji Hospital, Shanghai Jiao Tong University, Shanghai/China

Contact E-mail Address: inflyings@gmail.com

Introduction: We identified for the first time that DDX27 (DEAD box polypep-
tide 27) gene was amplified in colorectal cancer (CRC) by whole genome sequenc-
ing. Amplification of DDX27 was detected in 47% (41/100) of primary CRC tumors and positively correlated with its mRNA overexpression. DDX27 plays a pivotal oncogenic role in colorectal carcinogenesis by promoting cell prolifera-
tion and inhibiting apoptosis. In this study, we investigate its function, mechan-
ism of action and clinical implication in CRC.

Aims & Methods: Downstream effectors and pathways of DDX27 were identified by promoter luciferase reporter assay, RT2 Profiler PCR array and western blot. The interacting partners of DDX27 were screened by BioID method and further validated using immunoprecipitation assay and immunofluorescence staining method. Clinical implication of DDX27 was assessed in two human CRC cohorts by quantitative PCR method and immunohistochemical staining of tissue microarrays.

Results: Promoter luciferase reporter assays revealed that DDX27 mainly acti-
vated nuclear factor kappa B (NF-κB) pathway in CRC cell lines (HCT116 and SW480). Ectopic expression of DDX27 promoted transcription of NF-κB signaling targets including BCL2A1, BIRC3, CCL20, CXCL3, NFKBIA, TNF and TNFAIP3. Conversely, silencing of DDX27 showed an opposite effect on NF-κB signaling. Treatment of NF-κB inhibitors CAPE and JSH-23 abrogated the pro-
motive effect of DDX27 on CRC cancer cells. We revealed that DDX27 enhanced and prolonged NF-κB signaling via reducing the accumulation of nuclear IκBα, which negatively regulates transcriptional activities of NF-κB and transport NF-κB proteins back to the cytoplasm. DDX27 overexpression marked by endogenous immunoprecipitation assay and immunofluores-
cence staining. Knockdown of NPM1 abrogated DDX27-activating NF-κB signaling, as well as its tumor-promoting function. Kaplan-Meier curves showed that higher DDX27 expression was significantly associated with shorter survival in patients with CRC of two independent cohorts (N=199 for Beijing cohort using quantitative PCR method, and N=275 for Shanghai cohort using immunohistochemical staining of tissue microarrays; both P < 0.05).

Conclusion: DDX27 plays an important oncogenic role in promoting CRC tumorigenicity via activation of NF-κB pathway. Higher expression of DDX27 is correlated with poor prognosis in CRC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
significantly different between serrated lesions, SSA/Ps and HPs were positive for MUC1/C/CA19-9 with SSA/P.

Conclusion: Our studies showed the three types of serrated lesions have their own distinct features and could be helpful to distinguish between them. SSA/P and TSA are premalignant lesions of colorectum and we should detect these lesions and control the disease endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1093 IN SITU DETECTION OF MIGRATING COLORECTAL CANCER CELL-RELEASED LARGE EXTRACELLULAR EXOSOME CLUSTERS

1 2nd Dept. Of Internal Medicine, Semmelweis University, Budapest/Hungary
2 5th Department Of Genetics, Cell- And Immunobiology, Semmelweis University, Budapest/Hungary
3 1st Department Of Pathology And Experimental Cancer Research, Semmelweis University, Budapest/Hungary
4 Institute Of Enzymology, Research Centre For Natural Sciences, Hungarian Academy Of Sciences, Budapest/Hungary
5 Computational Health Informatics Program (chip), Boston Children’s Hospital, Boston/United States of America/MA

Aims & Methods: Our study demonstrates in situ for the first time that besides conventional exosome release, migrating CRC cells also secrete large, extracellular membrane proteins, but they were also detected extracellularly, in the plasma membrane resulting in the release of individual exosomes into the extracellular space. Recently, sporadic in vitro observations of a novel, unconventional mechanism have been reported in which the exosome-like vesicles remain in one body during their secretion.

Results: 3D reconstructions showed ALIX-positive and CD63-positive exosome clusters (ECs) with 0.62 to 1.94 µm diameter (mean ± SD: 1.17 ± 0.34 µm) localized partially inside, and/or outside the cytoplasm in 85.96% (n = 28/33) of migrating CRC cells. E-cadherin HHC showed that ECs were not only captured during their exit from the cytoplasm and localized among plasma membrane proteins, but they were also detected extracellularly, in the plasma membrane-stroma interface. STEED-microscopic images showed that released ECs were composed smaller, distinguishable ALIX-positive spheroids of 98/114/150 µm diameter. Confocal and stimulated emission deconvolution (SEED) microscopy-based 3D reconstructions were used. Parametric statistics was used.

Conclusion: Our studies demonstrate in situ for the first time that besides conventional exosome release, migrating CRC cells also secrete large, extracellular ECs. These structures might fundamentally contribute to the autocrine/paracrine mechanism have been reported in which the exosome-like vesicles remain in one body during their secretion.

Disclosure of Interest: All authors have declared no conflicts of interest.
Contact E-mail Address: rcannizzaro@croc.it

**Table 1:** Comparison of clinical and endoscopic feature between APC or MUTYH carriers versus wild type patients.

<table>
<thead>
<tr>
<th></th>
<th>APC or MUTYH mutation = 36</th>
<th>Wild type = 66</th>
<th>Statistics</th>
</tr>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Male</td>
<td>19</td>
<td>52,78</td>
<td>48</td>
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<tr>
<td>Female</td>
<td>17</td>
<td>47,22</td>
<td>28,77</td>
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<tr>
<td><strong>Age at onset</strong></td>
<td></td>
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<tr>
<td>&lt; 50</td>
<td>25</td>
<td>69,44</td>
<td>19,70</td>
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<tr>
<td>≥ 50</td>
<td>11</td>
<td>38,56</td>
<td>80,30</td>
</tr>
<tr>
<td><strong>Number of polyps at index colonoscopy</strong></td>
<td>19</td>
<td>52,78</td>
<td>28,79</td>
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<tr>
<td>&lt; 20</td>
<td>17</td>
<td>47,22</td>
<td>28,77</td>
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<tr>
<td>≥ 20</td>
<td>19</td>
<td>52,78</td>
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</tr>
<tr>
<td><strong>Polyps site</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Right</td>
<td>29</td>
<td>89,56</td>
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<tr>
<td>Left</td>
<td>7</td>
<td>19,44</td>
<td>72,73</td>
</tr>
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<td><strong>Synchronous colorectal cancer</strong></td>
<td>10</td>
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<td>72,22</td>
<td>68,18</td>
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<tr>
<td>No</td>
<td>23</td>
<td>63,89</td>
<td>52,78</td>
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<tr>
<td><strong>Treatment polyps</strong></td>
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<td>Colectomy</td>
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<td>36,11</td>
<td>21,21</td>
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<tr>
<td>Endoscopic polypotomy</td>
<td>23</td>
<td>63,89</td>
<td>52,78</td>
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</table>

**Table 1: Continued**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>%</th>
<th>Number</th>
<th>%</th>
<th>Statistics</th>
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</thead>
<tbody>
<tr>
<td><strong>less than at index colonoscopy</strong></td>
<td>4</td>
<td>11,11</td>
<td>36</td>
<td>54,55</td>
<td></td>
</tr>
<tr>
<td><strong>more than at index colonoscopy and dense polyposis</strong></td>
<td>15</td>
<td>41,67</td>
<td>0</td>
<td>0.00</td>
<td>P = 0.0002</td>
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</table>

**Conclusion:** We observed a different behavior between mutated and wild-type patients. Patients with genetic involvement still developed adenomas during the follow-up and some needed colectomy. Instead, wild-type patients had mostly no recurrence. Constitutional genetic background could be suspected in wild-type patients when a continuous development of new polyps has occurred and further genetic investigation should be offered by multi-gene testing.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Table 1: Continued**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>%</th>
<th>Number</th>
<th>%</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>APC or MUTYH mutation = 36</td>
<td>4</td>
<td>11,11</td>
<td>36</td>
<td>54,55</td>
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</tr>
<tr>
<td>Wild type = 66</td>
<td>4</td>
<td>11,11</td>
<td>16</td>
<td>24,24</td>
<td>OR 0.0936 95%</td>
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<td></td>
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<td>CI: 0.0274 to 0.3197</td>
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</table>

**Conclusion:** Global DNA hypomethylation along the colorectal normal-adenoma-carcinoma sequence.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Extracellular miRNAs are stable and its expression is less characterized in plasma. Altered and overlapped miRNA profiles between tissue and plasma are less explored.

**Aims & Methods:** The present study was designed to characterize the tissue and circulating miRNA profile through colorectal adenoma-carcinoma sequence in humans. Two parallel sets of mRNAs were analyzed: (a) mRNAs in human CRC cells, (b) mRNAs in human primary normal cells (primary tumor location). To achieve that goal, human peripheral blood and biopsy of normal (N), tumoral (AT), tumor biopsies (TV) and colorectal adenoma (CRC) volunteers were also cultured and plasma were also collected two times a week over 45 days from C37BL/6-/-C38, CB/AJ mice. MiRNAs were isolated and Affymetrix GeneChip miRNA array analysis was performed for screening of the altered miRNA profile. RT-qPCR miRNA quantification was performed for validation.

**Results:** In the case of human samples out of 173 detectable miRNAs, 306 miRNAs were expressed in normal, 334 in adenoma and 321 in CRC. Characteristic miRNA expression alteration was observed in the comparison of AD vs. CRC (miR-3198, miR-340), and in CRC vs. plasma. In the case of N, CRC, overexpression of miR-612, miR-1296, miR-933, miR-937 and miR-1207 was validated by RT-PCR (p < 0.05). Partial co-expression of these miRNAs was observed in tissue pairs as well. We identified high plasma levels of 94 miRNAs in miR-126 silenced CRC cells. Furthermore, 176 miRNAs in late metastatic stages. Based on CBAJ-C38 mice model experiment where the injected tumorous cells could not adhere miR-676 found to be a host originated while miR-92a was a tumor-derived miRNA. MiR-676 and miR-92a shown significant overexpression (388x and 37x p < 0.05) in plasma samples based on real-time PCR and microarray results.

**Conclusion:** Circulating miRNAs alteration could observe in animal models and in human system. Cancer-associated miRNAs in the circulation may originate from the immunologic system or from other metastatic regions far from the primer tumor location.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1109 DNA METHYLATION CHANGES PRECEDE AND CONTRIBUTE TO SPORADIC MUTATIONS IN COLORECTAL ADENOMA AND CANCER DEVELOPMENT THROUGH INDUCED GENOMIC INSTABILITY**


**2nd Dept. Of Medicine, Semmelweis University, Budapest/Hungary**

**Contact E-mail Address:** mb@hel2.sote.hu

**Introduction:** Colorectal cancer development is characterised by sporadic mutations and epigenetic alterations. DNA mutations occur randomly and sporadically in growth-related genes, mostly on cytokine nucleotides. Active demethylation of cytosines in relation to RNA expression alterations may lead to genetic instability and DNA mutations. Whole genome DNA methylation and mutation analysis with RNA expression profiling could demonstrate the primary and secondary order of the genetic and epigenetic changes and their relation to the malignant phenotype development.

**Aims & Methods:** In this study we aimed the whole genome methylation analysis and targeted mutation analysis of colorectal cancer (CRC)-related genes (12) with upstream whole genome mRNA expression evaluation. Special focus was set on the p53 pathway and the involved genes. Methyl capture sequencing (Illumina) was performed on normal (N); adenomatous (Ad; 15) and colorectal cancer (CRC; 9) biopsy specimens. Methylation results were confirmed in silico methylation studies’ results (TCGA) and by methylation array-PCR (Quagen Methylation array). Specimens were further evaluated for 32 mutations of 12 CRC-related genes (APC, BRF, CTNNB1, EGFR, FBXW7, KRAS, BRAF, p53, SMAD4, TP53) by novel generation sequencing (Roche 454 Junior). mRNA expression evaluation was performed by whole genome expression analysis (HGU 133, Affymetrix). Tageted pathway analysis was performed for the p53 pathway. Bioinformatic analysis included overall and correlation analysis of the detected methylations and correlation of the top hyper/hypermethylation genes, methylation changes on the tumor mutation regions and related pathway gene promoters were evaluated by targeted analysis.

**Results:** Overall hypomethylation was observed on the N-Ad-CRC sequence in the gene body and non coding genomic regions. In Ad-N comparison e.g. p73, NGFR, PDGFR genes were hypermethylated for their promoters, FMN1, SLC16A7 genes were hypomethylated, respectively. In CRC-N comparison DK2, SDC2, SOX1 genes showed hypomethylation, while ERBB4, CREBS, CNTN1 genes were hypomethylated in the promoter regions. In silico analysis on the TCGA database yielded confirmatory results. The common hyper- and hypomethylated genes were also in correlation with methylation array results yielded by of p53 pathway genes showing promoter methylation alterations. DNA methylation with consecutive phenotypic effect can be observed in a diverse range of cellular events related to infection and metastasis of cancer cells. Our previous study found that miR-126 over-regulated expression and HOC activity in CRC cells. Whether RhoA activity and RhoA signaling pathway play an important role in miR-126 regulating EMT process, cell proliferation, migration and invasion of CRC remains unclear.

**Aims & Methods:** To identify RhoA signaling pathway associated with the function of proliferation, migration, invasion and expression of CRC cells. Constructed CRC cell lines of miR-126 over-expression or knockdown. Performed MTT, colony formation, wound-healing, migration, invasion assays and RT PCR, western blot analysis to study the functions of miR-126 in EMT, proliferation, migration, invasion and expression RhoA signaling pathway of CRC cells. Constructed pDsRed2-V14RhoA (constitutively active RhoA, V14RhoA) and pDsRed2-N19RhoA (domain-negative, N19RhoA) mutants, then transfected them into CRC cell lines of miR-126 over-expression or knockdown RhoA activity. Pulldown assay detected RhoA activity after transfected. Then repeated the experiments above to investigate the biological behavior changes of CRC cells.

**Results:** MiR-126 promoted the expression of E-cadherin and suppressed the expression of SLUG, Snail, Vimentin, Fibronectin of CRC cells. MiR-126 also inhibited proliferation, migration and invasion of CRC cells, and negatively regulating RhoA signaling pathway. V14RhoA mutant effectively increased the activity of RhoA and reversed the role of miR-126 by promoting EMT, proliferation, migration and invasion in miR-126 overexpressing HCT116 cells. Conversely, N19RhoA mutant effectively decreased the activity of RhoA and suppressed EMT, proliferation, migration and invasion in miR-126-silenced SW480 cells.
P1101 MIR-126 REGULATES TUMOR GROWTH AND METASTASIS IN COLORECTAL CANCER BY RECRUITING TUMOR ASSOCIATED MACROPHAGES THROUGH PARACRINE SIGNALING OF CXCL12
S. Wu 1, Z. Shen 2, M. Huang 1, W. Yuan 3, Y. Quan 2, C. Zhu 1, Z. Yang 1, X. Wang 2

1 Department Of Gastroenterology, The Third Xiangya Hospital Of Central South University, Changsha, China
2 Department Of Gastroenterology, The Third Xiangya Hospital Of Central South University, Changsha, Hunan, China, Hunan Key Laboratory of Nonresolving Inflammation and Cancer, Changsha, Hunan, China, Changsha/China

Contact E-mail Address: echoe@0428@163.com

Introduction: Colorectal carcinoma is one of the leading causes of cancer-related mortality worldwide. Tumor associated macrophages (TAMs) are critical stromal components intimately involved with the progression, invasion, and metastasis of cancer cells. Recently, increasing studies have demonstrated that microRNA-126 (miR-126) had an important role in colorectal cancer. The expression of miR-126 was decreased significantly in colorectal cancer, particularly in high metastatic cell lines, indicating that miR-126 may inhibit tumor development and metastasis. However, the mechanism underlying miR126 inhibiting cancer is uncertain, and its function in cross-talk between colorectal cancer cells and TAMs are still in its infancy.

Aims & Methods: In this study, we investigate the cross-talk between cancer cells and TAMs in colorectal cancer microenvironment, and find out what role the miR-126-CXCL12-IL6 axis plays in it. Methods: (1) The effect of miR-126 on CXCL12 expression was assessed in the CRC cell line CaCo2 transferred with a miR-126 mimic or inhibitor to increase or decrease miR-126 expression; (2) We build a co-culture system of TAMs and transferred cancer cells, and use AMD3100 to block CXCL12/CXCR4 axis, then detect the TAM recruitment and inflammation factors secretion of TAMs; (3) Furthermore, the TAMs co-cultured before were taken away from the previous system and put into a new co-culture system with untreated colorectal cancer cells, and IL6 neutralizing antibody was involved in. We detect the expression of EMT-associated factors and STAT3 pathway activation by western blot, cell growth by CCK8, metastasis by Transwell. The definition of statistical significance was defined as P < 0.05 (two-tailed).

Results: (1) miR-126 negatively regulate CXCL12 expression in post-transcript level; (2) Inhibiting miR-126 of colorectal cancer cells could promote TAMs recruitment and up-regulate inflammation factors IL1β and IL6 expression. However, blocking CXCL12/CXCR4 axis by AMD3100 could reverse this effect; (3) Inhibiting miR-126 of colorectal cancer cells could recruiting TAMs, therefore down-regulate-Ecadherin protein, up-regulate slug protein, and activate STAT3 pathway of untreated cancer cells. It could also promote cancer cells growth and metastasis. In addition, IL6 neutralizing antibodies could block this effect; (4) The result of these experiments are consistent with the common knowledge.

Conclusion: Our results reveal a novel mechanism by that miR-126 repress recruitment and inflammatory factor secretion of TAMs through controlling secretion and paracrine signaling of CXCL12 to inhibit colorectal cancer growth and metastasis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1102 THE EFFICACY OF NEXT-GENERATION OF IMAGE ENHANCED COLONOSCOPY (BLUE LASER IMAGING) IN THE DETECTION OF COLONIC LESIONS: A PILOT STUDY
R. Shimoda1, Y. Sakata1, N. Tsurowska1, S. Shirai2, T. Noda1, E. Endo3

1 Internal Medicine And Endoscopy, Saga Medical School, Saga/Japan
2 Internal Medicine And Endoscopy, Karatsu Red Cross Hospital, Karatsu/Japan
3 Internal Medicine And Endoscopy, Saiseikai Karatsu Hospital, Karatsu/Japan
4 Internal Medicine, Taku City Hospital, Taku/Japan
5 Dept. Of Gastrointestinal Endoscopy, Saga Medical School Dept. Of Gastroenterology, Saga/Japan
6 Dept. Of Internal Medicine, Saga Medical School, Saga/Japan

Contact E-mail Address: shimodorc@saga-u.ac.jp

Introduction: Narrow Band Imaging (NBI) enable detection for vascular-rich small, flat lesion and recognition of mucosal surface compared with normal colorectal mucosa and vascular pattern in colonoscopy. However, recent studies reported no significant difference in overall adenoma detection rate with the use of NBI compared with white light imaging (WLI). Blue Laser Imaging (BLI) is next-generation of image enhanced endoscopy technique using LASER light source that were realized with lighting and image processing suitable for visualization of microvessels and structures in the superficial portion of the mucous membrane.

Aims & Methods: Our aim was to determine whether the use of BLI enhances the adenoma detection rate (ADR) and miss rate compared with WLI. A total of 130 patients who underwent screening or surveillance colonoscopy in Saga University Hospital were included. Three patients were excluded because of poor bowel preparation. One hundred and twenty-seven patients were randomized to tandem colonoscopy with BLI followed by WLI (BLI-WL group) or WL followed by BLI (WL-BLI group). Polyp (adenoma) detection rates, miss rates, and the number of polyps (adenoma) detected per person (mean adenoma detection rate) were examined between the two groups.

Results: The BLI-WL group and WL-BLI group comprised 64 and 63 patients, respectively. The proportion of patients with polyps (adenoma) was 62.5% in BLI-WL group compared with 63.5% in WL-WL group. There was no significant difference between two groups regarding ADR. The number of adenomas detected per person (ADR) of BLI-WL group and WL-WL group was 2.84 and 2.90, respectively. However, the polyp miss rate of BLI-WL group was less than that of WL-WL group (1.6% vs 10.0%, P = 0.0014). Conclusion: There were no significant difference in the overall polyp (adenoma) detection rate with BLI-WL group or WL-WL group. However, miss rate was higher in WL-WL group compared with BLI-WL group (10.0% vs 1.6%, P = 0.0014). Further, BLI detected more polyps per patient compared with WL group (2.84 vs 1.90). BLI may improve polyp miss rate and the number of polyps per subject (mean adenoma detection rate) in the colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1103 COLORECTAL CANCER SCREENING COLONOSCOPY - ABSENT DISTAL POLyps IN ADVANCED PROXIMAL NEOPlASIA
R. N. Patel1, M. Hussein1, L. Polak1, A. Kumar2, S. Samanta1

1 Gastroenterology, Barking, Havering and Redbridge University Trust, Essex/United Kingdom
2 Colorectal Surgery, Barking, Havering and Redbridge University Trust, Essex/United Kingdom

Contact E-mail Address: rajan.patel@nhs.net

Introduction: The National Health Service Bowel Cancer Screening Programme (NHS BCSP) offers colonoscopy to people testing positive for Faecal Occult Blood Test (FOBT) after the age of 60. In addition, the ‘Bowel scope screening’ test offers once-only flexible sigmoidoscopy (FS) to people in the UK after the age of 55. The Norwegian (NORCAP) and Italian (SCORE) trials evaluated the effectiveness of FS screening and reported a non-statistically significant decrease in colorectal cancer (CRC) specific mortality at follow-up. It is unclear if significant proximal neoplasia is being missed in people undergoing flexible sigmoidoscopy alone.

Aims & Methods: We aim to investigate the distributions of pathology within the BCSP at a busy district general hospital in London. In 2015, 22,539 FOBT kits were returned out of the 43,884 (51.4%) sent out in the boroughs of Barking, Havering and Redbridge (BHR). Of those returned, 398 (1.8%) tested positive. We collected data for the 326 patients who attended for colonoscopy at BHR University Hospitals (81.9%). Subgroup analyses included age, sex, history, location of polyps, number of polyps, polyp size and therapies.

Results: Mean age 67, Male 60.4%. Polyps were found in 199 patients (61%), 48 polyps found in total, mean number of polyps 2.5 (Range 1–14), mean size 7 mm (Range 1 mm–60 mm), 49 (15%) hyperplastic, 156 (47.9%) adenomas and 16 (4.9%) adenocarcinoma. Patients with adenoma/carcinoma were older (67.6 vs. 66.5, P = 0.02) but there was no difference in sex (Male 61.4% vs. 59.4%, P = 0.49) when compared to those without adenoma/carcinoma. Of 172 patients with adenoma/carcinoma, 111 (64.5%) were proximal to the splenic flexure (SF). 5 out of 16 (31.2%) adenocarcinomas were proximal to SF and 2 (40%) of these patients had no polyps distal to the SF.

Adenoma/Carcinoma according to location in colon

<table>
<thead>
<tr>
<th>Adenoma/ Carcinoma</th>
<th>SF + Distal (n=61)</th>
<th>Proximal to SF (n=111)</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>67.4</td>
<td>67.7</td>
</tr>
<tr>
<td>Male</td>
<td>41 (67.2%)</td>
<td>67 (60.4%)</td>
</tr>
<tr>
<td>Number of polyps</td>
<td>1.7</td>
<td>3</td>
</tr>
<tr>
<td>Size of polyps</td>
<td>8.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Carcinoma</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

Conclusion: Patients with adenomas/carcinomas are older and those with proximal adenomas/carcinomas have more polyps but are smaller in size. One in three adenocarcinomas picked up during colonoscopy would be out of reach of a flexible sigmoidoscopy. Furthermore, over one third of the proximal cancers did not have distal polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1104 STUDIES ON CLINICOPATHOLOGICAL CHARACTERISTICS AND THE LONG-TERM PROGNOSIS OF DEPRESSIVE-TYPE COLORECTAL CARCINOMAS

S. Kudo1, T. Kurata1, K. Ichimasa1, Y. Koyama1, S. Matsudaira1, N. Toyoshima1, Y. Mori2, M. Misawa2, N. Ogata2, T. Kudo2, T. Hisayuki2, T. Hayashi2, K. Wakamura2, E. Hidaka1, T. Baba1, F. Ishida1

1Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama/Japan

Contact Email Address: kudos@med.showa-u.ac.jp

Introduction: Colorectal cancers have two development theories. One of the development theories is "adenoma-adenocarcinoma sequence" developing from protruded-types "polypes" we know generally. The other is considered to emerge directly from normal epithelium, not through the adenomatous stage. Recently, it is revealed most of this type are depressive-type carcinomas. This theory is called "de novo" pathway. We studied clinicopathological characteristics and long-term prognosis mainly on depressive-type colorectal carcinomas. And clarified the pathologic characteristics of depressive-type colorectal carcinomas compared with flat- and protruded-type. A total of 2930 colorectal neoplasms excluding advanced carcinomas were resected endoscopically or surgically in our Center from April 2001 to December 2016. Of these, 112 tumors were depressive-type. Aims & Methods: Among these 10 cases, 5 cases were developed from depressive-type lesions and one showed a para-aortic lymph node metastasis and four showed a lung metastasis. The rate of lymph node metastasis in all the depressive-type lesions was 72.4% in depressive-type, 3.2% in flat-type and 2.9% in protruded-type. Within less than 5 mm in diameter, that was 10.6%, 0% and 0% respectively. Among T1 carcinomas, the rate of vessel invasion was 64.3% in depressive-type, 34.3% in flat-type and 38.4% in protruded-type. Most of poorly differentiated or mucinous adenocarcinomas were 17.2%, 10.4% and 13.5%, that of massively submucosal invasion was 94.7%, 71.7% and 69.7%, and that of tumor budding was 36.5%, 16.1% and 17.3%, respectively. The rates of these pathological factors were significantly higher in depressive-type lesions. On the other hand, the rate of adenomatous component was 4.9%, 52.2% and 50.8% respectively. It was significantly lower in depressive-type lesions, suggesting that they emerge directly from normal epithelium without going through the adenoma stage. The rate of lymph node metastasis was 11.6%, 0.8% and 3.0% respectively. And 2 depressive-type lesions had synchronous liver metastasis. Conclusion: Depressive-type colorectal carcinomas invade massively even when they are small. They had higher risks of vascular invasion, poorly differentiated or mucinous adenocarcinoma, massive invasion and tumor budding than flat- or protruded-types. For their rapid growth and malignant potential, whether the lesion is depressive-type or not is very important in the diagnosis of colorectal carcinomas.

Disclosure of Interest: All authors have declared no conflicts of interest.

Result: The rate of distant metastasis or recurrence was 0% (9/10127). Among these 10 cases, 5 cases were developed from depressive-type lesions and one showed a para-aortic lymph node metastasis and four showed a lung metastasis. The rate of lymph node metastasis in all the depressive-type lesions was 72.4% in depressive-type, 3.2% in flat-type and 2.9% in protruded-type. Within less than 5 mm in diameter, that was 10.6%, 0% and 0% respectively. Among T1 carcinomas, the rate of vessel invasion was 64.3% in depressive-type, 34.3% in flat-type and 38.4% in protruded-type. Most of poorly differentiated or mucinous adenocarcinomas were 17.2%, 10.4% and 13.5%, that of massively submucosal invasion was 94.7%, 71.7% and 69.7%, and that of tumor budding was 36.5%, 16.1% and 17.3%, respectively. The rates of these pathological factors were significantly higher in depressive-type lesions. On the other hand, the rate of adenomatous component was 4.9%, 52.2% and 50.8% respectively. It was significantly lower in depressive-type lesions, suggesting that they emerge directly from normal epithelium without going through the adenoma stage. The rate of lymph node metastasis was 11.6%, 0.8% and 3.0% respectively. And 2 depressive-type lesions had synchronous liver metastasis. Conclusion: Depressive-type colorectal carcinomas invade massively even when they are small. They had higher risks of vascular invasion, poorly differentiated or mucinous adenocarcinoma, massive invasion and tumor budding than flat- or protruded-types. For their rapid growth and malignant potential, whether the lesion is depressive-type or not is very important in the diagnosis of colorectal carcinomas.

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: Our results demonstrate that degree of ITH of KRAS/TP53 mutations increases during the progression of colorectal tumor. Intratumoral genetic variations in the microcapsule structure may represent molecular subclones in early colorectal lesions and may be predictive of the malignant progression.

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Disclosure of Interest: All authors have declared no conflicts of interest.

P1106 THE DIAGNOSTIC VALUE OF HYPOXIA INDUCED EXOCYTOCELLULAR VESICLES IN COLORECTAL CANCER PATIENT PLASMA

A. Abols1, D. Santare2, R. Toleikiene1, E. Zandberga1, R. Vangravs2, M. Takatalo-Laine3, M. Palviainen3, A. Line1, H. Aoki2, H. Yamano1, H. Suzuki2, H. Nakase1

1Latvian Biomedical Research and Study Centre, Riga/Latvia
2Department Of Science, Riga East University Hospital, Riga/Latvia
3University of Helsinki, Helsinki/Finland

Contact Email Address: daiga.santare@lu.lv

Introduction: Hypoxia signalling has been found to enhance mechanical cell survival, chemoresistance, motility, tumour angiogenesis as well as self-renewal capacity and proliferation of putative cancer stem cells. One of the key player in hypoxia is carbonic anhydrase IX (CAIX) which is a hypoxia-inducible enzyme. CAIX is overexpressed in a variety of cancers including colon cancer and plays a crucial role in maintaining favourable intracellular pH in hypoxia. There is also evidence that extracellular vesicle (EV) production is increased in response to hypoxia and promotes adaptive response of cancer cells and we have previously demonstrated, that CAIX positive EVs secretion is increased in response to hypoxia in colorectal cancer cell line.

Aims & Methods: Within this study, we explored a possibility to use CAIX for the isolation of hypoxic EVs from colorectal cancer (CRC) patients’ plasma. EVs were isolated from plasma samples of 27 CRC patients and 25 healthy donors (HD) by using sequential centrifugation, filtration and size-exclusion chromatography steps. EVs where quantified by Nanoparticle tracking analysis (NTA) and CAIX positive EVs where determined by ApoeeA50.

Results: Statistically significant increase in the amount and size of EVs was seen in CRC plasma samples. Median CAIX positive EVs secretion was significantly higher in CRC patients than in HD. In addition, it is higher in patients with metastasis than without distant metastases.

Conclusion: There is an increased total EV number, EV size and CAIX positive EV amount in CRC patient plasma compared to HD plasma, that might have diagnostic and prognostic value. (Financed by Latvian Council of Science and collaboration Project No: 19-05-01011).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1107 THE GENESIS STUDY: GENETIC BIOSPY FOR PREDICTION OF SURVEILLANCE INTERVALS AFTER ENDOSCOPIC RESECTION OF COLORECTAL POLYPS


1Department Of Internal Medicine I, Ulm University, Ulm/Germany
2Department Of Internal Medicine I, Ulm University, Ulm/Germany
3Institute For Pathology, Medical University Graz, Graz/Austria
4Gastroenterologische Schwerpunktpraxis, Dornstadt/Germany
5Institute For General Pathology And Pathological Anatomy, Technical University Munich, München/Germany
6I Department Of Internal Medicine, Technical University Munich, München/Germany
7Klinik Für Innere Medizin I, Universitätsklinikum Ulm - Klinik für Innere Medizin I, Universität Ulm, Ulm/DE, Ulm/Germany
8Universitätsklinikum Schleswig-Holstein, Campus Kiel, Schleswig-Holstein/Germany

Contact Email Address: Alexander.Meining@uniklinik-ulm.de

Introduction: Colorectal cancer (CRC) is an important contributor to cancer mortality and morbidity worldwide. 80% of CRCS arise via the adenoma-carcinoma sequence, 10–20% CRCS by sessile serrated adenomas (SSA). Hyperplastic polyps are regarded harmless. Current surveillance strategies for CRC following polypectomy are determined by endoscopic and histopathological factors. Such a distinction has also been challenged.

Aims & Methods: The study was aimed for molecular characterization of colonic polyps in patients who underwent screening colonoscopy. Correlation of the genetic analysis with endoscopic, clinical and histopathological data was attempted to potentially better define relevant risk marker or sub-groups at risk for prediction of surveillance intervals. 100 Patients were enrolled in this multicenter study (NCT02595645; Median age: 62.9 y, 50 males, 50 female). Up to 100 representative biopsy specimens were collected and stored in a formalin-free medium and finally embedded in paraffin-blocks, followed by histopathological assessment. Targeted Next Generation Sequencing (tNGS) was performed from isolated exons (38 colorectal cancer-related genes; GeneRead DNAseq Targeted Panels V2, Qagen® on a MiSeq platform (illumina®). Genetic and histopathological analysis was done blinded to the endoscopic and clinical data.

Results: In 100 patients, 234 polyps were removed. 121 polyps (54.0%) are sized <10 mm, 71 (31.7%) were ≥10 mm. For 32 polyps (14.3%) no size was available. 90 polyps (40.2%) were located in the left, 126 polyps (56.3%) in the right colon, for 8 polyps (3.6%) no location was noted. 112 polyps (50.0%) were adenomata and 110 polyps (49.1%) non-adenomatous lesions. No data were available.
P1108 QUANTITY, FRAGMENT LENGTH AND GLOBAL DNA METHYLATION LEVEL ALTERATIONS OF CIRCULATING CELL-FREE DNA IN COLORECTAL ADENOMA, CANCER AND INFLAMMATORY BOWEL DISEASES


1 2nd Department Of Internal Medicine, Semmelweis University, Budapest/Hungary
2 Hungarian Academy of Sciences, Budapest/Hungary
3 Contact E-mail Address: ezter1991@gmail.com

Introduction: Cell-free DNA (cfDNA) is circulating in human plasma and its amount is different in certain physical conditions. It is well known, that in healthy people the quantity of cfDNA is very low, but it rises in chronic disorders such as cancer. At the same time, very high cfDNA level can be measured in healthy people during physical exercise.

Aims & Methods: We aimed to analyze cfDNA changes (quantity, fragment length, global DNA methylolation level) in physiological conditions (during physical exercise) and in neoplastic and inflammatory coloectal diseases.

Results: Plasma was separated from 64 patients (16 colorectal carcinomas (CRC), 13 colonic adenomas (AD), 19 inflammatory bowel disease (IBD), and 16 normal (N) donors without evidence of disease). Plasma samples were also collected from 6 healthy athletes before, during and after physical training. DNA was isolated with High Pure Viral Large Volume NA isolation kit (Roche). cfDNA was quantified with Qubit fluorometry (Invitrogen). CDNA fragment length distribution was assessed by Bioanalyzer 2100 using High Sensitivity DNA assay (Agilent). Global DNA hypermethylation was estimated by base cut profiling (Enzyme I)-qPCR.

Discussion: High cfDNA amounts was observed in plasma samples of patients with colonic adenoma (20.6± 1.70 ng/ml), colorectal cancer (24.1± 20.02 ng/ml) and IBD (22.27±14.60 ng/ml) compared to healthy subjects (10.33±3.22 ng/ml). Highly elevated cfDNA amounts were found in plasma samples of athletes during physical exercise (66.17±29.00 ng/ml), while the cfDNA amount decreased after physical activity (51.87±39.80 ng/ml). Characteristic cfDNA fragment length distribution pattern (with different peak heights at 180 bp, 360 bp, 550 bp) was observed in each patient group. Global DNA hypomethylation was shown in CRC plasma samples with advanced tumor stage (N: 79%, 79%, advanced CRC: 72.3%, 89.4% and 80.9% in the plasma fraction of patients with CRC and 89.2%, 83.8%, 81.1% and 70.3% of adenoma patients, respectively). In multiple logistic regression analysis, the four markers together with sex and smoking showed distinct CRC patients from healthy individuals with 91.5% sensitivity and 97.3% specificity (AUC = 0.978) and could differentiate adenoma samples from healthy controls with 89.2% sensitivity and 86.5% specificity (AUC = 0.937). In silico analyses confirmed our results on the altered methylolation of the four markers in colorectal adenocarcinoma.

Conclusion: Our findings suggest that SFRP1, SFRP2, SDC2 and PRIMA1 can be used as epigenetic biomarker candidates for colorectal adenoma and cancer diagnose with high sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1110 URINE-NMR METABOLOMICS FOR SCREENING OF ADVANCED COLORECTAL ADENOMA AND EARLY STAGE COLORECTAL CANCER

E. Kim1, H.N. Kwon2, S.H. Kim1, N.Y. Paik1, S. Hong1, T.J. Kim1, D.K. Chang1, J.J. Kim1, S.H. Park1, Y. Kim1

1 Samsung Medical Center, Dept. of Gastroenterology, Seoul/Korea, Republic of
2 College of Pharmacy, Natural Product Research Institute, Seoul National University, Seoul/Korea, Republic of
3 Gastroenterology, Samsung Medical Center, Seoul/Korea, Republic of
4 Department Of Medicine, Sungkyunkwan University School of Medicine, Seoul/Korea, Republic of

Contact E-mail Address: er.kim@samsung.com

Introduction: Metabolome, a dynamic portrait of the metabolic status of living systems, has demonstrated its great potential for use in the diagnosis of various cancers by applying advanced analytic techniques and bioinformatics tools. Recently, very few metabolomic markers in CRC have been consistently discovered, but metabolic profiles of patients with CRC including advanced colorectal cancer remain poorly understood and warrants investigation due to its non-invasive sampling method. In the last decade, several metabolomic approaches have been applied toward identifying metabolic alterations in CRC using variety of sample types including urine, tissue, serum, and feces. However, there are only few urinary metabolomic studies and especially nuclear magnetic resonance (NMR) spectroscopy, which has several advantages including relative high degree of reproducibility, easy-to-identify metabolites, high throughput, and non-destructive sample treatment, has not been applied to urine samples.

Aims & Methods: In this study, we investigate the differences in urine metabolic profiles of patients with colorectal neoplasia (CRN) including CRC and precancerous lesion, and healthy volunteers using a NMR-based urine metabolic study. In addition, we evaluate applicability as diagnostic tool of urine metabo-lomics for early detection of precancerous colorectal lesion with high sensitivity and specificity. Urine metabolomic profiles from patients with colorectal neoplasia including CRC and healthy controls (n = 156) were analyzed by NMR spectroscopy. Healthy and CRN groups were statistically discriminated using orthogonal projections to latent structure discriminant analysis (OPLS-DA). The class prediction model was validated by three-fold cross-validation. The advanced adenoma and stage 0 CRC were grouped as pre-invasive CRN.

Results: After patients underwent endoscopic resection or surgical resection for CRN, advanced adenoma has been diagnosed in 36 patients, stage O CRC in 24 patients, stage I CRC in 8 patients, stage II CRC in 7 patients, stage III CRC in 13 patients and stage IV CRC in 4 patients. CEA and CA 19-9 levels for patient with stage I to IV CRC and healthy control were also assessed. Among patients with stage I to IV CRC, CEA and CA 19-9 were increased in 19.4% and 9.0% of patients, respectively. The sensitivity and specificity of CEA and CA 19-9 were 6.2% and 99.3%, respectively. The OPLS-DA score plot showed statistically significant discrimination pre-invasive CRN as well as advanced CRC and normal with a Q2 value 0.978. As the prediction validation study, the sensitivity and specificity for diagnosing pre-invasive CRN was 96.2% and 95%, respectively. The grades predicted by the PLS-DA model showed that area under the curve was 0.823 for taurine, 0.783 for alanine and 0.842 for 3-aminoisobutyrate. In multiple receiver operating characteristics curve analyses, taurine, alanine, and 3-amino-sobutyrate were good discriminator for CRC patients.

Conclusion: NMR-based urine metabolic profiles significantly and accurately discriminate between patients with pre-invasive CRN as well as...
advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urinary NRT metabolomics as screening tool for accurate diagnosis of pre-invasive CRN.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1111 VALIDATION OF THE UTILITY OF A FAECAL IMMUNOCHEMICAL TEST FOR HAEMOGLOBIN (FIT) IN PATIENTS PRESENTING TO PRIMARY CARE WITH NEW BOWEL SYMPTOMS

J. Digby1, J. A. Strachan2, C. G. Fraser3, R. Steele1, C. Mowat1
1University of Dundee, Dundee/United Kingdom
2Blood Sciences, Ninewells Hospital & Medical School, Dundee/United Kingdom
3Gastroenterology, Ninewells Hospital & Medical School, Dundee/United Kingdom

Contact E-mail Address: jaynedigby@nhs.net

Introduction: Symptoms alone are poor predictors of underlying colon pathology. Only 14% of patients referred for colonoscopy from primary care have significant bowel disease (SBD), colorectal cancer (CRC), high risk adenoma (HRA, defined as ≥3 or any ≥1 cm) and inflammatory bowel disease (IBD). We have reported that undetectable faecal haemoglobin (f-Hb), measured by a faecal immunochromatographic test (FIT) is a good rule-out test for SBD.2,3 Since December 2015, GPs in Tayside have been encouraged to use FIT test as an adjunct to history, examination and mandatory blood tests in patients referred with bowel symptoms. Referrals are vetted by a Consultant and triaged to test or clinic. We have examined the impact of the introduction of the FIT test on referral rates and colonoscopy yield.

Aims & Methods: Patients in primary care with new bowel symptoms were encouraged to complete a FIT in addition to blood count and renal function check. We prospectively recorded FIT tests received, referrals to secondary care and colonoscopy findings over 1 year from December 2015 to December 2016. FIT tests were analysed by HMJACKarc (Kyowa Medex Co. Ltd., Japan) with encouragement to complete a FIT in addition to blood count and renal function test.

Results: 5,655 FIT tests were received. 76.2% had undetectable f-Hb, and 152 (2.7%) were untiable. 4,108 patients were referred of whom 2,238 (55%) returned a FIT. In 1,378 patients with a FIT result vetted to colonoscopy, 284 had SBD (20.6%); 86 CRC, 124 HRA and 74 IBD. 44% of patients scoped had undetectable f-Hb in whom prevalence of SBD was 6.6%. Only 13% of those referred; 77 CRC patients had co-existing iron deficiency anaemia, 14/25 HRA and 3/6 IBD had anaemia or diarrhoea. 32.2% of those with f-Hb >10 µg Hb/g faeces had SBD rising to 54.9% in those with f-Hb >400 µg Hb/g faeces. 2,677 patients completed a FIT but were not referred, in whom 100 (4%) had undetectable f-Hb. Referrals to secondary care were 14% down on the previous year.

Conclusion: A FIT test is an essential adjunct to the history, examination and blood tests in the assessment of bowel symptoms. Undetectable f-Hb is reassuring Primary Care that SBD is unlikely and referrals to secondary care have reduced. At colonoscopy, yield of SBD has increased and is high in those with detectable f-Hb. Excluding patients with co-existing anaemia or diarrhoea, an undetectable f-Hb is a good rule-out test and will miss only 5% of all SBD. Furthermore, f-Hb concentration could aid triage irrespective of symptoms.

Disclosure of Interest: C.G. Fraser: Prof. Callum Fraser has undertaken consultancy with Immunostics, Ocean, New Jersey, USA; Mode Diagnostics, Glasgow, Scotland; and Kyowa-Medex Co., Tokyo, Japan: and has received travel support from Immunostics, Ocean, New Jersey, USA.

References

P1112 NEW FECAL IMMUNOASSAY TEST (FIT) FOR THE COLORECTAL CANCER SCREENING IN ILE DE FRANCE: IMPACT OF AGE, GENDER AND HEMOGLOBIN LEVEL

S. Berce1, A. Liautaud2, A. Kaufmanns3, C. Vincet4, A. Berrouxs5, H. Aithadad6, H. Delatres7, G. Lemb8, A. Koivugui7, T. Leurtung7, Z. Brixie1, I. Sobhani1
1ADOC94, Joinville Le Pont/France
2ADECAT, Paris/France
3ADC77, ADC/France
4ADNY78, ADY/France
5ADMC1, ADMC/France
6ADKO2, ADK/France
7CDVC3, CDC/France
8APSY95, APSY/France
9Dep. De Hepato-Gastroenterologie, Universite Paris 12 Hospital H. Mondor Dept. of Hepato-Gastroenterology, Creteil/France

Contact E-mail Address: iradj.sobhani@aphp.fr

Introduction: The immunological screening test (FIT) for colorectal cancer (CCR) was introduced in January 2015 in Ile de France (15 million inhabitants) after Hemocult was abandoned due to its low sensitivity. The Hemocult (HC) launched in 2007 had reached less than 30% participation rate.

Aims & Methods: We report one-year on FIT in CCR screening in Ile de France and compare results to those with HC test for speculating on adjustment actions. The raw data were extracted by request from the registry of the screening structure (in various areas 75, 77, 78, 91, 92, 94 and 95) covering a target population of 3026366 inhabitants. Rates of participation were calculated, and after one-year experience period, profiles of individual with positive tests, rates of those with normal colonoscopy, with polyps (all stages combined) and with high grade dysplasia (HGD) were described. Results were compared to those with HC from the launch to the end of the last campaign (Dec 2014) normalized for mean one-year output. The comparisons were made by an X2 test (qualitative variable) and multivariate stepwise analysis was performed to identify predicting factors for cancer diagnosis.

Results: At the end of the HC-based screening campaigns 2014, 2.5 million individuals were annually invited and the participation rates since 2009, ranged from 28.9% (2009) to 24.6%, with females showing higher rates for participation (30.9%) than (25.6%) to 26.1% (men). 52% of all FIT results were positive. More than 100,000 Colonoscopies and a higher positive predictive value for cancer leads to more interventions because to its simplicity and a wider distribution. The lower rate of normal colonoscopy, with polyps (all stages combined) and with cancer (advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urinary NRT metabolomics as screening tool for accurate diagnosis of pre-invasive CRN.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
accuracy and calculated compared with American, European and Japanese guidelines (1–5).

Results: Sensitivity was 100% (95% CI, 56%–100%) in all models. Specificity and accuracy of the AI model, American, European and Japanese guidelines were 68% (58%–78%) vs. 45% (35%–56%) vs. 12% (6%–21%) vs. 8% (3%–13%); and 71% (61%–86%) vs. 50% (40%–60%) vs. 20% (13%–29%) vs. 16% (9%–25%), respectively. The rate of unnecessary surgeries of the AI model was calculated as 29% in comparison with American 50% (P = 0.004, odds ratio [OR] 2), European 80% (P = 0.001, OR 10), and Japanese 84% (P = 0.001, OR 13). Consequently reducing unnecessary surgeries compared with current guidelines while providing high sensitivity. AI will help in making decisions as to whether additional surgery is indicated after endoscopic resection of T1 CRCs. Grant support: Grants-in-Aid for Scientific Research (Number 17K19732) from the Japan Society for the Promotion of Science.

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References


P1114 RISK FACTORS OF ADVANCED METACHRONOUS NEOPLASM IN COLONOSCOPIC SURVEILLANCE AFTER COLON CANCER RESECTION

K. Nam1, J.E. Shin1, K.B. Bang1, H.D. Shin1, H. Namgung2, D.G. Park2
1Gastroenterology, Dankook University Hospital, Cheonan/Korea, Republic of Korea; 2Surgery, Dankook University Hospital, Cheonan/Korea, Republic of Korea

Contact E-mail Address: nambag1108@gmail.com

Introduction: Regular surveillance colonoscopy after colon cancer resection is recommended to detect metachronous adenoma and cancer. However, risk factors of advanced metachronous neoplasm during postoperative surveillance have not been fully evaluated yet.

Aims & Methods: This study aimed to assess the risk of advanced metachronous neoplasm during surveillance colonoscopy in patients who underwent curative colon cancer resection. The patients who underwent curative colon resection for non-metastatic colon cancer between January 2002 and December 2012 in a single tertiary center were retrospectively reviewed.

Results: A total of 278 patients were enrolled in this study. Surveillance colonoscopy was performed after peroperative clearing colonoscopy. Among the patients, 182 (61.6%) were male, and the median age was 65 years. On peroperative clearing colonoscopy, accompanying high-risk adenomas (≥3, size ≥10 mm, with high-grade dysplasia and villous histology) were detected in 95 patients (31.9%) and were significantly associated with old age (≥65 years), male sex, alcohol use, smoking, and stage 3 colon cancer (P < 0.05). During the postoperative follow-up periods (median, 5.35 years), advanced metachronous neoplasm was found in 45 patients (15.1%) during surveillance colonoscopy, including colon cancer in 4 patients (1.3%). In the multivariate analysis, distal colon cancer (distal to splenic flexure; odds ratio [OR] = 4.463; P = 0.002), accompanying high-risk adenomas on peroperative clearing colonoscopy (OR = 3.414; P = 0.001), and hypertension (OR = 2.344; P = 0.026) were significant risk factors of advanced metachronous neoplasm during surveillance colonoscopy.

Conclusion: Patients who had distal colon cancer, accompanying high-risk adenoma on peroperative clearing colonoscopy, and hypertension may need a shorter colonoscopic surveillance interval. A more tailored surveillance strategy is needed to improve overall outcome in patients who undergo curative colon cancer resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1115 PROSPECTIVE COMPARISON OF THE NOVEL FULL SPECTRUM ENDOSCOPY (FUSE) AND ADVANCED HIGHER DEFINITION-WHITE LIGHT ENDOSCOPY FOR DETECTION OF POLYPS IN ROUTINE PRACTICE

A. Martinez-Alcalá García1, F. J. Martínez-Alcalá1, C. Martínez-Alcalá1, K. Thakar2, R. Maroto2, K. Mönkenmüller2, F. Martínez Alcalá2
1Centro de Innovaciones Digestivas Martínez Alcalá, Seville/Spain; 2Biostadistica, Complejo Hospitalario La Paz, Madrid/Spain

Introduction: Despite major advances in white light endoscopy detection of colon polyps remains challenging with significant polyp miss rates. The novel second generation full spectrum endoscopy (FUSE) is a new scope with two additional cameras in the sides that provides a panoramic 360° field of view.

Aims & Methods: The aim of this study is to identify the role of the FUSE in improving polyp detection. This was a single-center, prospective, randomized, open label study in patients that presented for routine colonoscopy at an outpatient unit during a six months period. Patients were randomized to either FUSE (FUSE colonoscopy CDVL slim c38) or standard frontal view (SFV) colonoscopy (Olympus Evis Exera III 190). The primary outcomes were polyp detection rates (PDR), diverticular detection rate (DDR) and complete colonoscopy. Secondary outcomes were procedure time, adverse event rates, size and characteristics of the polyps and success of endoscopic treatment (R0 resection). All procedures were performed by experienced endoscopists, who had carried out > 5000 colonoscopies and had each polypation rates of > 95%.

Results: A total of 197 patients (49.2% female, 50.8% male, median age 60 years, range ±16 years) were studied. No significant difference was seen between the 2 groups on the primary endpoints of polyps detection rate (PDR), diverticular detection rate (DDR) or complete colonoscopy (table 1). About secondary endpoints: R0 endoscopic resection was achieved in 95% in both groups (P = 0.68). The median procedure time in minutes was higher with SFV (36.7 ± 13.1 min) than FUSE (21.5 ± 10.7 min; P = 0.68; 95% confidence interval 0.38). The rate of unnecessary surgeries of the AI model was calculated as 1–2% (P = 0.008). There were no significant differences regarding adverse events, determination of colon cleanliness, or others epidemiologic factors. 2 case were excluded from the statistical analysis due to surveillance of polyposis syndrome, to avoid skewing of results.

Conclusion: In expert hands, PDR and DDR exceed 50% with advanced white light and FUSE systems. FUSE was not superior to advanced white light endoscopy for the PDR and DDR. However, with FUSE we can reduce procedure duration without any additional adverse events or increased discord rate. These data further demonstrate the safety and feasibility of the new FUSE system.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

3.65% were superficial mucosal carcinomas (<1000 μm). During UEMR, two cases (both using AUTOCUT mode) of spurting bleeding were observed (4.45%). Hemostasis was easily achieved in both cases by clamping. No patient required blood transfusion. One patient had abdominal pain on the day after resection without signs of pneumoperitoneum on CT scan. There was no perforation or delayed bleeding. In any of the cases, PAEM was able to be performed en bloc. However, lesions accompanying severe fibrosis in the submucosal layer and exhibiting the muscle retraction (MR) sign are often difficult to be resected completely. We devised a new method called “Per Anal Endoscopic Myectomy” for any lesions involving severe fibrosis, in which dissection is done between the inner circular and outer longitudinal muscles instead of between submucosal layer and muscle layer. Aims & Methods: The aim of this study is to examine the usefulness and safety of PAEM in colorectal cases that were performed in our hospital and an affiliated hospital were retrospectively reviewed. When fibrosis in the submucosal layer was suspected, pocket creation method was applied and if severe fibrosis with MR sign was found, PAEM was selected. In PAEM procedure, after dissecting circumferentially around the fibrotic area with a double tunneling method, the inner circular muscle is cut in a circular manner, which makes the outer longitudinal muscle clearly visible. The space between the inner circular and outer longitudinal muscles is sparse and suitable traction with the tunneling method makes it easier to dissect this space. PAEM was performed only for rectal lesions, and no clip closure was carried out after the procedure in most cases.

Results: Ten rectal lesions were treated with PAEM between July 2015 and March 2017. Among them, 7 cases including 2 cases with mucosal cancer, 1 case with early cancer, and 4 cases with advanced cancer were resected en bloc with negative margin. The other 3 cases showed tumor invasion to the muscle layer and the vertical margin was positive. The clinical course after PAEM was preferable in all cases. Three cases which achieved resection with negative margin but found lymphovascular invasion of the tumor underwent additional surgical intervention or adjuvant chemotherapy. In surgical cases, they could permit anus-preservation. Conclusion: PAEM for lesions exhibiting MR sign with severe fibrosis will enable en bloc resection with accurate pathological diagnosis. No complications were recorded in our experiences. Further investigation into the significance of PAEM would be needed.

Disclosure of Interest: T. Toyonaga: Dr. Toyonaga invented the Flush knife-BT in conjunction with Fujifilm Co. All other authors have declared no conflicts of interest.

References

P1117 ADENOMA DETECTION RATE INFLUENCES RISK PREDICTION OF METACHRONOUS ADVANCED COLORECTAL NEOPLASIA IN LOW-RISK PATIENTS
S.H. Kim, S.J. Lee, T.J. Kim, E.R. Kim, S.N. Hong, D.K. Chang, Y. Kim Gastroenterology, Samsung Medical Center, Seoul/Korea, Republic of

Introduction: Current guidelines recommend surveillance colonscopy after 10 years or surveillance in 5–10 years in individuals with no or 1–2 non-advanced adenomas. Aims & Methods: We hypothesized that risk of metachronous advanced colorectal neoplasia would vary based on clinical characteristics and colonoscopy quality. We identified 7,171 participants with no or non-advanced adenomas at first-time screening colonscopy. The risk of metachronous AN at surveillance colonoscopy 3–5 years later was investigated according to clinical characteristics and endoscopist adenoma detection rate (ADR). Results: In multivariate analyses, strong associations between increasing age, male sex, current smoking, family history of colorectal cancer, follow-up interval, increasing number of adenoma, and low ADR and risk of any metachronous colorectal neoplasia were observed. For metachronous AN, increasing age, male sex, increasing number of adenoma, and low ADR were independent risk factors. Among patients with 1–2 small adenomas, women with age ≥60 years or men comprised a high-risk group, which had 5.3% risk of metachronous AN at surveillance. Women <60 years old with 1–2 low-risk adenomas had very low risk (1.2%) of metachronous AN as individuals with no adenoma. Furthermore, incidence of metachronous AN was significantly higher in individuals who were considered to have low ADR compared to those without surveillance colonoscopy (1.5% vs. 0.5%, respectively; P = 0.001). Conclusion: According to patient and adenoma characteristics, and ADR of the endoscopist, the risk of metachronous AN varies among low-risk patients. In recommending surveillance colonoscopy, these factors should be taken into consideration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1118 EXPERIENCE OF PER ANAL ENDOSCOPIC MYECTOMY (PAEM)
T. Toyonaga, Y. Ohara2, S. Tanaka1, H. Takihara1, S. Baba1, F. Kawara1, T. Ishida1, Y. Morita1, E. Umemaki1, H. Morikawa1, K. Kataoka1, T. Toyonaga3
1Endoscopy, Koshitashika Toushukai Hospital, Kishiwada/Japan
2Dept. Of Endoscopy, Kobe University Hospital, Kobe/Japan
3Division Of Gastroenterology, Department Of Internal Medicine, Graduate School Of Medicine, Kobe University, Kobe/Japan

Contact E-mail Address: toyonaga@med.kobe-u.ac.jp

Introduction: The technique of endoscopic submucosal dissection has recently been improved, and large and completed lesions such as those invading ileocecal valve and appendix orifice can be resected en bloc. However, lesions accompanying severe fibrosis in the submucosal layer and exhibiting the muscle retraction (MR) sign are often difficult to be resected completely. We devised a new method called ‘Per Anal Endoscopic Myectomy’ for any small lesions involving severe fibrosis, in which dissection is done between the inner circular and outer longitudinal muscles instead of between submucosal layer and muscle layer.

Aims & Methods: The aim of this study is to examine the usefulness and safety of PAEM in colorectal cases that were performed in our hospital and an affiliated hospital were retrospectively reviewed. When fibrosis in the submucosal layer was suspected, pocket creation method was applied and if severe fibrosis with MR sign was found, PAEM was selected. In PAEM procedure, after dissecting circumferentially around the fibrotic area with a double tunneling method, the inner circular muscle is cut in a circular manner, which makes the outer longitudinal muscle clearly visible. The space between the inner circular and outer longitudinal muscles is sparse and suitable traction with the tunneling method makes it easier to dissect this space. PAEM was performed only for rectal lesions, and no clip closure was carried out after the procedure in most cases.

Results: Ten rectal lesions were treated with PAEM between July 2015 and March 2017. Among them, 7 cases including 2 cases with mucosal cancer, 1 case with early cancer, and 4 cases with advanced cancer were resected en bloc with negative margin. The other 3 cases showed tumor invasion to the muscle layer and the vertical margin was positive. The clinical course after PAEM was preferable in all cases. Three cases which achieved resection with negative margin but found lymphovascular invasion of the tumor underwent additional surgical intervention or adjuvant chemoradiation. In surgical cases, they could permit anus-preservation.

Conclusion: PAEM for lesions exhibiting MR sign with severe fibrosis will enable en bloc resection with accurate pathological diagnosis. No complications were recorded in our experiences. Further investigation into the significance of PAEM would be needed.

Disclosure of Interest: T. Toyonaga: Dr. Toyonaga invented the Flush knife-BT in conjunction with Fujifilm Co. All other authors have declared no conflicts of interest.

References

P1119 LOCAL RECURRENT AFTER ENDOSCOPIC MUCOSAL RESECTION FOR HIGH-RISK LESIONS: MAY WE BETTER PLAN THE ENDOSCOPIC FOLLOW-UP ACCORDING TO PROCEDURAL MORPHOLOGICAL AND HISTOLOGICAL CHARACTERISTICS?
C. Quondamcarlo, C. Lucidi, R. Lupenta
Gastroenterology, Regina Elena Cancer Institute, Rome/Italy

Contact E-mail Address: qcunzia@yahoo.it

Introduction: Endoscopic mucosal resection (EMR) is an increasingly used technique for the removal of large sessile and flat-laterally-spreading colorectal lesions. At present, surveillance colonscopies are ever performed to ensure detection and adequate treatment of residual or recurrent adenoma (RRA), which, occurring in 10–40% of non-pedunculated lesions, currently represents the main limitation of this technique. Fortunately, endoscopic detection of RRA in the post EMR scar is currently highly accurate using HD-WL (high definition-white light) and NBI (narrow band imaging). Anyway, indications for follow-up
Local recurrence after endoscopic mucosal resection of nonpedunculated color-morphological pattern and presence of in situ carcinoma. Moreover, RRA seems to be higher in pT1, lesions of location were sigmoidal colon (40%), ascending colon (25%) and cecum (12%). According to the morphological characteristics, 60% of lesions were sessile, 35% were pedunculated, grading medium, microinvasion, margins, submucosal extension for all pT1 removed “en bloc”. Results: 50 patients were included (mean age 63 ± 12 years, 54% females). The mean size of lesions was 21 mm (range 10–50 mm), 40% were sessile, 35% granular LST and the remaining 25% non-granular LST, the most frequent sites of location were sigmoidal colonic (40%), ascending colon (25%) and cecum (12%). According to the morphological characteristics, 60% of lesions were removed “en bloc” and 40% “piecemeal”. No sténoses were used as prophylaxis in 35% of patients and only in 1 for intraprocedural bleeding. No post-procedural bleeding or perforation occurred. APC has never been used. During the endoscopic follow-up a suspect early (3-months) RRA was documented and immediately treated in 16% and histologically confirmed only in 8%. At 6-month controls a RRA was again detected only in 2 of these patients. New cases of RRA were not found both at 6 and 12 month controls. Only 1 case of RRA was documented for lesions treated “en bloc” but this was the only one histologically suggesting an incomplete endoscopic resection. Conclusion: EMR results a technique safe and effective particularly for lesions removable “en bloc”; in this case in fact the rate of RRA seems to be low and easily histologically predictable. Although factors related to RRA in “piecemeal” EMR are still unknown, more attention would be required in relation to determined morphological pattern and presence of in situ carcinoma. Moreover, RRA seems to be ever early suggesting a close follow up only in the first period.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1120 TREATMENT STRATEGY FOR LOCAL RECURRENCES AFTER ENDOSCOPIC RESECTION OF COLORECTAL NEOPLASMS
Division Of Endoscopy, Shizuoka Cancer Center, Shizuoka/Japan
Contact E-mail Address: saito@scchr.jp
Introduction: Local recurrences after endoscopic resection (ER) frequently occur after endoscopic treatment. Recently, the efficacy of submucosal dissection (ESD) for local recurrences has been reported. However, an appropriate treatment strategy for these lesions including ESD remains unclear.

Aims & Methods: This study aimed to clarify the appropriate treatment strategy for local recurrences after ER. A total of 81 patients (81 lesions) who received treatment for local recurrences after ER for colorectal neoplasms between January 2010 and December 2016 were enrolled. Patients with pathological diagnosis of hyperplastic polypl, sessile serrated adenoma/poly, and submucosal invasive cancer in their first ER were excluded. Seven patients who underwent surgery because of submucosal invasion or technically difficult locations were also excluded. Procedural outcomes, recurrence rate and disease control rate (DCR) were evaluated according to preoperative endoscopic diagnosis of recurrent lesions (adenomatous or carcinomas). The DCR was defined as proportion of patients who were diagnosed with curative resection after ER or received additional surgery based on pathological diagnosis after ER.

Results: Seventy one patients were included allowing an appropriate analysis. Forty-nine patients diagnosed with adenomatous recurrences were treated by cold polypectomy in 15, by endoscopic mucosal resection (EMR) in 26, and by ESD in 8 patients. Cold polypectomy was applied only to diminutive (<5 mm) lesions and was not used as primary treatment. The en bloc resection rates of EMR and ESD were 53.8% and 88%, respectively (P = 0.030). Two cases (7.7%) in the EMR group developed local recurrences, but additional ER achieved curative resection. The DCR of three methods were all 100%. Meanwhile, 23 patients diagnosed with carcinous recurrences were treated by EMR in 7 and by ESD in 18 patients. The en bloc resection rates of EMR and ESD were 28.6% and 83.3%, respectively (P = 0.017). Thirty cases (42.9%) in the EMR group developed local recurrences. One case required surgery because of invasive local recurrence, the second case required chemotherapy because of distant metastasis, and the third case was followed to identify risk factors to provide local treatment. In the ESD group, the DCR in the EMR group was significantly lower than that of in the ESD group (26.4% vs. 83.3%, P = 0.017).

Conclusion: The selection of ER for local adenomatous recurrences could be based on lesion size. On the other hand, ESD is desirable for local carcinous recurrences to achieve complete disease control.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1121 A COMPARATIVE STUDY ON EFFICACY OF CHEMOTHERAPY AFTER ENDOSCOPIC COLONIC STENTING VS. THAT AFTER COLORECTAL SURGERY IN THE MANAGEMENT OF OBSTRUCTIVE COLORECTAL CANCER
H. Hanabata1, Y. Sasaki1, K. Kanazawa1, S. Igarashi1, K. Hashi1, K. Shimaya1, H. Numao1, M. Murakata1
1Gastroenterology, Aomori Prefectural Central Hospital, Aomori/Japan
2Medical Informatics, Hiroshi University Graduate School of Medicine, Hiroshi/Japan
3Gastroenterology And Hematology, Hiroshi University Graduate School of Medicine, Hiroshi/Japan
Contact E-mail Address: ohana@pastel.ocn.ne.jp
Introduction: Endoscopic stent placement in acute large-bowel obstruction due to colorectal cancer has been established as a palliative therapy or bridge to surgery with good outcomes in Japan. While, efficacy of chemotherapy after endoscopic colorectal stenting has been less known.

Aims & Methods: The aim of this study was to evaluate efficacy of chemotherapy after endoscopic colorectal stenting comparing with that after surgery. Sixty five patients with colorectal cancer of stage IV presenting obstructive symptom visited our hospital from January 2010 to December 2016. We classified into two groups who had undergone chemotherapy after endoscopic colon stenting (32 patients) and OC group who had undergone chemotherapy after surgery (23 patients). The patient’s background, adverse effects of chemotherapy and prognosis were compared in two groups.

Results: There have not been any significant differences in patient age (65.5 ± 9.3 in SC vs. 61.5 ± 14.1 in OC, p = 0.21), male to female ratio (25:7 in SC vs. 14:9 in OC, p = 0.16) and performance status (0.6 ± 0.7 in SC vs. 0.7 ± 0.8 in OC, p = 0.66). No significant difference was found in SC vs. OC in terms of obstruction severity (p = 0.6), obstruction duration (p = 0.6), and tumor location (p = 0.7). However, chemotherapy after surgery was found to significantly improve the survival of SC (p = 0.004). The median survival time was significantly different between SC (595, n = 29) and OC (459, p = 0.93). In SC, survival was found significantly longer with additional surgery (913, n = 13) than without (325, n = 19, p < 0.01). In OC, survival did not significantly differed between with resection of the primary tumor (666, n = 16) and without (595, n = 7, p = 0.93).

Conclusion: This study has demonstrated that the survival of SC was identical to that of OC, and additional surgery was found to significantly improve the prognosis in SC. Chemotherapy after endoscopic colorectal stenting can be considered tolerable as a palliative therapy or bridge to surgery for obstructive colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1122 A NEW MANEUVER TO PLACE A THROUGH-THE-SCOPE STENT IN A MALIGNANT COLONIC STRicture INACCESSIBLE WITH A STANDARD-CALIBER COLONOSCOPE, ‘OVER-THE-CATHETER’ COLONOSCOPE REPLACEMENT TECHNIQUE
Y. Iwash1, Y. Sumida1, N. Harada1, H. Tsura1, M. Tomonori1, M. Wada1, T. Ooeogawa1, M. Nakamata1, E. Iihara1
1Gastroenterology, Clinical Research Institute, National Kyushu Medical Center, Fukuoka/Japan
2Medicine And Bioregulatory Science, Kyushu University, Fukuoka/Japan
Contact E-mail Address: yoshiiroiboshi@gmail.com
Introduction: A self-expandable metallic stent (SEMS) placement is potentially a cost-saving-sparring option to manage a malignant colonic obstruction (MCO). However, in patients with coexisting peritoneal dissemination (carcinomatous adhesion), for example, insertion of a standard caliber colonscope (SC) is difficult, whereas such an endoscope combined with a large working channel is suitable for through-the-scope (TTS) SEMS placement. Failure in stenting necessitates continuous tube drainage, stoma formation, or other surgical procedures and decreases quality of life (QOL). The purpose of this study was to examine the feasibility and efficacy of “Over-the-Catheter” Colonoscope Replacement technique (OTC-CR) detailed below, in palliative (not preoperative) SEMS placement for MCO. From Oct 2012 to Dec 2016, MCO patients were consecutively considered for decompression by SEMS placement. When a conventional TTS procedure was unsuccessful, specifically, when the MCO site was inaccessible with an SCC, the patient’s background, adverse effects of chemotherapy and prognosis were compared in two groups.

Results: There have not been any significant differences in patient age (65.5 ± 9.3 in SC vs. 61.5 ± 14.1 in OC, p = 0.21), male to female ratio (25:7 in SC vs. 14:9 in OC, p = 0.16) and performance status (0.6 ± 0.7 in SC vs. 0.7 ± 0.8 in OC, p = 0.66). No significant difference was found in SC vs. OC in terms of obstruction severity (p = 0.6), obstruction duration (p = 0.6), and tumor location (p = 0.7). However, chemotherapy after surgery was found to significantly improve the survival of SC (p = 0.004). The median survival time was significantly different between SC (595, n = 29) and OC (459, p = 0.93). In SC, survival was found significantly longer with additional surgery (913, n = 13) than without (325, n = 19, p < 0.01). In OC, survival did not significantly differed between with resection of the primary tumor (666, n = 16) and without (595, n = 7, p = 0.93).

Conclusion: This study has demonstrated that the survival of SC was identical to that of OC, and additional surgery was found to significantly improve the prognosis in SC. Chemotherapy after endoscopic colorectal stenting can be considered tolerable as a palliative therapy or bridge to surgery for obstructive colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.
Abstract No: P1122

List of 6 cases with malignant colonic obstruction in whom “Over-the-Catheter” colonoscopy replacement technique was tried.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Age</th>
<th>Sex</th>
<th>Primary cancer site</th>
<th>Nature of stricture</th>
<th>Alternative scope</th>
<th>Distance from Reinserted SCC to stricture</th>
<th>Technical/Clinical outcome</th>
<th>CROSS score change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>71</td>
<td>F</td>
<td>Peritonenum</td>
<td>Splenic flexure</td>
<td>PCF-PQ260L</td>
<td>Away (SCJ)</td>
<td>Success/Success</td>
<td>1 → 4</td>
</tr>
<tr>
<td>2</td>
<td>66</td>
<td>F</td>
<td>Sigmoid colon</td>
<td>Sigmoid colon</td>
<td>PCF-PQ260L</td>
<td>Close</td>
<td>Success/Success</td>
<td>2 → 4</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>M</td>
<td>Pancreas</td>
<td>Splenic flexure</td>
<td>PCF-PQ260L</td>
<td>Away (SCJ)</td>
<td>Success/Success</td>
<td>1 → 4</td>
</tr>
<tr>
<td>4</td>
<td>41</td>
<td>F</td>
<td>Transverse colon (resected)</td>
<td>Sigmoid colon</td>
<td>GIP-Q260J</td>
<td>Close</td>
<td>Success/Success</td>
<td>1 → 4</td>
</tr>
<tr>
<td>5</td>
<td>55</td>
<td>F</td>
<td>Ovary</td>
<td>Sigmoid colon</td>
<td>EG-580NW</td>
<td>Away (Sigmoid colon)</td>
<td>Success/Success</td>
<td>0 → 3</td>
</tr>
<tr>
<td>6</td>
<td>49</td>
<td>F</td>
<td>Stomach</td>
<td>Transvers colon</td>
<td>PCF-PQ260L</td>
<td>Close</td>
<td>Success/Success</td>
<td>0 → 3</td>
</tr>
</tbody>
</table>

*CROSS, ColoRectal Obstruction Scoring System (Reference 1)

Among 63 palliative MCO cases, initial attempt to place a 22 mm SEMS by TTS procedure was unsuccessful in 6 cases (Table), all of whom had peritoneal dissemination. The reasons for technical failures were; impossible insertion of an SCC to the stricture due to carcinomatous adhesions or narrowing in 5 cases and failure in passing GW through the stenosis due to a limited viewing angle to the stricture in one case. With OTC-PR, approach to the main stenosis with a thinner (alternative) scope, GW traverse, "over-the-catheter" replacement to the SCC, and a 22 mm SEMS placement were successful in all of the 6 cases with adequate clinical improvements (CROSS score change). Notably, ultimate TTS procedures were possible from reinserted SCC distant from the stricture in 3 cases. No adverse events occurred during the procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1123 RESULT OF THE FIRST ROUND OF THE COLORECTAL CANCER SCREENING PROGRAMME IN THE BALEARIC ISLANDS (SPAIN)

1Gastroenterology, Hospital Comarcal de Inca, Inca/Spain
2Gastroenterology, Hospital Can Misses, Ibiza/Spain
3Gastroenterology, Hospital Mateu Orfila, Mahon/Spain
4Direcció General De Salut Publica I Participació, Consellera de Sanitat, Palma/Spain

Contact E-mail Address: monica.florido@hcn.es

Introduction: Colorectal cancer (CRC) is the most common cause of cancer in western countries. In Balearic Islands 700 new cases per year are diagnosed. The cost-effectiveness of CRC screening programmes are clearly demonstrated in the studies and the important public health problem of CRC justifies the development of control strategies. The aim of this study is to present the results and impact during the first round of the programme in Balearic Islands.

Aims & Methods: The first round includes the period from January 2015 through December 2016. The program has been developed in the areas of Menorca, Ibiza, Formentera and Tramuntana (Mallorca), including 30% of the Balearic Islands population. The target population (people who reside in these areas aged between 50 and 69 years old) was 75,575 individuals. Exclusion criteria. Colonoscopy performed in the previous 5 years, previous diagnosis of CRC, follow-up colonoscopies because colon disease and severe illness-contraindication for the participation. People received the invitation by letter. Quantitative immunochromatographic fecal occult blood testing (i-FOBT; OC-Sensor) was the screening method. The kit was delivered at pharmacies joined the program. The samples were deposited in urns placed in health centres. Participants who tested positive (≥100 ng/ml) were referred to pre-endoscopy evaluation and follow-up colonoscopy. The colonoscopies were performed according to the quality criteria of guidelines.

Results: Overall participation rate (number of people who provide their i-FOBT sample) was 36.5% (n = 21,555). Positive rate of i-FOBT was 7% (1438) and 94.3% of these positive tests underwent a colonoscopy (5.7% of exclusions in pre-endoscopy evaluation). 996 colonoscopies were performed. 47 adenomas with high grade dysplasia, 24 carcinomas in situ and 60 adenocarcinomas were found. Only 19% of these adenocarcinomas were T3 or T4 lesions while the rest presented earlier stages. 26% of colonoscopies were classified as high risk (>5 adenomas or at least one ≥20mm). They have been reported 2 cases of colon perforations, both resolved by endoscopic treatment.

Conclusion: We observed an acceptable participation rate in the first round of the colorectal cancer screening programme of the Balearic Islands. The index of positivity rate of i-FOBT and the results of the endoscopic explorations are according with the observed in other colorectal cancer screening programmes. We can conclude a successful development of the first round of the programme in our area.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1125 ENTEROENDOCRINE, MUSASHI 1, AND NEUROGENIN 3 CELLS IN THE LARGE INTESTINE OF THAI PATIENTS WITH IRRITABLE BOWEL SYNDROME

M. El-Salhy, T. Patchararatkul2, J.G. Hatlebukk1, T. Hausken1, O.H. Gilja1, S. Gonlaychavit1
1University Of Bergen, Clinical Medicine, bergen/Norway
2Medicine
3King Chulalongkorn Memorial Hospital, Bangkok/Thailand
4Medicine, National Centre for Functional Gastrointestinal Disorders, Bergen/Norway
5Haukeland University Hospital, National Centre for Ultrasound in Gastroenterology, Bergen/Norway

Contact E-mail Address: magdy.elsalhy@kbbk.no

Introduction: The prevalence, gender distribution, and clinical presentation of irritable bowel syndrome (IBS) differ between Asian and Western countries. The densities of enteroendocrine cells are abnormal in Western IBS patients. This study aimed at studying large-intestine enteroendocrine, Musashi 1(Msi 1; a marker for both intestinal stem cells and their early progeny), and neurogenin 3 (neuro 3; a marker for early intestinal endocrine cell progenitors) cells in Thai and IBS patients.
Aims & Methods: Thirty Thai IBS patients, and age and sex matched 20 Thai controls were included. Four biopsy samples were taken from each of the sigmoid colon and the rectum during a standard colonoscopy. Sections from these biopsy samples were immunostained for serotonin, peptide YY, oxyntomodulin (enteroglucagon), pancreatic polypeptide, somatostatin, Msi 1, neurog 3. The densities of immunoreactive cells were determined with computerized image analysis (1).

Results: In both the colon and rectum the density of serotonin cells was lower in IBS patients than controls. Whereas the density of PYY cells was increased in both the colon and rectum of IBS-D, it was reduced in IBS-M and IBS-C. The density of oxyntomodulin cells was reduced in both the colon and rectum of all IBS subtypes. While the density of PP cells was unaffected in the colon, it was reduced in the rectum. Somatostatin cell density was unaffected in both the colon and rectum. The densities of Msi 1 and neurog 3 were unchanged in both the colon and rectum.

Conclusion: The present findings of abnormal densities of the large-intestine enteroendocrine cells in Thai patients combined with previously reported changes in Western IBS patients (2) support the notion that intestinal enteroendocrine cells are involved in the pathophysiology of IBS. However, the changes in the enteroendocrine cells differed from those in Western patients. The present observations highlight that IBS differs in Asian and Western countries, and show that the changes in large-intestine enteroendocrine cells in Asian and Western IBS patients might be caused by different mechanisms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI1126 SUBJECT GLOBAL SATISFACTION SCORE TO ASSESS OVERALL EFFECT OF NALDEMEDINE COMPARED WITH PLACEBO ON CONSTIPATION AND ABDOMINAL SYMPTOMS IN SUBJECTS WITH CHRONIC NON-CANCER PAIN AND OPINION-INDUCED CONSTIPATION

J. Tack1, M. Camilleri2, B. Cai3, T. Yamada3, J.C. Arjona Ferreira3
1Gastroenterology, University of Leuven, University Hospital Gasthuisberg, Leuven/Belgium
2Mayo Clinic, Mayo Clinic Dept. of Gastroenterology Charlton Bldg., Rm. 8-100, Rochester, MN/United States of America
3Shionogi Inc, New Jersey/United States of America

Contact E-mail Address: jan.tack@med.kuleuven.ac.be

Introduction: Opioid-induced constipation (OIC) is a common side effect of opioid therapy that significantly affects multiple aspects of a patient’s life. Naldeenedine (NAL) is a peripherally-acting mu opioid receptor antagonist developed for the treatment of OIC. In Phase 3 studies, NAL improved the frequency of spontaneous bowel movements, straining, consistency of stools, and patient assessment of constipation symptoms (PAC-QOL) measures of patient’s quality of life, compared with placebo (PBO). The aim of this analysis is to assess the impact of NAL on overall satisfaction and to show if a simple score can assess the impact of treatment of OIC with NAL 0.2 mg once daily on patient’s satisfaction with constipation and abdominal pain in subjects with chronic non-cancer pain.

Aims & Methods: In three Phase 3 randomized, double-blind, PBO-controlled trials of NAL (2 of 12-week duration [COMPOSE 1 and COMPOSE 2] and 1 of 52-week duration [COMPOSE 3]), a 7-grade scale (1 = markedly, 2 = moderately, or 3 = slightly worsened; 4 = unchanged; 5 = slightly, 6 = moderately, or 7 = markedly improved) was used to assess overall satisfaction with constipation and abdominal symptoms at the last visit study. The number and proportion of subjects in each grade were calculated and the overall difference between groups was assessed by Wilcoxon rank sum test. The mean subject global satisfaction score (SGSS) was also compared between groups. For SGSS scores, from 1 to 7 were replaced with scores from -3 to +3, with 4 (unchanged) replaced with 0.

This proposed new approach provides a single score that may be easier to interpret than the 7-grade scale.

Results: There were 547 subjects in COMPOSE 1, 550 in COMPOSE 2, and 1246 in COMPOSE 3 (all ≥18 years of age) randomized (1:1) to NAL 0.2 mg once daily or PBO. The baseline characteristics of the study population were consistent between groups in each trial and between trials. Overall satisfaction assessment was completed in 372 subjects in COMPOSE 1, 296 in COMPOSE 2, and 1101 in COMPOSE 3. There were greater improvements in satisfaction with constipation and abdominal symptoms in the NAL group compared with the PBO group in all three studies (all P<0.0005; Table). The mean SGSS was 1.5 and 0.9 with NAL and PBO, respectively, in the two 12-week studies pooled, and 1.7 and 1.0, respectively, in the 52-week study.

Total subjects assessed | COMPOSE 1 | COMPOSE 2 | COMPOSE 3
------------------------|------------|------------|------------
NAL total                | 185        | 187        | 192        |
PBO total                | 204        | 194        | 207        |
Global satisfaction category, n (%) |           |            |            |
Markedly worsened (1)    | 3          | 7          | 6          |
          | (1.6)      | (3.7)      | (2.9)      |
Moderately worsened (2)  | 11         | 8          | 10         |
          | (5.9)      | (4.3)      | (2.5)      |
Slightly worsened (3)    | 7          | 4          | 5          |
          | (1.5)      | (3.7)      | (1.5)      |
Unchanged (4)            | 27         | 58         | 28         |
          | (14.6)     | (31.0)     | (13.7)     |
Slightly improved (5)    | 49         | 38         | 37         |
          | (26.5)     | (20.3)     | (21.8)     |
Moderately improved (6)  | 39         | 41         | 39         |
          | (21.1)     | (21.9)     | (26.0)     |
Markedly improved (7)    | 52         | 28         | 32         |
          | (28.1)     | (15.0)     | (16.7)     |
P-value between groups*  | 0.0005      | <0.0001    | <0.0001    

*Wilcoxon rank sum test

Conclusion: Treatment of OIC with NAL 0.2 mg once daily for 12 or 52 weeks led to greater satisfaction with constipation and abdominal symptoms compared with PBO, consistent with previously-reported improvements of PAC-SYM and PAC-QOL with NAL compared with PBO. The proposed SGSS appears to be a simple way to assess the impact on quality of life of OIC treatment.


PI1127 IBEROGAST PREVENTS CHANGES IN INTESTINAL PERMEABILITY INDUCED BY PSYCHOLOGICAL STRESS IN MICE

P. Aubert1, J. Chevalier1, T. Durand1, A. Bessard1, O. Kelber2, H. Abdel-Aziz2, M. Neunlist1
1Inserm 1235 "Intens", INSERM, Nantes/France
2Innovation & Development, Bayer Consumer Health, Darmstadt/Germany

Contact E-mail Address: michel.neunlist@univ-nantes.fr

Introduction: The herbal preparation STW 5 has been reported to increase intestinal chloride secretion. However, the ability of STW 5 to modulate paracellular and transcellular permeability remains currently unknown. Therefore, we aimed to determine the effects of STW 5 on intestinal leakage in mice submitted to psychological stress.

Materials & Methods: Male C57Bl/6 mice (n=12 per group) were allocated to the following groups: STW5 (200 mg/kg), control (C), sham operated control (SOC) and saline control (SC). After 1 week of adaptation, mice were submitted to psychological stress (PS) or control conditions for 45 minutes. Following 24 hours of re-adaptation, mice were killed and jejunal samples were collected for measuring markers of paracellular (claudin-1) and transcellular (iNOS) permeability.

Results: STW 5 significantly reduced the leakage of fluorescein isothiocyanate (FITC) and diethylenetriaminepentaacetic acid (DTPA) in the jejunal samples of mice submitted to PS. However, the leakage of these markers was not different between the SOC and SC groups. Furthermore, STW 5 did not affect the leakage of DNP in the jejunal samples of mice submitted to PS.

Conclusion: STW 5 prevents changes in intestinal permeability induced by psychological stress in mice.

Disclosure of Interest: All authors have declared no conflicts of interest.
to study the ability of STW 5 to modulate intestinal permeability under basal and response to stress conditions.

Aims & Methods: C57 bl6 mice were gavaged for 14 days with STW 5 (5 mL/kg). After 10 days of treatment, mice were subjected to water avoidance stress (WAS) during 4 consecutive days. In vivo permeability to FITC – Sulfonic Acid (F4, 40 mg/kg in PBS), HRP, (4kDa), total transit time of colonic transit (fetal pellet output - FPO) were measured at Day 0 (D0), D10 and D14 of IB treatment. Ex vivo permeability to FSA and HRP was assessed on jejunum, ileum, proximal colon and distal colon at D14 using Ussing chambers. Caco-2 cell monolayers were treated with STW 5 and cells were assessed at D14.

Results: In vivo permeability to FSA and HRP as well as total transit time were not modified by STW 5 in basal and WAS conditions. However, STW5 prevented the increase in permeability to FSA induced by WAS in the distal colon only. Conversely, STW 5 prevented the increase in permeability to HRP induced by WAS in the jejunum and proximal colon. Furthermore, while STW 5 tended to increase colonic transit as compared to control in basal conditions, it prevented the increase in transit induced by WAS. Finally, STW 5 did not modulate corticosterone induced by WAS.

Conclusion: Our study suggest that STW 5 can prevent WAS induced changes in paracellular and transcellular permeability in specific regions of the gastrointestinal tract. Such effects could contribute to the therapeutic effects of STW 5 in irritable bowel syndrome and support novel therapeutic indications for pathologies in which barrier functions are altered.

Disclosure of Interest: O. Kelber: Olaf Kelber is employed by Bayer H. Abdel-Aziz: Heba Abdel aziz is employed by Bayer M. Neunlist: This work was supported by a research grant to MN by Bayer All other authors have declared no conflicts of interest.

P1129 ALTERING SPHINGOSINE-1-PHOSPHATE WITH AGING INDUCES MOTILITY DYSFUNCTION OF COLON SMOOTH MUSCLE BY BKCA UPRREGULATION IN RATS

S. Xiaoanxue The First Affiliated Hospital Of Nanjing Medical University, Nanjing Medical University, Nanjing/China

Contact E-mail Address: shenxiaoxue0066@163.com

Introduction: Large conductance Ca2+-activated K+ channel (BKca channel) was shown to play critical roles in regulating smooth muscle contractility by modulating membrane potential, at the same time, age-associated changes in BKca expression may contribute to the development of motility disorders of the gastrointestinal tract. Sphingosine-1-Phosphate (SIP), component of Sphingolipid, is a cell membrane phospholipid, may affect BKca expression. Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (Csm) in rats.

Aims & Methods: Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (Csm) in rats. Forty Sprague-Dawley rats at the same age were randomly divided into five groups. After different times of administration, finally they were divided into different-age group: 10-week group, 20-week group, 40-week group, 60-week group and 80-week group. Colonic motility function and contractility of circular muscle strips were measured. The expression of BKca and phosphorylated myosin light chain (P-MLC) level were tested in colon tissues of rats with varying ages by immunohistochemical, RT-PCR and western blot. SIP levels in colon tissues were tested by LC-MS/MS analysis. Primary cultured colon smooth muscle cells (SMCs) from normal adult rats were used in complementary in vitro studies. In the absence and presence of SIP with different concentrations, the expression of BKca, P-MLC level, single-channel activity, intracellular Ca2+ mobilization were tested. At the same time, in the presence and absence of SIP, SMCs were transfected with anti-SIP antibody. BKca siRNA transfection was used to investigate whether P-MLC expression and intracellular Ca2+ mobilization were affected by BKca expression in SMCs. The expression and phosphorylation of Akt, JNK, ERK, NFKB, and PKC was examined by western blot analysis to investigate the effect between SIP and BKca.

Results: Aged rats showed prolonged colonic transit time and weakness of circular muscle contraction compared with the young (10 weeks old) SD rats. LC-MS/MS analysis exhibited that the levels of SIP were significantly greater in the CSM from aged rats, demonstrating that S1P varies depending on age. BKca (α-subunit and β-subunit) levels in CSM were shown to increase in an age-dependent manner from 10- to 80-week-old rats by mRNA and protein and immunohistochemical, but P-MLC expression decreased. In colon SMCs by BKca siRNA transfection, we found P-MLC levels increased. Exogenously added SIP upregulated BKca in colon SMCs in a concentration-dependent manner and intracellular Ca2+ mobilization though inhibiting Ca2+ influx and induced the decline of P-MLC. Our results also proved that SIP upregulated BKca through the Akt/ERK/JNK pathways. The expression of BKca decreased by treatment with inhibitor of Akt/ERK/JNK pathways or siRNA.

Conclusion: The results of our study show that altered SIP due to aging upregulates BKca via the Akt/ERK/JNK mediated pathway in CSM. BKca upregulation inhibits Ca2+ influx and MLC phosphorylation and thereby reduces the contractile response, which may be characterized by the assembly of enteric neurons into ganglia and the formation of a highly organized pattern of neuronal connectivity. However, the mechanisms underlying these maturation processes are poorly understood.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1130 DIABETES-RELATED ALTERATIONS IN THE EXPRESSION OF THE INFLAMMATORY CYTOKINES, TUMOR NECROSIS FACTOR ALPHA AND INTERLEUKIN 6 IN THE MYERIC GAGNIA AND ITS MICROENVIRONMENT OF DIFFERENT INTESTINAL SEGMENTS

L. Chandrakumar, D. Mezei, B. P. Barta, Z. Szalai, N. Bödi, M. Bagyanszki

Department Of Physiology, Anatomy And Neuroscience, University of Szeged, Szeged/Hungary

Contact E-mail Address: lalitha.biochem87@gmail.com

Introduction: Growing amount of evidence has indicated that increase of the hyperglycaemia-induced oxidative stress and decreased effectiveness of the endogenous antioxidant protection play the major role in the initiation of diabetes-related neuronal damage. Using a streptozotocin-induced diabetic rat model we recently demonstrated that nitricyergic neuronal, which are key regulators of peristalsis, display different susceptibilities to diabetic damage and also to treatment in the different parts of the intestinal tract. On these results we suggested the importance of the molecular differences in the neuronal microenvironment in the pathogenesis of diabetic nitricergic neuropathy.

Aims & Methods: Aim to reveal the quantitative differences in the expression of the pro-inflammatory cytokines like tumor necrosis factor alpha (TNFa) and interleukin 6 (IL6) in the myentric ganglia and its microenvironment of the different intestinal segments, quantitative immunogold electron microscopy was used. Ten weeks after the onset of diabetes, segments from the duodenum, ileum and colon of streptozotocin-diabetic, streptozotocin-controlled diabetic, and control rats were processed for post-embedding immunohistochemistry.

Results: The density of TNFa- and IL6-labeling gold particles was strictly region-dependent, with increasing to the distal part of the gastrointestinal tract of diabetic rats, the number of TNFa gold particles was significantly increased in the duodenum, decreased in the colonic myenteric ganglia, while did not show any significant differences in the ileal ganglia. The number of IL6 gold particles was not affected by diabetes in the myentric ganglia of different gut regions. The diabetes-related alterations of TNFa- and IL6 expression were not protected by the immediate insulin replacement in any of the investigated intestinal segments. The differences in TNFa- and IL6 density were not significant in the capillary endothelium under different experimental conditions.

Conclusion: Based on these findings we presume that regionally alterations in the TNFα and IL6 expression are correlated with the diabetes-related region-specific nitricergic myenteric neuropathy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Method: Gene and protein expression of SEMA3A and its receptor NR1P1 in rectal and distal colonic tissue of young and adult rats was analyzed by qRT-PCR and Western blot respectively. The cellular distribution of SEMA3A and NR1P1 was performed at P7 and P36 in whole-mount distal colon tissue by double immunofluorescence for SEMA3A or NR1P1 with specific monoclonal antibodies (H-126, sc-527, and muscle cells (a-SMA)). The impact of SEMA3A on neural outgrowth was assessed in cultures of enteric neurons cocultured with SEMA3A-transfected COS-7 cells.

Results: A peak of mRNA expression for SEMA3A and NR1P1 was observed in distal colonic tissue at P7, corresponding to a stage of intense neural circuit remodeling. At the protein level, NR1P1 was also found to be predominantly expressed during the early postnatal period. Immunohistofluorescence of colon tissue indicated that SEMA3A immunoreactivity was not associated with any specific cellular profile, but was distributed in small clusters disseminated throughout the tissue, a pattern consistent for a secreted protein. NR1P1 was found in neurons, mainly associated with axonal processes, and was not detected in glial or muscle cells. Enteric neurons cultured in the presence of SEMA3A-expressing COS cells showed a strong reduction in axon length and complexity, while the ganglion size was unaffected.

Conclusion: This study shows the expression of SEMA3A and its receptor NR1P1 in the ENS during early postnatal period. By controlling axonal outgrowth, SEMA3A might be an important factor to restrict the axonal trajectories in the appropriate paths between ganglia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1132 A POPULATION-BASED STUDY ON BOWEL HABITS IN A PORTUGUESE COMMUNITY: PREVALENCE OF CONSTIPATION

1Gastroenterology, Centro Hospitalar Sao Joao, Porto Medical School, Porto/Portugal
2General Practice, USC Porto/Portugal
3General Practice, USC Casa dos Pescadores, Povoa de Varzim/Portugal
4General Practice, UCCH S. Miguel, Castelo Branco/Portugal
5USF A. Ribiero, Guimaraes/Portugal
6Centro Hospitalar Sao Joao, Porto Medical School, Porto/Portugal

Contact E-mail Address: marcoopcostas89@gmail.com

Introduction: Constipation is a chronic disorder with an estimated prevalence of 17% in Europe. Epidemiological studies on bowel habits in the Portuguese general population have not been previously done, as in many other western countries. The aim of this population-based study was to describe bowel habits and the prevalence of self-reported constipation in a Portuguese community.

Aims & Methods: We aimed to describe bowel habits and the prevalence of self-reported constipation in a Portuguese community. Methods: Cross-sectional study with convenience sampling between November 2015 and November 2016. The physician applied a questionnaire, to adult patients at primary health care consultation. The questionnaires were anonymous, and the only personal information the participants were required to give was their age and sex. The questionnaire contained objective questions on possible causes and constipation-associated conditions and medications (according to the criteria defined by the World Gastroenterology Organization), daily water and fiber intake, physical activity, bowel habits and Bristol stool scale (BSS). Descriptive statistics and uni and multivariate analysis were performed using IBM SPSS Statistics 22 with p < 0.05 deemed to be statistically significant.

Results: A total of 826 questionnaires were completed by individuals from 35 different municipalities (54% women; mean age 46 ±18 years). Concerning possible causes of constipation, 43% subjects had a history of constipation-associated condition and 36% were taking constipation-associated drugs. Regarding bowel habits, 35% subjects had <1 bowel movement per day and 2% had >1 bowel movement per week. Using BSS, 66% of the cases reported type III or type IV stool consistency. Among women, 19% reported a change in bowel movements according to the phase of the menstrual cycle. In total, 22% of subjects considered to be constipated, and 78% of these, compiled the Roma III criteria for functional constipation. Noteworthy, 6% of subjects with daily bowel movements and 38% of those with <1 weekly bowel movement considered to have constipation. Complaints of excessive straining, tenesmus, feeling of incomplete bowel movement per week. Using BSS, 66% of the cases reported type III or type IV stool consistency. At the protein level, NR1P1 was also found to be predominantly expressed during the early postnatal period. Immunohistofluorescence of colon tissue indicated that SEMA3A immunoreactivity was not associated with any specific cellular profile, but was distributed in small clusters disseminated throughout the tissue, a pattern consistent for a secreted protein. NR1P1 was found in neurons, mainly associated with axonal processes, and was not detected in glial or muscle cells. Enteric neurons cultured in the presence of SEMA3A-expressing COS cells showed a strong reduction in axon length and complexity, while the ganglion size was unaffected.

Conclusion: This study shows the expression of SEMA3A and its receptor NR1P1 in the ENS during early postnatal period. By controlling axonal outgrowth, SEMA3A might be an important factor to restrict the axonal trajectories in the appropriate paths between ganglia.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1133 DIAGNOSTIC DISCORDANCE BETWEEN TESTS OF EVACUATION: A PROSPECTIVE STUDY

D. Carter, E. Bardin, M. Beer-Gabel
1Sackler Faculty Of Medicine, Tel Aviv University, Tel Aviv/Israel
2Gastroenterology, Sheba Medical Center Dept. of Gastroenterology, Ramat Gan/Israel

Contact E-mail Address: dr.dancarter@gmail.com

Introduction: Objective means of evaluating of the defecatory process include anorectal manometry (ARM), balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic trans-pelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected evacuation dysfunction (ED), fecal incontinence (FI) and chronic pelvic pain (CPP). Test choice may influence subsequent patient management; however, there is only limited information regarding the agreement between HRM, DT-PUS and BET.

Aims & Methods: The aims of this study were to compare the diagnostic yield and agreement between different tests of evacuation and to define the relation between the diagnoses of evacuation dysfunction to objective evacuation failure. 63 consecutive patients (60 females, mean age 51yrs) were prospectively evaluated with HRM, BET and PUS. Inter test agreement for the diagnosis of anismus was assessed using the Kappa statistic. Correlation between anismus to evacuation failure (assessed by PUS) was also assessed.

Results: 36 patients were assessed for ED, 6 for CPP and 21 for FI. Anismus was diagnosed in 26 patients by HRM and 45 patients by DT-PUS. All cases of anismus diagnosed by HRM or DT-PUS had a positive BET. The Kappa agreement for the diagnosis of anismus between HRM and DT-PUS was poor (0.143 ±0.01). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectocoele >3.5cm). There was a moderate correlation between diagnosis of anismus on DT-PUS to failure to evacuate the rectum (r = 0.636). The correlation between rectal evacuation on DT-PUS to the diagnosis of anismus on manometry was weak (r = 0.296).

Conclusion: There is considerable disagreement between the results of various evacuation tests, and between the diagnoses of evacuation dysregulation to failure of rectal evacuation. Therefore, more than one test should be applied in order to evaluate the defecatory dysfunction.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1134 DIAGNOSTIC USE OF ENDOSCOPIC FULL-THICKNESS WALL RESECTION (EFTR) IN PATIENTS WITH SYMPTOMS OF CHRONIC INTESTINAL PSEUDO-OBSTRUCTION (CIP0)

P.V. Valli, D. Pohl, M. Friedl, R. Caduff, P. Bauerfeind
1University Hospital Zurich, Zurich/Switzerland
2Institute Of Surgical Pathology And Molecular Pathology, University Hospital Zurich, Zurich/Switzerland

Contact E-mail Address: piero.valli@usz.ch

Introduction: Complex gastrointestinal motility disorders such as chronic intestinal pseudo-obstruction (CIP0) or Hirschsprung’s disease (HD) are challenging to diagnose and treat appropriately. Thorough assessment of patient history, radiographic exams, endoscopy and motility measurements aid in diagnosis and work-up, yet underlying histology is the cornerstone to enable a more distinct diagnosis of neuromuscular GI disorders. Traditionally, surgical procedures have been performed to obtain specimen suitable for accurate histologic analysis.

Aims & Methods: We performed endoscopic full-thickness resection (eFTR) using a full-thickness-resection device (FTRD) under moderate propofol sedation in four patients with suspected severe neuromuscular gut disorders including CIP0.

Results: Patient 1: A 21-year-old male patient with cerebral palsy suffering from acute small bowel ileus with a history of laparotomy, detorquation and appendectomy after colic volvulus at the age of 15. Histologic analysis revealed irregular configuration of the myenteric plexus, but primary neuro- or myopathic dysmotility, such as HD were excluded. GI dysmotility due to cerebral palsy syndrome was suspected. Patient 2: After a life-long history of recurrent obstipation, colonic dilatation, ileus symptoms and various colonic segment resections, diagnostic eFTR was performed in a 55-year-old female patient. The diagnosis of hypoganglionosis was excluded by LDH histochemical and by immunohistochemical reactions with Calretinin and Map-2 Kinase. Patient 3: A 19-year-old male patient with a history of a sigmoid volvulus and massively dilated large bowel segments. Enzyme histochemistry excluded HD upon histopathological analysis. The inner muscle layer showed fibrosis, eosinophilic leiomysitis and lymphocytic ganglionitis. Congenital CIP0 was diagnosed due to degenerative leiomysopathy. Patient 4: A 56-year-old male patient with acute ileus and a year-long history of constipation and abdominal pain. Histopathological analysis
revealed hypoganglionosis, severe fibrosis of the inner muscle layer and reduced ICC networks. Histological analysis for the diagnosis of hypoganglionosis was compared between the resected specimen and normal colon. There was hypoganglionosis in all 5 patients. Technical success in all 5 patients was achieved with mean (range) of 21 mm (20–22 mm) of resection. In all 5 patients, there were no adverse events connected to the procedure itself. The mean procedure time was 12 minutes (10–16 minutes) and the mean diameter of the resected specimen was 21 mm. Outcomes were assessed using the validated PAC-SYM and PAC-QOL questionnaires. All 5 patients completed the stimulation period. There were no adverse events or complications related to interferential electrical stimulation. The mean procedure time was 12 minutes (range 5–20 minutes). The mean diameter of the resected specimen was 21 mm (range 20–22 mm). No adverse events were reported during the follow-up period.

Disclosure of Interest: The authors have declared no conflicts of interest.

P1136 YH12852, A NOVEL AND HIGHLY SELECTIVE 5-HT4 RECEPTORAGONIST, INCREASES STOOL FREQUENCY IN HEALTHY VOLUNTEERS

J. Moore, P.R. Gibbons, R. Eggerli
Gastroenterology, Monash University, Melbourne/Australia/VIC

Contact E-mail Address: judith.moore@monash.edu

Introduction: There is emerging interest in non-pharmacological management of gastrointestinal dysmotility via neuromodulatory techniques. A new method of non-invasive neuromodulation - transabdominal interferential electrical stimulation - has apparent efficacy in a paediatric population with difficult constipation.

Aims & Methods: We report our experience of its use in adult patients with functional constipation who are refractory to conventional management. This is a descriptive case series of consecutive adult patients presenting to a tertiary referral functional gastrointestinal disorders clinic with refractory constipation that were taught and used home-based interferential stimulation for at least 4 weeks. All patients completed a functional gut nurse audit after three-months stimulation. A functional gut nurse specialist between October 2015 and Feb 2017. The validated PAC-SYM and PAC-QOL questionnaires were given at commencement of stimulation and after three months of follow up. The mean age was 47 (26–73) years and 2 were male. All 7 patients completed the stimulation period. There was a reduction in PAC-SYM in all patients (median IQR 24 [18–36] to 14 [10–21]) and PAC-QOL median IQR 8 [7–9] vs 4 [2–5] (p = 0.004). PAC-QOL was assessed in 4 patients and fell from 75 [69–85] to 38 [19–52]. Four were able to cease previously heavy daily laxative use and 2 were able to halve their use, one currently weaning off prucalopride. One remained on daily laxative use despite soft, formed stool. One reported satisfaction with stool type. All noted benefit remained in 2 after 4 and 12 months since ceasing its use, where the rest tended to use the stimulator intermittently.

Disclosure of Interest: Interpersonal electrical stimulation improved symptoms in patients with functional constipation. Randomized placebo controlled trials are justified.

Reference

P1137 HEALTHCARE PROFESSIONALS FAIL TO PROVIDE ADEQUATE SUPPORT ABOUT OPIOID-INDUCED CONSTIPATION TO STRONG-OPIOID USERS

V. Andrensen1, V. Banerji2, G. Hall1, A. Lass3, A. V. Emmanuel4
1Gastroenterology, Intracranial Hospital, Hamburg/Germany
2InsightDjo, London/United Kingdom
3Medical, Shimogmi Limited, London/United Kingdom
4Neurogastroenterology, National Hospital for Neurology and Neurosurgery, London/United Kingdom

Contact E-mail Address: V.Andrensen@iki.dhe

Introduction: Constipation is a common side effect of opioid use. Available laxative therapies for opioid-induced constipation (OIC) leave the patient with significant residual symptoms, which may lead them to adjust or stop their opioid intake in order to have a bowel movement, unless effectively counselled.

Aims & Methods: This subgroup analysis of an international survey investigated counselling resources, information-seeking, and sources of support in subjects with constipation caused by the use of strong opioids (e.g. buprenorphine, fentanyl). This was a quantitative, questionnaire-based, online survey conducted in France, Germany, Italy, Spain and the UK among respondents aged ≥40 years with largely non-cancer-related chronic pain, treated long-term with strong opioids and having constipation (N = 2016). The survey assessed past medical history of opioid use, treatment with specific opioids, symptoms, burden of disease, and effects on quality of life of constipation.

Results: In general, responders find it difficult to combine pain management relief and constipation and dislike having to balance them (36%). Approximately one-fifth (22%) of respondents were very or somewhat dissatisfied with the effectiveness of their current constipation treatment and only 43% strictly adhered to prescribed treatment regimens, with 32% researching other treatment options. A significant number of responders (44%) admitted that their constipation becomes so bothersome that they have to combine different methods to relieve it, and 40% often cut down their opioid medication or even skip it entirely (9%) to relieve constipation. To manage their constipation, respondents regularly used a variety of approaches, including dietary measures (48%), exercise (23%) and single (32%) or multiple (15%) laxative treatments. Only 45% of responders reported that their healthcare professionals (HCPs) had warned them about constipation as a potential side effect of opioid use. Approximately two-thirds (63%) of responders believed that the health care team is not doing enough to inform patients about the potential for opioid-induced constipation. Without this information, patients might be less likely to take necessary steps to alleviate their symptoms. In general, patients felt that their healthcare professionals (HCPs) had not provided enough information about opioid-induced constipation and its management. Patients also reported feeling left to their own devices to manage their symptoms and that they had received little or no support from their healthcare providers.

Conclusion: A large number of patients are not satisfied with their current constipation treatment and they sometimes find balancing the need for adequate pain relief with constipation side effects challenging; consequently, many fail to adhere to their prescribed treatment regimens, or resort to using suboptimal strategies, such as reducing their opioid intake, to relieve constipation. Despite this dissatisfaction, many HCPs are not counselling patients adequately about constipation as a common potential side effect of opioid use. While most patients would like to have more support from their HCP, nearly half prefer to deal with constipation on their own, perhaps due to embarrassment or resignation.

Disclosure of Interest: A. Lass: Contractor to Shinogi Ltd.

All other authors have declared no conflicts of interest.

Reference

P1135 TRANS-ABDOMINAL INTERFERENCE ELECTRICAL STIMULATION IS EFFECTIVE IN MANAGING REFRACTORY LOWER GASTROINTESTINAL DYSMOTILITY DISORDERS

J. Moore, P.R. Gibbons, R. Eggerli
Gastroenterology, Monash University, Melbourne/Australia/VIC

Contact E-mail Address: judith.moore@monash.edu

Introduction: Lower gastrointestinal motility disorders are frequent and have a significant impact on the quality of life of patients. Non-pharmacological therapies for these disorders include biofeedback, pelvic floor muscle training and biofeedback combined with physiotherapy. However, a significant number of patients are refractory to these therapies. Interferential electrical stimulation improved symptoms in patients with refractory constipation. Randomized placebo controlled trials are justified.

Aims & Methods: This is a descriptive case series of consecutive adult patients presenting to a tertiary referral functional gastrointestinal disorders clinic with refractory constipation that were taught and used home-based interferential stimulation for at least 4 weeks. All patients completed the stimulation period. The validated PAC-SYM and PAC-QOL questionnaires were given at commencement of stimulation and after three months of follow up. The mean age was 47 (26–73) years and 2 were male. All 7 patients completed the stimulation period. There was a reduction in PAC-SYM in all patients (median IQR 24 [18–36] to 14 [10–21]) and PAC-QOL median IQR 8 [7–9] vs 4 [2–5] (p < 0.004). PAC-QOL was assessed in 4 patients and fell from 75 [69–85] to 38 [19–52]. Four were able to cease previously heavy daily laxative use and 2 were able to halve their use, one currently weaning off prucalopride. One remained on daily laxative use despite soft, formed stool. One reported satisfaction with stool type. All noted benefit remained in 2 after 4 and 12 months since ceasing its use, where the rest tended to use the stimulator intermittently.

Disclosure of Interest: Interpersonal electrical stimulation improved symptoms in patients with functional constipation. Randomized placebo controlled trials are justified.

Reference
P1138 THREE-DIMENSIONAL HIGH-RESOLUTION ANORECTAL MANOMETRY IN CHILDREN AFTER SURGERY FOR ANORECTAL DISORDERS
M. Banasik1, A. Banaszkiwel2, M. Dziekiewicz2, A. Kamiński2, P. Albrecht1
1Dept. Of Pediatric Gastroenterology, Medical University of Warsaw, Warsaw/Poland
2Dept. Of Pediatric Surgery, Medical University of Warsaw, Warsaw/Poland
Contact E-mail Address: mbanasuk@tlen.pl

Introduction: Three-dimensional high-resolution anorectal manometry (3DHRA) is the most precise tool to assess function of the anal canal and may be useful in evaluation of children after surgery on lower gastrointestinal tract that may present wide spectrum of symptoms from gastointestinal tract. Our aim was to evaluate children after surgery for ano-rectal disorders using 3DHRA.

Aims & Methods: We performed a prospective study of 43 children (30 male, mean age: 7 years) after surgery for ano-rectal disorders at the Departments of Pediatric Gastroenterology, Surgery and Psychiatry, Medical University of Warsaw, Poland. The group consisted of 24 children after surgery for Hirschsprung’s disease (HD), 12 children after surgery for anal atresia (AA) and 7 children after proctocelectomy for other reasons (PC). In all children conventional manometry was performed. Pressures of the anal canal was divided into 8 segments and the resting and squeezing pressures of puborectalis muscle (PRM) were recorded in segments covering its anatomical localization. These data were compared to raw data obtained in our laboratory from healthy children published previously (HC group). To assess correlation between manometry and symptoms, all children (after surgery and HC group) were divided into groups with respect to symptoms, as follows: asymptomatic (A), nonretentive fecal incontinence (NRFI), retentive fecal incontinence (RFI).

Results: The lowest values of resting, squeeze and the pressure of PRM were observed in AA (55.6 mmHg, 121.7 mmHg and 44.17 mmHg, respectively). As compared to asymptomatic children, the lowest mean and maximum resting pressures were observed in NRFI (69.6 mmHg and 61.3 mmHg, respectively; p < 0.000). Significantly lower maximum squeeze pressure was recorded in both, NRFI and RFI (168.1 mmHg and 103.8 mmHg, respectively; p = 0.03). ROC cut-off value for mean resting pressure between asymptomatic children and children with fecal incontinence was 64.5 mmHg. Significantly lower PRM resting pressure were observed in NRFI group and lower PRM squeeze pressure in RFI (45.6 mmHg and 63.6 mmHg, respectively). Threshold of urge were significantly higher in group C as compared to A group (87.5 mmHg and 30 cm3, respectively; p = 0.003).

Conclusion: Our study demonstrated lower pressure parameters in children after surgery with the lowest values in patients suffering from anal atresia, which was correlated with incontinence. 3DHRA may be useful tool for assessing the functional outcomes of the anorectum after surgery.

Disclosure of Interest: M. Banasik: Equipment support from manufacturer of the equipment (Covidiem AG)

All other authors have declared no conflicts of interest.

P1139 UK CLINICAL EXPERIENCE AT 52 WEEKS WITH LINACLOTIDE FOR IRRITABLE BOWEL SYNDROME WITH CONSTITUTION
A. V. Emmanuel1, J. McLaughlin1, Y. Yiaanouk2, S. McLain-Smith4
1University College London, London/United Kingdom
2Salford Royal, Salford/United Kingdom
3NHS Foundation Trust, County Durham and Darlington, Durham/United Kingdom
4pH Associates Ltd, Marlow/United Kingdom
Contact E-mail Address: a.emmanuel@ucu.ac.uk

Introduction: Linacotide, a guanylate cyclase C agonist, has been shown in clinical trials to relieve constipation and improve abdominal pain and discomfort in patients with irritable bowel syndrome with constipation (IBS-C), but there are limited UK-specific real-world data to support this.

Aim & Methods: A multi-centre, observational prospective 52-week study was conducted in eight specialist hospitals in England and Scotland. The primary objective was to describe the change in IBS-Symptom Severity Scale (IBS-SSS) score from baseline at 12 weeks after linaclotide initiation. Consenting patients aged ≥2 years and with fecal incontinence were included. Pressures of the anal canal was divided into 8 segments and the resting and squeezing pressures of puborectalis muscle (PRM) were recorded in segments covering its anatomical localization. These data were compared to raw data obtained in our laboratory from healthy children published previously (HC group). To assess correlation between manometry and symptoms, all children (after surgery and HC group) were divided into groups with respect to symptoms, as follows: asymptomatic (A), nonretentive fecal incontinence (NRFI) and retentive fecal incontinence (RFI).

Results: The lowest values of resting, squeeze and the pressure of PRM were observed in AA (55.6 mmHg, 121.7 mmHg and 44.17 mmHg, respectively). As compared to asymptomatic children, the lowest mean and maximum resting pressures were observed in NRFI (69.6 mmHg and 61.3 mmHg, respectively; p < 0.000). Significantly lower maximum squeeze pressure was recorded in both, NRFI and RFI (168.1 mmHg and 103.8 mmHg, respectively; p = 0.03). ROC cut-off value for mean resting pressure between asymptomatic children and children with fecal incontinence was 64.5 mmHg. Significantly lower PRM resting pressure were observed in NRFI group and lower PRM squeeze pressure in RFI (45.6 mmHg and 63.6 mmHg, respectively). Threshold of urge were significantly higher in group C as compared to A group (87.5 mmHg and 30 cm3, respectively; p = 0.003).

Conclusion: Linacotide was associated with a significant improvement in IBS-SSS score at 52 weeks and was reasonably well tolerated. These results provide valuable insights into the longer-term outcomes of linaclotide treatment in patients with IBS-C in real-world clinical practice.

Disclosure of Interest: A.V. Emmanuel: Served on advisory boards for Allergan, Almirall, Shire, Takeda
Y. Yiaanouk: Educational grant and speaker fees from allergan
S. McLain-Smith: SMS is an employee of pH Associates, an independent research consultancy which was commissioned by the sponsor to provide support with the design and conduct of the study, data analysis and medical writing
All other authors have declared no conflicts of interest.

P1140 EFFECT OF FAECAL MICROBIOTA TRANSPLANTATION ON GUT BACTERIAL FERMENTATION PRODUCTS IN PATIENTS WITH IRritable BOWEL SYNDROME
T. Mazzawi1, J. Valeur2, T. Hausken3, M. El-Salhy4, J.G. Hatlebakk3, G.A. Lied3
1Gastroenterology-medicine, Haukeland University Hospital, Bergen/Norway
2Unge-Veien Institute, Lovisenberg Diagocinal Hospital, Oslo/Norway
3Haukeland University Hospital, National Centre for Functional Gastrointestinal Disorders, Bergen/Norway
4Gastroenterology-medicine, Stord Hospital Hele-Fonna, Stord/Norway
5Center For Nutrition, Clinical Medicine, University of Bergen, Bergen/Norway
Contact E-mail Address: tarek.mazzawi@med.uib.no

Introduction: Irritable bowel syndrome (IBS) may be associated with disturbances of gut microbiota composition and functions, such as altered bacterial fermentation.

Aims & Methods: The aim was to study the effect of faecal microbiota transplantation (FMT) on gut bacterial fermentation products: short-chain fatty acids (SCFAs). Patients diagnosed with IBS according to Rome III criteria (n = 13) were included. They received freshly donated faeces from relatives, instilled into the descending part of the duodenum via gastroscope. Faecal samples were collected from the donors and the patients before FMT and from the patients after FMT at weeks 1, 3, 12 and 20/28. All the samples were stored at −80°C until analysis. Faecal concentrations of major SCFAs (acetic, propionic and n-butyric acids) and minor SCFAs (iso-butyric, n-valeric, iso-valeric, n-caproic and iso-caprylic acids) were analysed by vacuum distillation followed by gas chromatography. The patients completed IBS symptom questionnaire (IBS-SQ) before and after FMT at weeks 1, 3, 12, and 20/28, assessing the following domains: nausea, bloating, abdominal pain, diarrhea, constipation and anorexia.

Results: Before FMT, concentrations of several SCFAs were significantly lower in IBS patients compared to donors (Table 1). After FMT, concentrations of SCFAs increased within the first 3 weeks, and the increment lasted up to 28 weeks (Table 1).

Table: Change in IBS-SSS score at 52 weeks from start of linaclotide

<table>
<thead>
<tr>
<th>Patient</th>
<th>IBS-SSS Score at Baseline</th>
<th>IBS-SSS Score at 52 Weeks</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>150</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>200</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>250</td>
<td>75</td>
<td>175</td>
</tr>
<tr>
<td>4</td>
<td>300</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>5</td>
<td>350</td>
<td>200</td>
<td>150</td>
</tr>
</tbody>
</table>

Conclusion: Faecal microbiota transplantation is a promising treatment for patients with IBS-C in real-world clinical practice.
**Table 1:** Concentrations (mmol/kg) of short-chain fatty acids (SCFAs) in faecal samples collected from donors and patients with irritable bowel syndrome (IBS) before and after faecal microbiota transplantation (FMT).

<table>
<thead>
<tr>
<th>SCFAs</th>
<th>Donor, (n = 13)</th>
<th>Patients before FMT, (n = 9)</th>
<th>Week 1, (n = 12)</th>
<th>Week 3, (n = 10)</th>
<th>Week 12, (n = 13)</th>
<th>Week 20/28, (n = 12)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>33.9 ± 2.8</td>
<td>23.6 ± 6.0</td>
<td>31.1 ± 4.9</td>
<td>35.5 ± 3.9</td>
<td>25.8 ± 4.4</td>
<td>28.5 ± 2.4</td>
<td>0.77</td>
</tr>
<tr>
<td>Propionic acid</td>
<td>9.5 ± 1</td>
<td>6.2 ± 1.6</td>
<td>7.9 ± 1.5</td>
<td>8.2 ± 1.5</td>
<td>7.3 ± 1.9</td>
<td>8.1 ± 1.2</td>
<td>0.18</td>
</tr>
<tr>
<td>n-butyric acid</td>
<td>10.4 ± 1.6</td>
<td>4.7 ± 1.2</td>
<td>7.7 ± 1.8</td>
<td>8.4 ± 1.5</td>
<td>5.8 ± 1.4</td>
<td>5.96 ± 1.11</td>
<td>0.049</td>
</tr>
<tr>
<td>Iso-butyric acid</td>
<td>1.27 ± 0.17</td>
<td>0.67 ± 0.11</td>
<td>0.77 ± 0.12</td>
<td>0.92 ± 0.13</td>
<td>0.7 ± 0.12</td>
<td>0.98 ± 0.2</td>
<td>0.03</td>
</tr>
<tr>
<td>n-valeric acid</td>
<td>1.4 ± 0.18</td>
<td>0.68 ± 0.00</td>
<td>1.05 ± 0.2</td>
<td>1.06 ± 0.15</td>
<td>0.77 ± 0.13</td>
<td>0.93 ± 0.093</td>
<td>0.013</td>
</tr>
<tr>
<td>Iso-valeric acid</td>
<td>1.6 ± 0.2</td>
<td>0.8 ± 0.2</td>
<td>0.9 ± 0.15</td>
<td>1.16 ± 0.2</td>
<td>0.8 ± 0.14</td>
<td>1.27 ± 0.2</td>
<td>0.014</td>
</tr>
<tr>
<td>n-caproic acid</td>
<td>0.8 ± 0.02</td>
<td>0.3 ± 0.1</td>
<td>0.5 ± 0.2</td>
<td>0.5 ± 0.1</td>
<td>0.2 ± 0.08</td>
<td>0.3 ± 0.09</td>
<td>0.6</td>
</tr>
<tr>
<td>iso-caproic acid</td>
<td>0.01 ± 0.003</td>
<td>0.02 ± 0.02</td>
<td>0.008 ± 0.006</td>
<td>0.013 ± 0.01</td>
<td>0.01 ± 0.005</td>
<td>0.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Total SCFAs</td>
<td>58.8 ± 5.4</td>
<td>37.6 ± 8.0</td>
<td>49.9 ± 8.0</td>
<td>55.7 ± 6.2</td>
<td>41.4 ± 7.1</td>
<td>46 ± 4.7</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Data are presented as mean ± SEM. Comparison: Kruskal-Wallis multiple comparisons test with Dunn’s post test. *Donors at the beginning of the study vs. patients on FMT day before faecal installation. **Donors at the beginning of the study vs. patients 1 week after FMT. ***Donors at the beginning of the study vs. patients 3 weeks after FMT. ****Donors at the beginning of the study vs. patients 12 weeks after FMT, *****Donors at the beginning of the study vs. patients 20/28 weeks after FMT. FMT: faecal microbiota transplantation. SCFAs: short-chain fatty acids.
PI1142 RANDOMISED PLACEBO CONTROLLED ESCITALOPRAM INTERVENTION IN PATIENTS WITH PANIC DISORDER: EVALUATION BY GSRS AND BY EXPERIENCE SAMPLING METHOD

L. Vork1, M. Drucker2, Z. Mughic3, D. Keszthesyl3, J. Van Otá2, A. A. Mascelle4, C. Leue,1 J. Krauel1
1Division Of Gastroenterology-hepatology, Department Of Internal Medicine, Maastricht University Medical Center+, Maastricht/Netherlands
2Department Of Psychiatry And Psychology, Maastricht University Medical Center+, Maastricht/Netherlands

Contact E-mail Address: l.vork@maastrichtuniversity.nl

Introduction: Selective Serotonin Reuptake Inhibitors (SSRIs)’s have shown efficacy in reducing symptoms but less so on pain in irritable bowel syndrome (IBS). Comorbid anxiety frequently occurs in IBS. We hypothesized that SSRIs will particularly be effective in reducing abdominal pain in IBS patients with pronounced comorbid anxiety. As methods for symptom evaluation were used 1) gastrointestinal symptom rating scale (GSRS) as primary parameter and 2) a new method called the Experience Sampling Method (ESM). With ESM diagnostic assessments are completed randomly and repeatedly during daily life, therewith capturing fluctuating symptom patterns more accurately than retrospective questionnaires methods.

Aims & Methods: IBS patients with comorbid panic disorder were included in a randomized controlled trial on escitalopram versus placebo. Measurements were completed at baseline (t=0) and after 3 (t=3) and 6 months (t=6). At each time point, the gastrointestinal symptom rating scale (GSRS) and a 7-day ESM period were completed. Subjects completed ESM assessments on a palmpilot computer at 10 random moments each day during 7 consecutive days. ESM periods were assessed when at least one of the assessments were completed. Mixed linear models were used with the GSRS scores as the primary end point and as associated with a reduction in extra-gastrointestinal symptoms. Change in pH across the ileocecal junction correlated with improvement in GSRS and ESM analyses, at t=6, average abdominal pain scores were significantly lower (B: 1.30, SE: 0.623, p = 0.670). For the ESM analyses, at t=6, average abdominal pain scores were significantly lower (B: 1.30, SE: 0.623, p = 0.037) on a 1–7 scale in the esctalopram group compared to placebo. With increasing anxiety levels (scores 2, 3 and 4) this difference further increased to 1.57, 1.84 and 2.11, respectively.

Conclusion: Using GSRS as primary outcome, no significant effect of escitalopram on placebo on abdominal pain was found over a 6-month period. However, using ESM, a significant improvement in abdominal pain was observed, related to anxiety scores. These data 1) challenge the value of traditional retrospective methods with end-of-period symptom recording and 2) are in favour of novel more accurate momentary symptom registrations such as the Experience Sampling Method.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI1143 LINACLIDOTE ACCELERATES COLONIC TRANSIT AND IMPROVES COLONIC CONTRACTILITY IN IBS WITH CONSTIPATION

A. D. Farmer1, A. R. Hobson1
1Gastroenterology, University Hospitals of North Midlands, Stoke on Trent/United Kingdom
2Functional Gut Clinic, London/United Kingdom

Contact E-mail Address: a.farmer@qmul.ac.uk

Introduction: Linclotide, a guanylate-cy clase-C agonist, stimulates intestinal fluid secretion and decreases visceral hypersensitivity and is licensed for use in irritable bowel syndrome with constipation (IBS-C). There is a relative paucity of data concerning its effect on gastrointestinal (GI) motility.

Aims & Methods: We aimed to compare the effect of linclotide on segmental and pan-enteric motility in IBS-C. 14 patients with Rome III defined IBS-C (male, mean age 37 years, range 20–64) underwent a wireless motility capsule (WMC) using a standardized protocol. Segmental transit was derived from measures around known anatomical landmarks as identified by compartmental pH changes. Ileal and colonic motility measures are presented as area under the curve (AUC) derived from contraction amplitude and frequency. Validated questionnaires assessing GI symptom-related quality of life (EQ-5D) were administered. The WMC and questionnaires were repeated after 28 days of linclotide 290mg po od.

Results: Changes in GI motility are shown in Table 1. Linclotide improved VDVAS-I and VDVAS-U (130.7±20.8 vs. 106.5±33, p=0.03 and 113±22 vs. 85.8±33, p=0.01) and quality of life (58.4±21.2 vs. 68±17.6, p=0.02). Linclotide reduced somatic symptoms (8.3±2.2 vs. 5.9±1.4, p=0.007).

Change in pH across the ileocecal junction correlated with improvement in VDVAS-U and t (r=0.6, p=0.03 and t=0.64, p=0.02).

Table 1: Changes in GI physiology following linclotide.

Baseline Post treatment
(mean and (mean and standard deviation) standard deviation) Value

Gastric emptying time (minutes) 154±64 177±57 0.4
Small bowel transit time (minutes) 353±152 299±139 0.3
Colonic transit time (minutess) 3017±1305 1983±1216 0.04
Whole gut transit time (minutes) 3517±1375 2432±1180 0.04
Ileal contractility (AUC) 262±142.2 221±113.5 0.5
Colonic contractility (AUC) 90.9±78.3 134.6±93 0.006
Change in pH across the ileocecal junction -2.4±0.2 -2.1±0.4 0.03

Linclotide improved VDVAS-I and VDVAS-U (130.7±20.8 vs. 106.5±33, p=0.03 and 113±22 vs. 85.8±17.6, p=0.02). Linclotide reduced somatic symptoms (8.3±2.2 vs. 5.9±1.4, p=0.007). Change in pH across the ileocecal junction correlated with improvement in VDVAS-U and t (r=0.6, p=0.03 and t=0.64, p=0.02).

Conclusion: Linclotide reduced colonic transit and enhances contractility. These changes in GI motility are accompanied by improvements in symptoms and quality of life (58.4±21.2 vs. 68±17.6, p=0.02). Change in pH across the ileocecal junction has been proposed as a surrogate marker of caecal fermentation. Thus the beneficial effect of linclotide on symptoms may therefore be related to a reduction in fermentation. This potential biomarker will be further investigated.

Disclosure of Interest: A.D. Farmer: Speaker Bureau - Allergan Advisory board-Allergen
All other authors have declared no conflicts of interest.

PI1144 RELATIONSHIP BETWEEN RIFAXIMIN THERAPY AND SEHCAT TEST IN PATIENTS WITH DIARRHEA-PREDOMINANT IRRETTIBLE BOWEL SYNDROME OR FUNCTIONAL DIARRHEA

Gastroenterology, Hospital Universitari de Bellvitge, Hospitalet de Llobregat/Spain

Contact E-mail Address: alexandraruizcerulla@gmail.com

Introduction: Bile acids (BAs) and gut microbiota have been involved in IBS pathophysiology. BA diarrhea (BAD) is often found in patients with irritable bowel syndrome (IBS-D) or functional diarrhea (FD). Rifaximin modifies SeHCAT result. This potential biomarker will be further investigated.

Aims & Methods: a) To determine if a SeHCAT test may be used to predict response to rifaximin or whether rifaximin treatment affects SeHCAT test result. b) To assess if rifaximin modifies SeHCAT result.

Consecutive patients diagnosed with IBS-D or FD were prospectively included in the study. All patients received rifaximin (400mg TID for 2w). A SeHCAT test was performed to evaluate presence of BAD before and 1 month after rifaximin treatment. BAD was defined as SeHCAT retention <10%. Number of daily stools, number of daily watery stools, Bristol stool scale, abdominal pain, tension and presence of urgency were recorded before and after treatment. IBS severity score (IBS-SS) was also calculated.

Results: Forty-one patients were included. BAD was present in 23 patients (56%). No clinical differences were found between BAD or non-BAD patients at study entry. Rifaximin resulted in a significant improvement in the number of daily stools (Δ −1.5; P< 0.01), daily watery stools (Δ −2.1; P < 0.01), Bristol scale (Δ −1.1; P < 0.01), abdominal pain (Δ −0.5; P < 0.01), distension (Δ −0.3; P < 0.01), urgency (Δ −0.7; P < 0.01) and in the IBS-SS (Δ −7.8; P < 0.01). No differences were found between BAD and non-BAD patients in the improvement of any item. Rifaximin treatment did not modify SeHCAT value (9.5% before treatment and 10.7% after treatment; P = 0.4).

Conclusion: Half of the patients diagnosed with IBS-D or FD present BAD according the SeHCAT test. Rifaximin treatment confers significant clinical improvement irrespective of the presence of BAD. Rifaximin treatment does not affect SeHCAT test.

Disclosure of Interest: All authors have declared no conflicts of interest.


**Conclusion:** Responders initially also did (which was associated with IBS-SSS improvement), symptoms on daily life (p ¼ 0.039), satisfaction about bowel habit (p ¼ 0.018), and influence of IBS symptoms?'' (Yes/No) on a weekly basis, via an electronic diary. As previously described, patients answering “Yes” for ≥50% of the total weeks during the target time interval were considered AR responders.2,3 Patients answering “No” were considered to have IR. This analysis evaluated the number of consecutive weeks that patients reported IR over Weeks 1–12 and 13–24 of treatment. Patients without analysis were ineligible for intention-to-treat (ITT) analysis; missing data were not imputed.

**Results:** Overall, 2428 patients with IBS-D were enrolled across the two Phase 3 trials and 2423 were included in the ITT analysis. In the pooled dataset, a significantly greater proportion of patients were AR responders2 with either ELX 100 or 75 mg BID vs PBO at 12 weeks (56.1% [p < 0.001] and 56.3% [p < 0.001] vs 41.8%, respectively). Over the first 12 weeks of treatment, a greater proportion of patients reported no IBS-D symptoms with ELX 100 or 75 mg BID vs PBO (Table). Greater proportions of patients reported only 1–<5 consecutive weeks of IR with ELX 100 or 75 mg BID vs PBO. A significantly lower proportion of patients reported IR for >8 consecutive weeks with ELX 100 or 75 mg BID vs PBO (13.2% [p < 0.0001] and 15.6% [p < 0.004] vs 22.6%, respectively). In contrast, a greater proportion of patients reported IR for the full 12 consecutive weeks with PBO vs ELX 100 or 75 mg BID (Table). Similar results were observed in Weeks 13–24 of treatment, with ELX-treated patients generally having fewer consecutive weeks of IR compared to PBO-treated patients (Table).

**Table:** Consecutive weeks of inadequate relief

<table>
<thead>
<tr>
<th>Weeks 1–12</th>
<th>Weeks 13–24</th>
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<tbody>
<tr>
<td>ELX 100 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
<tr>
<td>ELX 75 mg BID</td>
<td>ELX 75 mg BID</td>
</tr>
<tr>
<td>PBO (n = 809)</td>
<td>PBO (n = 808)</td>
</tr>
<tr>
<td>ELX (n = 808)</td>
<td>ELX (n = 806)</td>
</tr>
</tbody>
</table>

**Conclusion:** In this post hoc analysis of the pooled ELX Phase 3 studies, ELX-treated patients experienced fewer consecutive weeks of IR compared to those receiving PBO, within both Weeks 1–12 and 13–24 of treatment. As IR is thought to drive increased healthcare provider visits, these data suggest that ELX could potentially reduce healthcare resource use and subsequent healthcare costs associated with IBS. Further prospective study of the impact of ELX on AR and any subsequent reduction in healthcare costs is required, including the relationship between the number of consecutive weeks of IR and patients’ behaviour towards healthcare resource use.

**Disclosure of Interest:** D. Collomb: David Collomb is an employee of Allergan plc. A. Marciniak: Anne Marciniak is an employee of Allergan plc and shareholder in Pfizer, Amgen, and Allergan plc. Y. Mo: Yilan Mo is an employee of Allergan plc. D.A. Andrae: David A. Andrae is an employee of Allergan plc and shareholder in Allergan plc. G. Wiseman: Gwen Wiseman is an employee of Allergan plc.

**References:**
3. Covington PS. Poster 55 presented at ACCP Global Conference on Clinical Pharmacy, USA, 2015

**Disclosure of Interest:** A. E. Budding: A.E. Budding has proprietary rights to the IS-pro technique, and is co-owner of the spin-off company IS-diagnostics. All other authors have declared no conflicts of interest.


**Table 1:** Changes in segmental/whole gut transit times and ileal/colonic motility, relative to baseline between the low FODMAP and m-NICE diets. Both the low FODMAP and NICE diets improved VDVAS-I and VDVAS-U (−18 ± 17 vs. −20 ± 17, p = 0.04 and −13 ± 8 vs. −16 ± 8, p = 0.02, respectively). Similarly, both diets reduced somatic symptoms (−2 ± 1.4 vs. −0.8 ± 1.1, p = 0.07) and improved quality of life (9.5 ± 10.2 vs. 4.4 ± 9.8, p = 0.23).

**Introduction:** Diets reducing the content of fermentable short chain carbohydrates (fermentable oligo-, di-, mono-saccharides, and polyols (FODMAPs)) as well as the National Institute of Health Care Excellence (NICE) diet have been reported to be effective in the treatment of patients with irritable bowel syndrome (IBS) (1,2). The mechanisms by which this efficacy is achieved are incompletely understood but it has been proposed that such diets reduce fermentation, mediated by changes in the microbiota (3). Change in pH around the ileo-caecal junction is considered to be a surrogate biomarker of caecal fermentation (4,5).

**Aims & Methods:** We aimed to compare the effect of a low FODMAP diet vs. the NICE diet on change in ileocaecal pH. We performed a single centre, randomized controlled trial of adult patients with Rome III defined IBS-mixed bowel habit (IBS-M) comparing the two dietary interventions. At baseline, patients ingested a wireless motility capsule (WMC) using a standardized protocol. Segmental transit times were derived from measures across known anatomical landmarks as identified by compartmental pH changes. Ileal and colonic motility measures are presented as area under the curve (AUC) derived from contraction amplitude and frequency. Validated questionnaires evaluating GI (verbal descriptor pain; VDVAS; 0–10 scale, with 0 = no pain and 10 = worst imaginable pain), stool consistency (Bristol Stool Form Scale [BSFS]), and Global Symptom Score (GSS; 0–4 scale, where 0 = no symptoms and 4 = very severe symptoms). A responder was defined as a patient with a simultaneous daily improvement of ≥30% in WAP score vs baseline and BSFS score < 5 with ≥50% of days demonstrating a response and a minimum of 20 days of diary data. The intention-to-treat (ITT) analysis set included all randomized patients who had any WMC data. For patients meeting Rome III criteria for IBS-M, including in patients with severe and inadequately managed symptoms.

**Results:** Of the 2423 patients in the pooled Phase 3 ITT population, 249 were classified as having severe IBS-D. Over Weeks 1–4, 26.8% and 30.3% of patients were responders with eluxadoline 75 and 100 mg, respectively, vs 8.1% of patients on placebo (Table). Higher proportions of patients were responders with eluxadoline vs placebo over each subsequent 4-week period, with response rates observed at Weeks 1–4 consistently maintained across all subsequent 4-week time intervals. With both eluxadoline and placebo, proportions of responders discontinuing were <2% across each 4-week interval, and discontinuation rates in non-responders were higher than in responders (Table). Similar findings were observed in the ITT analysis set: over Weeks 1–4, 22.7% vs 8.1% of patients on placebo (Table). Higher proportions of patients were classified as having severe IBS-D. Over Weeks 1–4, 26.8% and 30.3% of patients were responders with eluxadoline 75 and 100 mg, respectively, vs 12.5% of patients on placebo (Table). Higher proportions of patients were responders with eluxadoline vs placebo over each subsequent 4-week period, with response rates observed at Weeks 1–4 consistently maintained across all subsequent 4-week time intervals. With both eluxadoline and placebo, proportions of responders discontinuing were <2% across each 4-week interval, and discontinuation rates in non-responders were higher than in responders (Table). Similar findings were observed in the ITT analysis set: over Weeks 1–4, 22.7% vs 8.1% of patients on placebo (Table). Higher proportions of patients were classified as having severe IBS-D.

**Conclusion:** Proportions of responders with eluxadoline 75 and 100 mg were consistently higher vs placebo across all 4-week intervals in the treatment period in patients defined as having severe IBS-D. Furthermore, discontinuation rates among patients showing a treatment response remained consistently low compared to non-responders. However, as these analyses were conducted in a clinical trial setting, the relatively high continuation rates in non-responders may not reflect the real-world situation. These findings suggest that eluxadoline has sustained efficacy in treating the diarrhoea and abdominal pain associated with IBS-D, including in patients with severe and inadequately managed symptoms.
associated with triggering gastrointestinal symptoms in irritable bowel syndrome (IBS).

**Aims & Methods:** This study aimed to assess whether oral α-galactosidase co-administration with high GOS foods provides a clinically significant reduction in symptoms in GOS-sensitive individuals. The study was conducted in a double-blind, placebo-controlled, crossover trial approved by the University Ethics Committee. Participants meeting the Rome III criteria for IBS who produced >10 ppm hydrogen on two consecutive breath samples following 10 g fructan were recruited. Participants were randomly assigned to full-dose enzyme (300 GALU α-galactosidase), half-dose (150 GALU α-galactosidase) and placebo (glucose). Following a 3-day low FODMAP run-in period, participants consumed provided diets high in GOS for a further 3 days. Gastrointestinal symptoms were measured daily using a 100 mm visual-analogue scale. Breath samples were taken hourly on the second last and analysed as area-under-the-curve, faecal samples were taken on the final day.

**Results:** Thirty-one participants with IBS (20 IBS-D, 4 IBS-C, 7 IBS-M) completed the study. The addition of high GOS foods resulted in a significant increase in overall symptoms (median 13.0 [IQR 1.5–22.0] to 35.5 [12.8–54.0] mm; p = 0.000, Wilcoxon signed-rank test). No significant increase in overall symptoms was seen with the full-dose enzyme (14.0 [3.5–24.0] vs 14.7 [2.3–32.7] mm; p = 0.422). Twenty-one participants exhibited GOS-sensitivity (>10 mm increase for overall symptoms). Of those, full-dose enzyme reduced overall symp-

<table>
<thead>
<tr>
<th>Summary test characteristic</th>
<th>Seated position</th>
<th>Left lateral position</th>
</tr>
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<tbody>
<tr>
<td><strong>Case-control and cohort studies (optimal estimates)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Sensitivity</td>
<td>69% (54% to 85%)</td>
<td>54% (7% to 100%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>81% (76% to 86%)</td>
<td>90% (79% to 100%)</td>
</tr>
<tr>
<td><strong>Only cohort studies evaluating unselected subjects with constipation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>69% (53% to 86%)</td>
<td>76% (70% to 83%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>54% (6% to 100%)</td>
<td>76% (51% to 100%)</td>
</tr>
</tbody>
</table>

**Conclusion:** The performance characteristics of balloon expulsion could support the use of BET as a novel bedside test to screen for dysmotility in constipated subjects.

**Disclosure of Interest:** W.D. Chey: Dr. Chey is a consultant for Ironwood Pharmaceuticals and Allergan. He is co-CMO of My Total Health and holds a patent on My GI Health. All other authors have declared no conflicts of interest.
**Aims & Methods:** The study was retrospective. The GMA group consisted of 21 patients with diagnosed food allergy. The control group (CG) included 17 patients with neither food allergy nor food intolerance. Tissue samples from esophagus, cardia (subdivided in esophageal and gastric region), corpus, antrum and duodenum already obtained during endoscopy were immunohistochemically stained for DAO. The expression of DAO was semi-quantitatively analysed with the following scale based on the staining intensity of DAO (SI-DAO): 0 = none, 1 = low, 2 = medium, 3 = high intensity. The localisation of DAO was also examined vertically from the epithelium to the submucosa in all tissues. The analysis was performed twice by the same examiner in two separate points of time. Furthermore, the tissue samples were immunohistochemically stained for MBP and CD117 in order to count the number of eosinophils and mast cells respectively. Two measurements were performed inside an area of tissue. The measurements performed twice by the same examiner in two separate points of time. Two measurements constituted the number of these cells for each tissue.

**Results:** Immunohistochemical analysis found DAO in all segments of the upper GIT of patients with or without GMA. DAO strengthens the theory that DAO acts extracellularly and is responsible for the elimination of the transepithelially absorbed exogenous histamine as well as for the endogenous histamine, as its highest staining intensity is found at the subepithelial superficial lamina propria (SLP) and one in the deeper lamina propria (DLP). The average of these two measurements constituted the number of these cells for each tissue.

**Results:** Immunohistochemical analysis found DAO in all segments of the upper GIT. The SI-DAO was vertically analysed from the epithelium to the submucosa in all tissues. The analysis was performed twice by the same examiner in two separate points of time. Furthermore, the tissue samples were immunohistochemically stained for MBP and CD117 in order to count the number of eosinophils and mast cells respectively. Two measurements were performed inside an area of tissue. The measurements performed twice by the same examiner in two separate points of time. Two measurements constituted the number of these cells for each tissue.

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**Table 1:** SI-DAO in the upper GIT. P1-Value: comparison between GMA and control group. P2-Value: comparison of the SI-DAO in duodenum with the other segments of the upper GIT in the GMA group. N = number of tissue samples.

<table>
<thead>
<tr>
<th>Group</th>
<th>Parameter</th>
<th>Cardia (esophageal region)</th>
<th>gastric Corpus</th>
<th>Antrum</th>
<th>Duodenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMA</td>
<td>N</td>
<td>10</td>
<td>8</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Group</td>
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<td>1.0</td>
</tr>
<tr>
<td></td>
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<tr>
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<td>1.3</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Control</td>
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<td>9</td>
<td>8</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Group</td>
<td>Median</td>
<td>1.3</td>
<td>1.2</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>25th Percentile</td>
<td>1.1</td>
<td>0.9</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>75th Percentile</td>
<td>1.4</td>
<td>1.4</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>P1 - Value</td>
<td>0.34</td>
<td>0.41</td>
<td>0.46</td>
<td>0.28</td>
<td>0.04*</td>
</tr>
<tr>
<td>P2 - Value</td>
<td>0.07</td>
<td>0.01*</td>
<td>0.06</td>
<td>0.02*</td>
<td>0.16</td>
</tr>
</tbody>
</table>

**Conclusion:** The above findings indicate that DAO is present in low amounts in all segments of the upper GIT. But only in the duodenum a significant difference was found between GMA and CG, thus indicating that histamine-mediated symptoms most likely arise in duodenum. Therefore, regarding the upper GIT, the immunohistochemical staining for DAO only in duodenum could serve as an additional diagnostic parameter for detecting patients with GMA and possibly other histamine-mediated diseases. The above mentioned distribution pattern of DAO strengthens the theory that DAO acts extracellularly and is responsible for the elimination of the transepithelially absorbed exogenous histamine as well as of the endogenous histamine, as its highest staining intensity is found at the SLP throughout the upper GIT.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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L-cysteine has been proposed as adjuvant therapy in CAG; the amino acid binds covalently to acetaldehyde (a Group I human carcinogen), removing it from the stomach. The aim of present study was to use L-cysteine to improve the symptoms in patients with diagnosis of CAG.

**Aims & Methods:** One hundred fourteen consecutive patients (M=43, mean age 64.21 years) (with histological diagnosis of CAG) by means of both gastric histology (moderate to severe chronic, atrophic, body gastritis according to the OLGA staging system) and serology (pepsinogen 1 <25 µg/l gastrin-17 >14 pmol/l) underwent upper endoscopy, biopsies and biopsy were recorded and multiple gastric cells units per patient, endoscopic therapy, intervention radiology procedures, and surgery. Clinical outcomes were documented, including the need for blood transfusion and the number of packed red cells units per patient, clinical outcomes were documented, including the need for blood transfusion and the number of packed red cells units per patient.

**Results:** The global symptomatic score results as follows, lasting the 24 months follow-up. Group 1: baseline 4.93; 3 months 3.36; 6 months 2.96; 24 months 2.64. Group 2: baseline 5.9, 3 months 6.2, 6 months 5.6, 24 months 5.8 (p < 0.01). Subdividing the CAG patients according to the etiology (autoimmune gastritis or previous *Helicobacter pylori* infection) no differences were found in improving symptoms. No relevant side effects were observed during the study.

**Conclusion:** The administration of L-cysteine to subjects affected by moderate-severe chronic atrophic gastritis seems able to improve the symptoms in a two-year follow-up. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1156 ANALYSIS OF REBLEEDING PATIENTS IN UPPER GASTROINTESTINAL BLEEDING IN A SINGLE CENTER SERIES**

R. Jiménez-Rosales1, E. Ortega-Suazo2, P. Abellán-Alfofe1, F. Valverde López2, J.G. Martínez-Cara1, E. Redondo Cerezo1

1Digestive Diseases, Hospital Virgen de las Nieves, Granada/Spain
2Gastroenterology, "Virgen de las Nieves" University Hospital, Granada/Spain

**Contact E-mail Address:** eredondoec@gmail.com

**Introduction:** Upper gastrointestinal bleeding (UGIB) is one of the main causes of hospital admission and urgent endoscopy in Gastroenterology departements. In-hospital mortality from UGIB has decreased throughout the last 2 decades with a corresponding increase in the performance of endoscopy and endoscopic therapy. However, studies suggest that improvements in the therapeutic procedures for patients with UGIB could be responsible of the mortality decline. Despite this, UGIB represents a true emergency, associated with significant morbidity, mortality and healthcare costs. Furthermore, rebleeding after initial endoscopic therapy is observed in 10–25%, and it has been associated with a higher mortality rate. Therefore, the definition of predictive factors for rebleeding is of outstanding importance.

**Aims & Methods:** The aim of our study is to analyze risk factors and outcomes in a population of patients who suffered rebleed. We present a retrospective study on a prospectively built database of patients with GI bleeding admitted to the Emergency Room of ‘Virgen de las Nieves’ University Hospital over 42 months, from January 2013 to July 2016. All patients underwent upper endoscopy, and a database was created regarding patients' demographic data, current medications (including antiplatelet drugs, NSAIDs and oral anticoagulants), clinical presentations, hemodynamics, admission laboratory test results, and endoscopic findings was collected. Interventions were documented, including the need for blood transfusion and the number of packed red cells units per patient, endoscopic therapy, intervention radiology procedures, and surgery. Clinical outcomes were documented in hospital and delayed 6-months mortality, rebleeding and delayed 6-months bleeding and cardiovascular events.

**Results:** 507 patients were included (339 males; aged 42 ± 16.4). The incidence of rebleeding was 17.3% (n = 88). In the univariate analysis, factors related with rebleeding were creatinine levels (1.52 vs. 1.15; p < 0.001), tachycardia (96.28 vs. 88.24; p < 0.001), low levels of albumin (2.80 vs. 3.238; p < 0.001) and low CO2 arterial pressure (103 vs. 107.9; p < 0.001). In a logistic regression analysis tachycardia and high creatinine were independent risk factors for rebleeding, and albumin showed as an independent protective factor (Table 1). Rebleeding was associated with in-hospital mortality (p < 0.0001), by contrast, it was not related to delayed 6-months mortality, nor with GI bleeding and hemorrhagic events. The UGIB risk scores AIMS 65 and Rockall showed poor predictive ability for acute death in the rebleeding patients’ group and was similar for Blatchford score (based on AURC).

**Conclusion:** Rebleeding in UGIB is associated with increased in-hospital mortality; nevertheless, it is not related with delayed 6-months mortality, hemorrhagic and cardiovascular events. High creatinine and low albumin levels were independent risk factors for rebleeding, suggesting a potential predictive role of these parameters. AIMS65, Rockall and Blatchford were then been used in the present study: the hospital mortality but worked poorly in the patients who suffered rebleeding.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1157 A CASE-CONTROL STUDY ON THE RISK OF UPPER GASTROINTESTINAL MUCOSAL INJURIES IN SUBJECTS PRESCRIBED NSAIDS AND ANTI-THROMBOTIC DRUGS USING THE LARGE ORGANIZED DATABASE OF CLAIMS IN JAPAN**

N. Sugisaki1, R. Ikawirii2, K. Fujimoto3

1Graduate School Of Medical Science, Saga University, Saga/Japan
2Dept. Of Gastrointestinal Endoscopy, Saga Medical School, Saga/Japan
3Dept. Of Internal Medicine, Saga Medical School, Saga/Japan

**Contact E-mail Address:** nobuyuki_sugisaki@eapharma.co.jp

**Introduction:** Upper gastrointestinal (GI) adverse effects induced by NSAIDs and anti-thrombotic drugs are increasing along with progressive aging of society. Recently it is essential to perform pharmaco-epidemiological studies to identify adverse effects in the real-world setting using a large-scale medical database. We conducted a case-control study to evaluate the risk of upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

**Aims & Methods:** The medical claims database developed by Japanese Medical Data Center (JMDC) Co., Ltd. was selected as data source in the present retrospective observational study. The JMDC claims database comprised of integrated medical and pharmacy claims, and includes both hospital and outpatient care from over 90 payers (approximately 3.7 million of population on an accumulated basis). Eligible subjects were aged 20 to 74 and registered for at least 3 months in the database from January 2009 to December 2014. The evaluated upper GI mucosal injuries were peptic ulcers (143,271 cases), upper GI bleeding (10,545 cases) and gastroesophageal reflux disease (GERD: 154,755 cases) with diagnosis by ICD-10 codes and implementation of the upper GI endoscopy. For the each test-case, ten controls who matched age, sex and diagnosis month were identified from the database. Multivariate logistic regression analysis was used to calculate odds ratios of occurrence of each upper GI mucosal injuries caused by NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antiplatelet drugs (except low-dose aspirin) and anticoagulants.

**Results:** The odds ratios of peptic ulcers were 1.45, 1.31, 1.50, 1.53 and 1.62 for NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antiplatelet drugs, and anticoagulants respectively. The odds ratios of all the upper GI mucosal injuries were the highest in the patients with anticoagulants, and the ratios were relatively low in those with NSAIDs and COX-2 selective inhibitors. The odds ratios tended to increase with the number of prescribed
medicines (1 agent <2 agents <3 agents, peptic ulcers: 1.38 < 2.49 < 4.52, upper GI haemorrhage: 1.74 < 3.65 < 7.77, GERD: 1.61 < 2.96 < 5.58, respectively). The upper GI mucosal injuries were exacerbated in complication of lifestyle-related diseases, including hyperlipemia and diabetes mellitus.

Conclusion: Prescribing NSAIDs and anti-thrombotic medicines was associated with increased risks of developing upper GI injury. The present multi-centre study utilizing the large organized database of claims in Japan provided precise clinical evidence for safety management of medical drugs in the clinical settings in Japan.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1158 GASTROINTESTINAL BLEEDING UNDER ANTIACOAGULATION THERAPY: SYSTEMATIC REVIEW OF THE REBLEEDING RISK, ITS RISERSVEMENT PROFILE AND RISK STRATIFICATION TO SELECT PATIENTS FOR LEFT ATRIAL APPENDAGE OCCLUSION

A. Hadel1, A. Aminian2, A. Bondue1, J. Deviere3, A. Lemmers4
1Gastroenterology, Hepatopancreatology And Digestive, Erasme Hospital, Universite Libre de Bruxelles, Brussels/Belgium
2Cardiology Department, Hopital civil Marie Curie, Charleroi/Belgium
3Cardiology Department, Erasme Hospital, Universite Libre de Bruxelles, Brussels/Belgium
4Gastroenterology, Hepatopancreatology And Digestive Oncology, Erasme Hospital, Universite libre de Bruxelles ULB, Brussels/Belgium

Contact E-mail Address: alia.hadeli@gmail.com

Introduction: Percutaneous left atrial appendage occlusion (LAAO) is increas-ingly recognized as valid alternative therapy to reduce thrombo-embolic risk in patients with valvular atrial fibrillation (AF) and contraindications for long term oral anticoagulation (OAC) therapy.1,2 Patients at high thromboembolic risk with previous gastrointestinal bleeding (GIB) might be at risk of bleeding recurrence in case of resuming anticoagulation. They could be selected for alternative therapies like LAAO. Up to now, there is no scientific consensus for patient selection for LAAO based on recurrent GIB risk.

Aims & Methods: We aimed to review the literature on gastrointestinal (GI) bleeding complications1 during OAC withdrawal in order to define the reversibility profile of each lesion in an organ by organ and lesion by lesion approach to stratify the risk of bleeding individually. We systematically collected data from both prospective and retrospective studies from pubmed in order to extract rebleding risk by etiology. The reversibility profile was defined by type of treatment needed to cure the lesion. Low reversibility (LR) profile was defined as a need for heavy surgery, radiotherapy, embolisation to cure the lesion or as diffuse lesions.

Results: The most frequent reported causes of bleeding are peptic gastroduodenal ulcer (60%) for upper GI, diverticulosis (40%), colitis (20%) and anorectal diseases (20%) for lower GI and angiodysplasia (23%) for the midgut, these latter being responsible for 5% of all GI bleeding causes. The rate of bleeding recurrence under OAC withdrawal is variable due to different GI and hepatic endoscopic findings, whilst 5-70% of patients experienced major GI bleeding requiring early intervention. Aspirin resumption was observed in 4/20 (20.0%) after haemostasis for PUD, whilst rebleding planning was documented on the endoscopy report in 33.0%. Regarding H. pylori, 51% under untreated H. pylori infection, 10 (36%) had positive resection of whom 7 (70%) received eradication. 12/25 (52.2%) patients underwent follow-up endoscopy following gastric ulcer. The median transfusion requirement per patient was 2 units. Despite this, rates of anemia at discharge and at 6 months were 83.5% and 62.9% respectively, with iron therapy initiated in 12.1%. Overall, our 30-day mortality rate was 12.1%.

Conclusion: In this single-centre study, the management of PUD could be improved in multiple areas in line with international guidelines. Audits in other centres are required to quality assure the management of PUD. Interestingly, rates of anemia at discharge and on follow-up are high. Such patients may benefit from iron replacement at discharge.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1159 AN AUDIT INTO THE MANAGEMENT OF BLEEDING PEPIC ULER BLEEDING

K. Siau1, A. Vijayasingham2
1Royal College Of Physicians, JAG Clinical Fellow, London/United Kingdom
2Postgraduate School of Medicine, Birmingham/United Kingdom

Contact E-mail Address: keithk@siau.org

Introduction: Peptic ulcer disease (PUD) accounts for 25–56% of acute gastrointestinal bleeding (AUGIB) and is associated with high mortality.

Aims & Methods: In line with international guidelines, we aimed to audit our practice of bleeding PUD at a district general hospital within the West Midlands, UK. We retrospectively identified all patients with AUGIB who had inpatient endoscopic confirmation of PUD between November 2012- 2014. We scrutinised case notes and endoscopy and case records to assess management related to PUD, in addition to follow-up records with the general practitioner.

Results: We identified 91 patients (median age 78.4, 65.9% male), of whom 63.7% were admitted with AUGIB, whereas 36.3% developed bleeding during their hospital stay. The major risk factors were female (74.7%) vs. male (25.3%), 31.8% were related to asprin/non-steroidal anti-inflammatory drug use. 48 (52.7%) had high risk ( Forrest 1a-2b) lesions, of whom 38/48 (79.2%) received dual endoscopic therapy and 6/49 (12.5%) received adrenaline mono-therapy, 18.8% received the recommended adrenaline volume of 15 mL. Of 90% prescribed intravenous proton pump inhibitor infusion, 85% did not complete the full 72-hour duration. Rebleeding occurred in 12 patients (13.2%) after a median of 3-days post endoscopy, 10 (83.3%) underwent repeat OGD 2 (16.7%) under- went CT embolisation, whilst 5 (25.0%) underwent surgery. Aspirin resumption was observed in 4/20 (20.0%) after haemostasis for PUD, whilst rebleding planning was documented on the endoscopy report in 33.0%. Regarding H. pylori, 51% under untreated H. pylori infection, 10 (36%) had positive resection of whom 7 (70%) received eradication. 12/25 (52.2%) patients underwent follow-up endoscopy following gastric ulcer. The median transfusion requirement per patient was 2 units. Despite this, rates of anemia at discharge and at 6 months were 83.5% and 62.9% respectively, with iron therapy initiated in 12.1%. Overall, our 30-day mortality rate was 12.1%.

Conclusion: In this single-centre study, the management of PUD could be improved in multiple areas in line with international guidelines. Audits in other centres are required to quality assure the management of PUD. Interestingly, rates of anemia at discharge and on follow-up are high. Such patients may benefit from iron replacement at discharge.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: Data related to the three scoring systems were collected prospectively and scores calculated in consecutive patients who were admitted with acute UGHB to the Royal Adelaide Hospital over 24 months. The performance of these scoring systems was evaluated using the operating characteristic (ROC) curves, in predicting the outcomes was assessed: the need for endotherapy, rebleding risk, transfusion requirement, surgical intervention and death. All patients received high dose acid suppression therapy.

Results: Of the 777 patients (491M; 66.4±yrs) patients were treated conservatively due to medically unstable condition. 320 patients (41%) were referred to hospital for UGIB. Aims & Methods: There are several risk-scoring systems available to assist the management of upper gastrointestinal bleeding (UGIB). The aim of this study is to compare the performance of pre-endoscopy (pre-RS), post-endoscopy Rockall score (post-RS), GBS and AIMS65 scores in predicting the need for interventions and complications in patients admitted to hospital for UGIB.

Aims & Methods: Aims & Methods: Contact E-mail Address: waku-style@festa.ocn.ne.jp

Antral gastritis is commonly observed in clinics, especially after endoscopic operation. Besides from hemoclip, APC or electrocoagulation, more novel hemostasis approaches should be developed to improve endoscopic bleeding management. Granular smeicite is bioinert mineral and efficient for curing diarrhea. Inspired by its dehydration and tissue-covering effect, this pilot study was to investigate its efficacy and safety for controlling hemorrhage in rats.

Aims & Methods: Study design: A total of 30 male rats (Sprague-Dawley strain) were randomly divided into four equal groups. For hemorrhage model, a horizontal 10-mm incision was made on the lower part of the left hepatic lobe. Commercial hemostatic powder, smeicite, starch and normal saline were respectively applied. Bleeding duration and blood loss were recorded. 1 week later, rats were sacrificed and liver tissue was collected for histopathology. Results: Smeicite demonstrated the best hemostasis effect, and its mean coagulation time was 1.45 ± 0.026 min. Commercial hemostatic chitosan stycopic powder need 2.5 ± 0.04 min for complete clotting, while Starch group was 4.275 ± 0.056 min and 4% saline was 4.925 ± 0.108 min. Similarly, smeicite led to less blood loss (0.6188 ± 0.034 g), while rats lost 2.3288 ± 0.123 g blood (p < 0.05) under normal saline treatment. For starch and commercial chitosan, the blood loss was respectively 2.0862 ± 0.061 g and 1.9252 ± 0.0238 g. Histopathologic results confirmed that smeicite was biocompatible to tissue.

Conclusion: The mineral smeicite powder was the superior candidate for hemostasis treatment in vivo. Compared with common polysaccharide agents, smeicite could induce faster coagulation and reduce blood loss. More importantly, bioinert smeicite was biocompatible and even promoted the wound healing. For gastrointestinl application, smeicite powder could be delivered through endoscopic spray tube, while its inspiring efficacy required more endoluminal hemostasis tests.

Aims & Methods: Aims & Methods: Contact E-mail Address: dr_amr_hanafy@yahoo.com

Introduction: Life-threatening bleeding could occur early after variceal sclerotherapy in cirrhotic patients. Aims & Methods: We aimed to determine simple predictive factors of this complication in cirrhotic patients. Among 750 patients treated with variceal sclerotherapy (esophageal varices, EV) (605; 87.5%) and (gastroic varices, GV) (n = 95, 12.7%) Zagazig University hospital-endoscopy unit- Internal medicine department, in the period from October 2014 till July 2016. 150 patients (20%, mean age 46 ± 9.4 years) (EV = 129, GV = 21) developed bleeding due to sclerotherapy induced ulcers confirmed by endoscopy 6.4 ± 2.1 days after the procedure. Cirrhosis was post viral hepatitis C (89%), hepatitis B (10%) and cryptogenic in (1%). A case-control study was performed comparing these
patients with 150 patients who underwent endoscopic variceal sclerotherapy without the development of bleeding due sclerotic ulceration.

**Results:** Bleeding occurred 6.4±2.1 days (2–10) following sclerotherapy. Twenty-three patients died following the bleeding (15.3%). Using a multivariate analysis; pre-procedural factors as serum albumin <2 g/dl [OR 1.3], total bilirubin >1.6 mg/dl; and platelet ratio index (APRI) >1 [OR 1.2], low prothrombin concentration <50% [OR 1.5]. Intra-procedural factors as amount of ethanolamine >15.5 ml [OR 2.6], amicarate >3.5 ml [OR 2.9]. Post-procedural factors within 24 hours after endoscopy: leukocytosis >12,000 cell/µl [OR 1.9], drop of hemoglobin >10% of the pre-endoscopic value [OR 3.2], prolonged INR >1.55 [OR 1.2].

**Conclusion:** Bleeding related to sclerotic ulcers is not uncommon, but may be life threatening. The proposed predictive factors should be watched and minimized before and during variceal sclerotherapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
1. Carbonell N, Pauwels A, Serfaty L, Fourdan O, Levy VG, Poupon R. Functional gastrointestinal (GI) disorders (FGIDs) have been theorized to be a disorder of the brain-gut axis with both somatic markers (e.g., visceral pain or abnormal bowel habits) and psychological traits and only quite general GI symptoms. There remains a need for more accurate criteria to be established for FGID. In the current study, the aim was to test the predictive power of a series of psychological traits and whether this association remains stable depending on the criteria used to define FGID in those with weekly GORS was 43.9% (95% CI, 35.1–52.9%). The pooled OR for dyspepsia in individuals with weekly GORS, compared with those without, was 6.94 (95% CI 4.33 to 11.12). The OR for dyspepsia in weekly GORS was significantly higher in all geographical regions and significantly higher in those with the diagnostic criteria used. The pooled degree of overlap between the two conditions was 25.9% (95% CI, 19.9–32.4%), varying from 22% when the Bowel Disease Questionnaire was used to define weekly GORS, to 42.6% with the Mayo Reflux Disease Questionnaire. 

**Conclusion:** The OR of dyspepsia in individuals with weekly GORS was seven-fold that of individuals without GORS, and that there is overlap between the two conditions in up to one-quarter of individuals.

**Aims & Methods:** We conducted a systematic review and meta-analysis to estimate the prevalence of dyspepsia in individuals with gastro-oesophageal reflux symptoms, and to quantify the overlap between the two disorders. MEDLINE, EMBASE, and EMBASE Classic were searched (up until September 2016) to identify population-based studies reporting the prevalence of dyspepsia and GORD in adults (>15 years), defined using specific symptom-based criteria or a questionnaire. The prevalence of dyspepsia and weekly GORS were extracted for all studies. Pooled prevalence, according to study location and criteria used to define weekly GORS or dyspepsia, as well as odds ratios (OR), with 95% confidence intervals (CIs) were calculated. The degree of overlap between the two was examined.

**Results:** Of 14,132 papers evaluated, 79 reported prevalence of weekly GORS. Nineteen of these study populations, containing 111,459 participants, also reported the proportion of individuals with dyspepsia. The prevalence of dyspepsia in those with weekly GORS was 43.9% (95% CI, 35.1–52.9%). The pooled OR for dyspepsia in individuals with weekly GORS, compared with those without, was 6.94 (95% CI 4.33 to 11.12). The OR for dyspepsia in weekly GORS was significantly higher in all geographical regions and significantly higher in those with the diagnostic criteria used. The pooled degree of overlap between the two conditions was 25.9% (95% CI, 19.9–32.4%), varying from 22% when the Bowel Disease Questionnaire was used to define weekly GORS, to 42.6% with the Mayo Reflux Disease Questionnaire.

**Conclusion:** The OR of dyspepsia in individuals with weekly GORS was seven-fold that of individuals without GORS, and that there is overlap between the two conditions in up to one-quarter of individuals. Reasons for this remain speculative, but may include shared pathophysiological mechanisms or residual confounding.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1165 IMPACT OF SLEEP DISORDER IN PATIENTS WITH FUNCTIONAL DYSPHAGIA**

**K. Huh1, J. K. Park2, K. W. Jung3, C. M. Shin4, J. W. Kim1**

1Gastroenterology, Konkuk University Hospital, Daejeon, Republic of Korea
2Department Of Internal Medicine, GangNeung Asan Hospital, Gangneung; Korea, Republic of Korea
3Gastroenterology, Asan Medical Center, Seoul; Korea, Republic of Korea
4Gastroenterology, Bundang Seoul University Hospital, Bundang, Korea, Republic of Korea

**Contact E-mail Address:** kchuh2020@hanmail.net

**Introduction:** Few studies were reported on the association between sleep disorders and Rome III-based functional dysphagia (FD).

**Aims & Methods:** The aim of this study is to investigate the prevalence of sleep disorders in FD patients and the risk factors associated with sleep disorders. This multicenter, cross-sectional study had been conducted from August 2014 to December 2016 at 6 hospitals in Korea. Inclusion criteria were FD patients (>18years) met the Rome III criteria among the patients visited the gastroenterology department for dysphagia. Exclusion criteria were prior surgery to the upper gastrointestinal tract, history of ulcer disease, erosive GERD, history of malignancy, and severe comorbidity. Healthy control group who had no clinical history of gastroesophageal related disorder and no abnormal finding on endoscopy recruited from health examination center for screening. The Pittsburgh Sleep Quality Index was used to assess sleep disturbance. Hospital anxiety and depression scale was used to identify anxiety and depression.

**Results:** This study included 160 FD patients and 223 healthy control groups. The total Pittsburgh Sleep Quality Index score was higher in FD patients than health controls (7.8±4.3 vs 5.6±3.1, p = 0.000). The prevalence of sleep disorder was significantly higher in FD patients than healthy control (41.2% vs 18.8%, p = 0.000). In univariate analysis, FD was significant risk factor for sleep disorder (OR 3.12, p = 0.001). The independent risk factors for sleep disorder in multivariate analysis were FD (OR 1.80, p < 0.001), sleep apnea (OR 1.90, p = 0.026), female (OR 1.78, p = 0.028) and depression (OR 2.91, p = 0.001).

**Conclusion:** FD significantly impacted on sleep disorder. FD was independent risk factor in sleep disorder.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1167 PSYCHOSOCIAL PREDICTORS OF LATER GASTROINTESTINAL SYMPTOMS**

**M.P. Jones1, N. Kološki2, L. Van Oudenhove1, A. Ejova1, N.J. Talley1**

1Psychology, Macarthur University Psychology, North Ryde; Australia
2Faculty Of Health And Medicine And Priority Research Center For Digestive Health And Neurogastroenterology, The University of Newcastle Australia, Callaghan/Australia;NSW
3Translational Research Center For Gastrointestinal Disorders (targid), Katholieke Universiteit Leuven, Leuven; Belgium

**University of Newcastle Faculty of Health PVC Office, Callaghan/Australia**

**Contact E-mail Address:** mike.jones@mq.edu.au

**Introduction:** Functional gastrointestinal (GI) disorders (FGIDs) have been theorized to be a disorder of the brain-gut axis with both somatic markers (e.g., visceral pain or abnormal bowel habits) and psychological ones. Exactly how abdominal and psychological disorders are related remains poorly understood. While there have been a small number of methodologically rigorous longitudinal studies that examine this question (1,2), even these have typically only studied a small number of psychological traits and only quite general GI symptoms. There remains a need for further longitudinal studies of how psychological traits predict subsequent FGID symptoms.

**Aims & Methods:** The present study is a longitudinal examination of the influence of a broad range of psychosocial predictors on later bowel-related and epigastric discomfort in a community sample. A sample of 188 individuals randomly sampled from the Australian electoral roll were surveyed, and, of them, 123 met Rome III criteria for irritable bowel syndrome (IBS) or functional dysphagia (FD) while 65 did not meet criteria for FGIDs. Subjects were of mean age 49 (SD = 15, range 20-87) and 73% were female. A broad range of psychological constructs (24 in total) were measured at baseline. Among them were anxiety, depression, somatization, childhood abuse, neuroticism, hypochondriasis, somatic vs psychological symptom attribution, coping, and social support. GI symptoms were measured 18 months later using two Likert-type scales: one concerning epigastric pain and the other concerning bowel symptoms. Exploratory factor analysis (EFA) was used as a data-reduction technique to create a smaller number of composite predictors. Statistical analysis was based on ordinal regression.

**Results:** Ten composite scores were derived via EFA to be examined as predictors of bowel symptoms (N =188) a number of psychosocial traits (e.g., general life worry, non-sexual childhood abuse, psychological symptom attribution and childhood sexual abuse; see Table 1) were individually related to subsequent bowel symptom severity 18 months later (Table 1). There was evidence of variation in psychosocial predictors of gastrointestinal symptoms between individuals who met and did not meet criteria for IBS or FD. With respect to bowel symptoms, no psychological trait reached statistical significance.
as a predictor among individuals with FGIDs (Table 1). Epigastric symptom severity was predicted by worry and psychological attribution of symptoms among FGID individuals but no psychological trait predicted symptom severity among non-FGID individuals (Table 1).

Conclusion: A range of psychosocial factors predict later gastrointestinal symptom burden. For bowel symptoms, associations between psychological traits and symptom burden appear to be most clearly driven by the non-FGID subgroup, among whom psychological attributions for symptoms and problem-focused coping are positively related to later symptom burden. For epigastric symptoms, a range of psychological traits were relevant, with the predictive patterns being most clearly driven by individuals who qualified for FGIDs. In light of these results, studies of the brain-gut axis need to consider a greater array of psychological traits, particularly outside of anxiety and depression. Further, the complexity of associations between psychological traits and gastrointestinal symptoms may be moderated by symptom level but are relatively similar across upper and lower gastrointestinal symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1168 An increased prevalence of neurodegenerative/demyelinating process in patients with esophageal achalasia—a prospective study
M. Jerie1, Z. Vackova2, E. Meluzinova2, J. Krajcov2a, J. Vojtech1, J. Spicak1, J. Vymazal1, J. Martinek1
1 Department Of Neurology, Hospital Na Homolce, Prague/Czech Republic
2 Institute of Clinical and Experimental Medicine, Prague/Czech Republic
3 Charles University Hospital University Hospital Motol, Prague/Czech Republic
4 Hospital Na Homolce, Prague/Czech Republic

Contact E-mail Address: martin.jerie@homolka.cz

Introduction: In the recent years, there has been an increasing recognition of the presence of gastrointestinal (GI) dysfunction in patients with neurologic diseases. There are no studies examining a relationship between psychological traits and gastrointestinal symptoms in patients with neurologic diseases and symptoms in their personal and family history. Those with a suspicion of a neurological disease were referred for a detailed clinical resolution manometry, endoscopy and esophagogram. A total of 140 consecutive patients with a neurodegenerative/demyelinating disease were examined (28%) described dysphagia as a symptom of their personal history. These patients will be examined by esophageal manometry.

Conclusion: Our results imply an increased prevalence of neurodegenerative/demyelinating diseases in patients with achalasia (3.6% vs. approx. 1.4% in the Czech controls). Also, a high prevalence of dysphagia was found among patients with a neurodegenerative/demyelinating disease. These results warrant further confirmation in a large population-based study.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1169 HIGH RESTING PARASYMPATHETIC CARDIAC VAGAL TONE CONFERS A UNIQUE FUNCTIONAL BRAIN NETWORK DURING ACUTE OESOPHAGEAL PAIN
1 Centre For Neuroscience And Trauma, Blizard Institute, Wingate Institute Of Neurogastroenterology, Barri and the London School of Medicine & Dentistry, Queen Mary University of London, London/United Kingdom
2 Research Department Of Clinical and Experimental Medicine, University College London, London/United Kingdom
3 Institute Of Psychiatry, Psychology & Neuroscience, Department Of Neuroimaging, King’s College London, London/United Kingdom
4 Gastroenterology, University Hospitals of North Midlands, Stoke on Trent/United Kingdom

Contact E-mail Address: j.ruffle@qmul.ac.uk

Introduction: Visceral pain is a complex percept influenced by numerous factors. Of these, differences in the autonomic nervous system (ANS)-in particular, parasympathetic cardiac vagal tone (CVT)-has been suggested to have a physiological role in the regulation and modulation of painful sensory signalling, to the extent of vagal nerve stimulation (to raise subject CVT) being tested as a possible anti-nociceptive.

Aims & Methods: To date, no studies have explored the brain functional connectivity or network properties of CVT in relation to a painful stimulus, and thus this was our aim. In 21 healthy participants (10 male; mean age 30 years (range 21-53 years), we quantified resting CVT using a Neuroscope. For all subjects, functional MRI data were acquired using a 3T MRI scanner during painful oesophageal balloon distension, as described elsewhere(). The effect of resting CVT on brain networks during acute oesophageal pain were determined by means of network based statistics(). Brain nodes were selected a priori of previous autonomic/visceral pain literature and included the following: bilateral anterior insula, amygdala, insula, pallidum, thalamus and single hypothalamus (nodes = 31). Blood oxygen level dependant (BOLD) signal during oesophageal balloon distention to pain tolerance threshold was extracted from each of these regions and cross-correlated to produce nodal correlation maps. The results were then expressed by means of median split based upon resting CVT value, and a two-tailed t-test of was undertaken. A primary threshold was applied (t=1.65; p<0.05) and permutation tested 50,000 times to ensure statistical stringency applied.

Results: We identified a unique subcortical brain connectivity network in the high resting CVT individuals when exposed to acute oesophageal pain. This complex symmetrical network comprised all 11 nodes with a total of 18 edges (significant

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Table 1: Associations between individual psychological traits and symptom severity. Numerical entries are odds ratios (OR odds ratio). *** indicates p < 0.001, ** indicates p < 0.01, * indicates p < 0.05, and " indicates p < 0.05. The number of patients was 40 (40% of the total)

<table>
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<th>Predictor</th>
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<th>FGID Severity</th>
<th>Epigastric Non-FGID</th>
<th>Epigastric Symptom</th>
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<td>1.60 (0.22)**</td>
<td>1.60 (0.65)</td>
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<tr>
<td>Childhood non-sexual abuse</td>
<td>1.63 (0.68)</td>
<td>1.06 (0.15)</td>
<td>1.33 (0.17)</td>
<td>1.94 (0.88)</td>
<td>1.05 (0.15)</td>
<td>1.32 (0.17)*</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>0.53 (0.22)</td>
<td>0.85 (0.12)</td>
<td>0.88 (0.11)</td>
<td>0.68 (0.32)</td>
<td>0.82 (0.12)</td>
<td>0.87 (0.11)</td>
<td></td>
</tr>
<tr>
<td>Somatic rather than non-psychological attribution</td>
<td>0.27 (0.11)</td>
<td>0.93 (0.13)</td>
<td>0.72 (0.10)*</td>
<td>0.83 (0.36)</td>
<td>0.64 (0.11)**</td>
<td>0.63 (0.09)**</td>
<td></td>
</tr>
<tr>
<td>Doctor reassurance</td>
<td>0.99 (0.31)</td>
<td>1.96 (0.12)</td>
<td>0.94 (0.14)</td>
<td>1.06 (0.34)</td>
<td>1.49 (0.33)*</td>
<td>1.01 (0.16)</td>
<td></td>
</tr>
<tr>
<td>Somatisation</td>
<td>2.92 (1.23)*</td>
<td>0.93 (0.14)</td>
<td>1.16 (0.15)</td>
<td>0.30 (0.30)</td>
<td>1.27 (0.18)*</td>
<td>1.54 (0.20)**</td>
<td></td>
</tr>
<tr>
<td>Childhood sexual abuse</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)*</td>
<td>1.60 (0.22)**</td>
<td>2.16 (0.88*)</td>
<td>1.11 (0.18)</td>
<td>1.16 (0.16)</td>
<td></td>
</tr>
</tbody>
</table>

When considered jointly with other predictors, psychological attribution of symptoms was significantly positively related to both bowel symptom severity (non-FGID: OR = 0.31, SE = 0.13; Full: OR = 0.74, SE = 0.11) and epigastric symptom severity (FGID: OR = 0.63, SE = 0.09; Full: OR = 0.63, SE = 0.11). The same was the case for worry (Bowel: Full: OR = 1.40, SE = 0.21; Epigastric: FGID: OR = 1.58, SE = 0.27; Full: OR = 1.54, SE = 0.23). For bowel symptoms, problem-focused coping (OR = 2.30, SE = 0.98) was an additional independent positive (notably, not negative) predictor among participants without FGIDs.

*P < 0.05, **P < 0.01, ***P < 0.001.
functional connections). These interconnections included the following: thala-
mus-amygdala, thalamus-hypothalamus, hypothalamus-NAc, amygdala-pu-
tamen amygdala-NAc and insula-putamen. No significant network was identified for the low CVT group.

Conclusion: During acute oesophageal pain, resting cardiac vagal tone yields a unique combination comprising numerous complex subcortical brain
regions, many of which have been previously reported with either visceral pain or modulation of baseline autonmics either at the physiological or neuroana-
tomical level (3). Previous research has suggested that a high resting CVT may be
protective of noxious signaling, and furthermore studies investigating vagal
nerve stimulation have included and report that of anti-nociception (4). Given
the well-established role of these subcortical regions in pain processing, we
suggest that this network identified may be of significance as to the neurophysi-
ological process of parasympathetic modulation of painful sensory
signalling. Lastly, to date, no studies have undertaken real-time assessment of the ANS
(including CVT) during functional brain imaging and acute visceral pain.
Future studies should investigate for this.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Ruffle, JK et al. The influence of extravasation on brain activity at baseline and
3. Ruffle JK et al. Brain morphological differences in gastrointestinal disorders
may be in part due to alteration in resting autonomic function.
4. Farmer, AD et al. Electrical vagal nerve stimulation prevents the develop-

P1170 RAPID DRINK CHALLENGE (RDC) TEST DURING
OESOPHAGEAL HIGH RESOLUTION MANOMETRY (HRM) IN
PATIENTS WITH OESOPHAGO-GASTRIC JUNCTION OUTFLOW
OBSTRUCTION
D. Biasutto, F. Mion, A. Garros, S. Roman
Digestive Physiology, Lyon I University and Hospices Civils de Lyon, Lyon;France

Contact E-mail Address: d.biasutto@unicampus.it

Introduction: Oesophageo-gastric junction outflow obstruction (OGJOO) is of
unknown significance. It may be secondary to an incomplete form of achalasia,
a mechanical obstruction or be idiopathic. Rapid drink challenge (RDC) test is
easy to perform during oesophageal HRM.

Aims & Methods: We aimed to assess the yield of RDC in patients with OGJOO.
From a database of 3226 consecutive oesophageal HRM performed from 01/
2012 to 03/2017, we extracted patients with OGJOO according to the Chicago
Classification V3.0. HRM protocol consisted of 10 ml water swallows in supine
position and RDC test (200-ml free drinking) in sitting position. Distal contrac-
tile integral (DCI) integrated relaxation pressure (IRP), distal and pan-oesopha-
gal pressure pulsation (POP); homogeneous oesophageal pressure pulsation >30 mmHg
were reported for 3 ml swallows. POP and oesophageal shortening (OS)
were analysed during RDC. Symptom severity was assessed with Eckardt score.
Causes of OGJOO were determined by reviewing patients’ chart for previous
history, complementary work up and treatment. Quantitative data were
expressed as median (range) and qualitative data as percentage. They were com-
pared using non parametric and Chi square tests.

Results: 75 patients (29%) (29 males, mean age 62 years (25–92)) were included.
The dominant symptom was dysphagia (69%), regurgitation (9%), chest pain
(5%), other (13%), no symptom (3%). The causes of EGJOO were previous
oesophageo-gastric surgery (43%), incomplete achalasia (7%), mediastinal neo-
plasia (7%), miscellaneous (19%) and unknown (25%). RDC test was success-
fully performed in 70 patients (93%) and associated with POP and OS in 41% and
15% respectively. Dysphagia as dominant symptom was more frequent (79% vs
59%, p = 0.0157) and more severe (Eckardt score 5 [1–11] vs 3 [0–10], p = 0.01)
in patients with POP during RDC compared to those without. The same obser-
vation was achieved in patients with OS vs those without (dysphagia 100% vs 62,
p = 0.02 and Eckardt score 6 (2–10) vs 1 (0–11), p = 0.02). Manometric para-

Manometry parameters
Mean % ineffective peristalsis 15% 28%
Mean % ineffective peristalsis 12% 23%
Mean % ineffective peristalsis 11% 25%
Mean % ineffective peristalsis 14% 25%
Mean % ineffective peristalsis 16% 27%
Mean % ineffective peristalsis 18% 28%
Mean % ineffective peristalsis 19% 29%
Mean % ineffective peristalsis 20% 30%
Mean % ineffective peristalsis 22% 31%
Mean % ineffective peristalsis 24% 33%
Mean % ineffective peristalsis 26% 34%
Mean % ineffective peristalsis 28% 35%
Mean % ineffective peristalsis 30% 36%
Mean % ineffective peristalsis 32% 37%
Mean % ineffective peristalsis 34% 38%
Mean % ineffective peristalsis 36% 39%

Conclusion: While RDC test cannot be used to determine EGJOO cause, patients
with POP or OS during RDC had more severe dysphagia than those without.
In patients with POP, the highest DCI might be secondary to obstruction. Further
prospective studies should determine if RDC test could help to select patients
who might benefit from treatment.

Disclosure of Interest: F. Mion: consulting for Medtronic
S. Roman: consulting for Medtronic; research support from Sandhill and Crospon
All other authors have declared no conflicts of interest.
P1172 LOW-VOLUME MULTIPLE RAPID SWALLOW BETTER DISTINGUISH PERISTALTIC ISOSPHAGEAL RESERVE COMPARED TO HIGH-VOLUME RAPID DRINKING TEST

I. Martinucci1, N. De Bortoli1, S. Tolone2, M. Furnari3, M. Frazzoni4, L. Frazzoni5, L. Fuccio5, M. Bellini1, V. Savarino3, R. Penagini6, S. Marchi1, E. Savarino1

1Gastroenterology Unit, University of Pisa, Pisa/Italy
2Surgery, Second University of Naples, Naples/Italy
3Digestive Pathophysiology Unit, Sapienza University of Rome, Rome/Italy
4Digestive Pathophysiology Unit, University of Genoa, Genoa/Italy
5Surgery, DI-MI, Gastroenterology Unit, University of Genova, Genova/Italy
6Dipartimento Di Scienze Mediche, Università degli Studi di Milano Dippo. di Gastroenterologia, Milan/Italy
7Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy

Contact E-mail Address: martinucci.irene@gmail.com

Introduction: The Chicago Classification (CC V3.0) defined ineffective esophageal motility (IEM) by the presence of 50% or more of weak or failed peristaltic waves during high resolution manometry (HRM). Both low-volume (10ml) multiple rapid swallow (MRS) and high-volume (200ml) rapid drinking test (RDT) have been suggested as test to recognize the esophageal peristaltic reserve. Which test might better represent the esophageal peristaltic reserve is still a matter of discussion.

Aims & Methods: The aim of this study was to compare the diagnostic value of MRS and RDT in patients with IEM. From a larger group of patients evaluated for heartburn, weak/weak with poor response to standard dose proton pump inhibitors, we enrolled consecutive patients with IEM and with functional heartburn (FH). FH were enrolled as controls. IEM was defined according to the CC V3.0. All patients underwent 3 MRS (10ml of water in 5 swallows in less than 10s) and 1 RDT (200ml of water freely drunk). All patients underwent 24h impedance and pH recording (MII-pH). Mean DCI of MRS and DCI of RDT were compared with mean DCI of 10 single swallows (SS). The MRS/SS and RDT/SS ratio were calculated.

Results: We evaluated 30 patients with IEM (18 males and 12 females; mean age 45.7 ± 11.4 yrs) and 30 patients with FH (15 males and 17 females; mean age 41.2 ± 13.6 yrs). The MII-pH showed higher acid exposure time (AET) and number of reflux events in IEM than in FH (p < 0.05). Mean DCI of SS resulted lower in patients with IEM compared to FH (p < 0.05). One-hundred and eighty MRS and 60 RDT were evaluated. DCI of MRS was lower than 450 mmHg·s·cm in 77% (23/30) of IEM patients, and in 50% (15/30) of FH patients. DCI of RDT was lower than 450 mmHg·s·cm in 7% (6/90) of FH patients. A comparison of the esophageal body inhibition during multiple swallows test showed that if definition was contrasted identifying >3 cm using the 30mmHg isobaric contour tool.

Conclusion: We evaluated 30 patients with IEM (18 females; mean age 49.5 ± 12.4 yrs) and 30 patients with FH (17 females; mean age 41.2 ± 13.6). Impedance and pH 24h-analysis was performed to select patients with FH (normal AET and number of reflux and lack of reflux-symptom correlation). During HRM the mean DCI resulted similar in patients with EGJ-OO compared to FH (p > 0.039). One-hundred and eighty MRS and 60 RDT were evaluated. The lack of body inhibition was found in 11% (20/180) in MRS and in 53% (16/30) in RDT in EGJ-OO. No patients in FH showed lack of body inhibition during both MRS and RDT. All results are reported in Table 1.

Table 1: Results of SS, MRS and RDT in patients with EGJ-OO and FH

<table>
<thead>
<tr>
<th>EGJ-OO group</th>
<th>FH group</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean DCI MRS</td>
<td>1455.7 ± 1436.1</td>
<td>1982.6 ± 974.4</td>
</tr>
<tr>
<td>Mean DCI RDT</td>
<td>517.3 ± 665.4</td>
<td>1269.2 ± 1027.6</td>
</tr>
<tr>
<td>MRS weak/fail (90)</td>
<td>24/30</td>
<td>2/4</td>
</tr>
<tr>
<td>RDT weak/fail (30)</td>
<td>6/20</td>
<td>3/12</td>
</tr>
<tr>
<td>MRS/SS ratio</td>
<td>0.9 ± 0.3</td>
<td>1.6 ± 0.7</td>
</tr>
<tr>
<td>RDT/SS ratio</td>
<td>0.5 ± 0.4</td>
<td>1 ± 0.5</td>
</tr>
<tr>
<td>MRS complete body inhibition (%)</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>RDT complete body inhibition (%)</td>
<td>47</td>
<td>100</td>
</tr>
</tbody>
</table>

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1173 HIGH-VOLUME RAPID DRINKING TEST BETTER DISTINGUISH ESOPHAGEAL BODY INHIBITION COMARED TO LOW-VOLUME MULTIPLE RAPID SWALLOWS

I. Martinucci1, N. De Bortoli1, S. Tolone2, M. Furnari3, M. Frazzoni4, L. Frazzoni5, L. Fuccio5, M. Bellini1, V. Savarino3, R. Penagini6, S. Marchi1, E. Savarino1

1Gastroenterology Unit, University of Pisa, Pisa/Italy
2Surgery, Second University of Naples, Naples/Italy
3Digestive Pathophysiology Unit, Sapienza University of Rome, Rome/Italy
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6Dipartimento Di Scienze Mediche, Università degli Studi di Milano Dippo. di Gastroenterologia, Milan/Italy
7Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy

Contact E-mail Address: martinucci.irene@gmail.com

Introduction: Esophageal motor dysfunction and abnormal bolus transit are often encountered on high resolution impedance manometry (HRIM) performed prior to anti-reflux surgery (ARS) in gastroesophageal reflux disease (GERD). Esophageal motor dysfunction can be characterized using established software tools embedded in HRIM software, while new paradigms of interrogation of bolus presence and flow have been introduced with automated pressure flow analysis (PFA). The prevalence, and clinical relevance of these motor and bolus flow abnormalities to symptom presentation or symptom outcome from ARS are incompletely understood.

Aims & Methods: Our aim was to evaluate the interrelations between esophageal motor function and bolus transit using varying bolus consistencies, in health and in the context of symptomatic GERD prior to ARS. HRIM studies (Medtronic, Duluth, GA) from 18 controls (28.4 ± 7.1 yr, 50% F) and 86 GERD patients (56.2 ± 8.7 yr, 58% F) were reviewed, all of which were performed using 5 mL water (10 swallows), 5 mL viscous (5 swallows) and 1 cm³ bread boluses (2 swallows). All controls were asymptomatic; all GERD patients completed symptom questionnaires evaluating dominant and secondary symptoms using 5 point Likert scales for symptom frequency and severity (0 = none, 4 = frequent.

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: hasak.so@wustl.edu

P1174 ESOPHAGEAL BOLUS FLOW METRICS ON PRESSURE FLOW ANALYSIS (PFA) OF ESOPHAGEAL HIGH RESOLUTION IMPEDANCE MANOMETRY (HRIM) IN GASTROESOPHAGEAL REFLUX DISEASE (GERD)

S. Hasak1, A. Manolaki2, R. Badillo1, A. Ding3, A. Paulwels4, J. Talk5, N. Rommel6, T. Omani7, C.P. Gyawali1

1GI, Washington University in St. Louis, St. Louis/United States of America/MO
2Department Of Gastroenterology, School Of Medicine, University Of Thessaly, Larissa, Greece, University Of Thessaly, Larissa/Greece
3University of California in San Diego, San Diego/United States of America/CA
4Gastroenterology, University of Leuven, University Hospital Gasthuisberg, Leuven/Belgium
5University of Leuven, Leuven/Belgium
6University of Adelaide, Adelaide/Australia

Contact E-mail Address: hasak.so@wustl.edu

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Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced more frequently lack of body inhibition in patients with EGJ-OO.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: hasak.so@wustl.edu

P1174 ESOPHAGEAL BOLUS FLOW METRICS ON PRESSURE FLOW ANALYSIS (PFA) OF ESOPHAGEAL HIGH RESOLUTION IMPEDANCE MANOMETRY (HRIM) IN GASTROESOPHAGEAL REFLUX DISEASE (GERD)
**HMR metrics with comparisons between wet swallows in controls and patients, and between wet and solid swallows among patients.** *p < 0.05 *** p < 0.001 ** p < 0.01

**Introduction:** Oesophageal diverticula are rare diverticula of the gastrointestinal tract known to be associated with oesophageal motor disorders.

**Aims & Methods:** The aim was to study manometric abnormalities associated with oesophageal diverticula, using both wet and solid swallows. Patients underwent high resolution oesophageal manometry (HREM) in the upright position. 18 patients with oesophageal diverticula were found and were free of previous surgery. Traction diverticulism was excluded in all patients. We also included 10 healthy controls. HREM was performed using wet (5 mL of water) swallows in both groups, followed by solid (meat) swallows in patients. Mean age of the controls was 50 years old while for patients was 47 years old.

**Results:** The main reported symptom was dysphagia (76%). HREM found 11 (61%) patients with an oesophageal motor disorder, including 2 oesopha-gastric junction outflow obstruction (OGJOO), 4 achalasia (subtype 2: n = 2; subtype 3: n = 2), 4 distal oesophageal spasm (DES) and 1 jackhammer oesophagus, and was normal in 7 (39%) patients. In those patients with normal findings, solid swallows identified 4 (57%) additional motor disorders, including 2 OGJOO, 1 jackhammer oesophagus and 1 DES. Provocative testing using solid swallows doubled the diagnostic yield by 22% in overall patients and by 57% in patients with normal manometry using wet swallows only. Mean pressure slopes at mid-oesophagus and oesophageal diverticulism were greater in patients than healthy controls (p < 0.05 for wet swallows), as previously reported. Other metrics are summarized in the table.

**Conclusion:** While more than one-third of HREM using wet swallows were normal, provocative testing using solid increased the diagnostic yield of the procedure by more than 50% in these patients. Analysis of pressure slopes confirmed the association of propagating peristalsis with the disease.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

**P1175 PROVOCATIVE TESTING INCREASES THE DIAGNOSTIC YIELD OF HIGH RESOLUTION OESOPHAGEAL MANOMETRY IN PATIENTS WITH OESOPHAGEAL DIVERTICULA**

**F. Wuestenberg**<sup>1</sup>, C.A. Melchor,<sup>2</sup> A.M. Leroy,<sup>2</sup> G. Gourcotel<sup>2</sup>

<sup>1</sup>Hepato-gastroenterology, CHU UCL Namur, Yvoir, Belgium
<sup>2</sup>Digestive Physiology Unit, Rouen University Hospital, Rouen Cedex/France

**Contact E-mail Address:** fabien.wuestenberg@uclouvain.be

**Introduction:** The management of achalasia targets relieving the obstruction at the esophagogastric junction (EGJ) by pneumatic dilatation (PD), laparoscopic Heller myotomy (LHM) plus a fundoplication variant (Dor, Toupet, and more rarely Nissen/Nissen-Rossetti). However, effective ablation of the LES barrier can induce gastroesophageal reflux disease (GERD). Recently, new metrics to evaluate EGJ function with high resolution manometry (HRM) have been introduced, such as EGJ contractile integral (EGJ-CI). Currently there are few data investigating how achalasia treatments impact EGJ function based on these metrics.

**Aims & Methods:** We aimed to assess the EGJ-CI metric in achalasia before and after different treatments, to verify if post-operative changes in this metric correlate to symptom relief and iatrogenic GERD following surgical treatments. Methods Between 2014 and 2015, we enrolled consecutive achalasia patients. All patients underwent clinical evaluation with Eckardt and GERDQ score, as

**Conclusion:** While more than one-third of HREM using wet swallows were normal, provocative testing using solid increased the diagnostic yield of the procedure by more than 50% in these patients. Analysis of pressure slopes confirmed the association of propagating peristalsis with the disease.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

**Contact E-mail Address:** salvatore.tolone@unicampania.it

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well as upper endoscopy, barium esophagogram and HRM before and 6 months after treatment. Achalasia was classified according to the Chicago Classification V3.0. The EGJ-C1 was calculated using the distal contractile integral tool-box during three consecutive respiratory cycles. Patients underwent to pneumatic dilatation (PD), or LHM plus a Dor (LHM-D), Toupet (LHM-T) or a Nissen-Rossetti (LHM-NR) fundoplication. Ethical approval for the study was obtained.

Results: We enrolled 35 achalasia patients (14 Type I, 16 Type II and 5 Type III). Ten patients underwent PD, 11 LHM-D, 8 LHM-T and 6 LHM-NR. At baseline, none of patients had GERD manometry score, age, sex, pre-operative mean Eckardt score, GERDQ score, integral relaxation pressure (IRP) and EGJ-C1 were recorded. All Type III subjects underwent LHM-D (3) and LHM-T (2). After all the procedures, in all the patients there was a significant decrease in Eckardt score, IRP and EGJ-C1 (p < 0.01) and < 0.05, respectively). PD and LHM-NR showed higher EGJ-C1 (20.9 ± 3.2 and 23.5 ± 11.1 mmHg·cm, respectively) and IRP (12.2 ± 3.4 and 13 ± 4.5, respectively) than LHM-D and LHM-T (18.4 ± 5.9, p < 0.05 and 9.3 ± 4.1 p < 0.05 mmHg·cm, respectively for EGJ-C1; 5.2 ± 2.5 p < 0.005 and 2.3 ± 3.7 p < 0.01 mmHg·cm, respectively for IRP). Post-operative Eckardt score was lower in LHM-D and LHM-T (2.1 ± 0.5 and 2.5 ± 0.6, respectively) than PD and LHM-NR (4.2 ± 1.0, p < 0.01 and 3.7 ± 1.5, p < 0.05). Post-operative GERDQ score was significant higher in LHM-T (3.0 ± 1.7 vs. 8.2 ± 3.9, p < 0.005). Low post-operative EGJ-C1 values correlated with an increased risk of higher post-operative GERDQ score (p < 0.05, odds ratio 4.223, 95% CI 0.964–2.123).

Conclusion: All procedures performed to treat achalasia produced an adequate relief of dysphagia. LHM-D and LHM-T seemed to result in a stronger alteration of the EGJ with LHM-T resulting in an increased risk of post-operative reflux.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1177 MULTIPLE RAPID SWALLOWING IN JACKHAMMER ESOPHAGUS PATIENTS: EVIDENCE FOR ALTERED NEURAL CONTROL

A. Mauro1, S. Tolone1, E. Savarino2, N. De Bortoli2, M. Franchina3, R. Barabino3
1Department Of Pathophysiology And Transplantation; University Degli Studi Di Milano-Italy, Gastroenterology and Endoscopy Unit, Fondazione IRCCS Ca Granda, Ospedale Maggiore Policlinico, Milano/Italy
2Division of General and Bariatric Surgery, Department of Surgery, Second University of Naples, Naples/Italy
3Division of Gastroenterology, Department of Surgery, Oncology and Gastroenterology, University of Padua, Padua/Italy

Contact E-mail Address: aURELIO.MAURO88@gmail.com

Introduction: Jackhammer esophagus is a rare esophageal motility disorder. Little is known about its physiopathology; however, an excess of cholinergic drive has been suggested as an important etiologic factor.1 Multiple rapid swallowing (MRS) is an adjunctive test in order to evaluate integrity of inhibitory and excitatory neural pathways. In healthy subjects body motor inhibition is observed during MRS and a contraction stronger than single swallows (SS) occurs after MRS, the so-called peristaltic reserve (MRS/SS DCI ratio > 1). In patients with nutcracker esophagus preservation of motor inhibition during MRS has been described with traditional manometry.2 No study has evaluated peristaltic reserve and motor inhibition with high-resolution manometry (HRM) in patients with jackhammer esophagus.

Aims & Methods: To evaluate MRS in a consecutive multicenter series of 42 Jackhammer esophagus patients (18 Male; 63 years; 55–71) according to Chicago 3 classification. 18 healthy subjects (HS) (seven male; 28 years; 23–33) from a published series were used as a control group.3 All patients underwent solid state HRM with ten 5 ml SS and one to three 10 ml MRS (30 patients performed at least two MRS). Standard HRM parameters during SS were evaluated. During MRS presence/absence of motor inhibition and 4 second integrated relaxation pressure (4 sec IRP) were evaluated. After MRS distal contractile integral (DCI) was evaluated and DCI ratio between MRS and SS was measured. Mann Whitney, Wilcoxon and chi-squared tests were used when appropriate; data are shown as median-IQR range.

Results: Descriptive data in jackhammer patients are shown in table 1. Twelve patients did not have motor inhibition during at least one MRS (28% vs 5% in HS, p < 0.05). There was a trend toward a lower 4 sec IRP during MRS compared to SS (see table 1); however, values were higher than those of 4 sec IRP MRS in HS (5.1 mmHg; 2.2–11 vs 1.6 mmHg; 0.3–2, p < 0.0001). MRS DCI was significantly lower than SS DCI, interestingly 26 patients had a MRS/SS DCI ratio < 1 (62% vs 22% in HS, p < 0.0005) and it was lower than the MRS/SS DCI ratio of HS (0.8; 0.4–1.1 vs 1.9; 1.1–2, p < 0.0001) suggesting a reduction of the hypercontractile activity in the esophageal body.

HRM parameters during single and multiple rapid swallows in jackhammer patients. Median; interquartile range.

<table>
<thead>
<tr>
<th>SS</th>
<th>MRS</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4s IRP, mmHg</td>
<td>7.5; 4.9–13.1</td>
<td>5.1; 2.2–10.1</td>
</tr>
<tr>
<td>DCl, mmHg/sec.cm</td>
<td>6506; 5605–8582</td>
<td>5537; 3568–8572</td>
</tr>
<tr>
<td>CFV, cm/s</td>
<td>3.9; 2.9–5.5</td>
<td>4.4; 2.9–6.4</td>
</tr>
<tr>
<td>DL, sec</td>
<td>6.8;6.2–7.6</td>
<td>6.8;5.5–7.4</td>
</tr>
</tbody>
</table>

Conclusion: Contrary to what occurs in healthy subjects, MRS reduce DCl value compared to SS in jackhammer esophagus patients, suggesting altered neural control of peristalsis. Differently to what previously observed with traditional manometry, motor inhibition during MRS is altered in a quarter of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Roman S, Neurogastroenterol Motil. 2012 mar;24 suppl 1: 32–9;

P1178 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM) AS TREATMENT FOR FUNCTIONAL DELAYED DYSPEASIA: INITIAL ASIAN EXPERIENCE

M. Cai1, J. Xu2, P. Zhou3
1Endoscopy Center, Zhongshan Hospital, Fudan University, Shanghai/China
2Division of General and Bariatric Surgery, Department of Translational Research and New Technology in Medicine and Surgery, University of Pisa, Casinello Hospital, Pisa/Italy

Contact E-mail Address: cai.mingyan@zs-hospital.sh.cn

Introduction: Functional delayed gastric emptying is a difficult-to-treat disorder, which is often expressed clinically as nausea/vomiting, fullness/early satiety, bloating and weight loss. Gastric peroral endoscopic myotomy (G-POEM) has been regarded as a novel and minimally-invasive therapy for functional delayed gastric emptying refractory to medical therapy. We herein report our initial experience of G-POEM in an Asian population with focus on technique in addition to safety and efficacy of this promising endoscopic therapy.

Aims & Methods: The data of consecutive patients who underwent G-POEM by a single expert endoscopist from October 2015 to November 2016 was collected. Procedures were performed, similar to POEM for achalasia, including initial mucosal incision, creating a submucosal tunnel, full-thickness (pyloro)myotomy, and closure of the mucosal entry. Patient demographics, etiology, Gastroparesis Cardinal Symptoms Index (GCSI) and gastric emptying scintigraphy (GES) were recorded before and after the procedure. Treatment outcomes and procedure related adverse events were also evaluated.

Results: A total of fourteen patients with refractory functional delayed gastric emptying, including eleven post-surgical (78.6%) and three diabetic (21.4%), were enrolled. The median age was 60 (range, 26–82) years. All patients were suffering from nausea, vomiting, bloating and weight loss. They all failed medical therapy including proton pump inhibitor, metoclopramide, mosapride, or domperidone. All fourteen patients underwent G-POEM successfully (100%) with the mean procedure time of 43.71 ± 13.08 mins. Gastric emptying scintigraphy (GES) was performed in five patients with improvement of mean half empty time (191.88 ± 83.19mins vs. 91.44 ± 32.92mins), and retention at 2 hours (70.02 ± 12.68% vs. 33.48 ± 20.32%). The median hospital stay after procedure was 6 days (range, 4–10). No procedure related adverse event (0%) was observed. During a median follow-up of eight months (range, 3–17.5 months), one patient (post-surgical) had symptom recurrence after 45 days by the procedure because of stenosis related to scan formation. One of the two diabetic patients with severe diabetes and diagnosis as diabetic peripheral neuropathy showed little response to G-POEM, while the GCSI was 54 before and 29 after. The other showed initial improvement with GCSI score 22 before and 10 after the first follow-up. However, his symptoms reoccurred seven months after G-POEM and the latest GCSI score was 19. Overall GCSI after G-POEM (mean, 5.00 ± 2.57) decreased significantly comparing with the one before (mean, 22.55 ± 3.42).

Conclusion: G-POEM is a promising new endoscopic treatment option for functional delayed gastric emptying. Our initial data suggest it is safe and effective. Large studies are needed to determine safety, efficacy, long-term outcomes and determine which patient population benefits the most from this treatment option.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Roman S, Neurogastroenterol Motil. 2012 mar;24 suppl 1: 32–9;
PI179 EFFECTIVENESS OF CAP-ASSISTED DEVICE IN THE ENDOSCOPY MANAGEMENT OF FOOD BOLUS OBSTRUCTION IN THE UPPER ESOPHAGUS

M. Ooi, E. J. Young, N. Q. Nguyen
Department Of Gastroenterology And Hepatology, Royal Adelaide Hospital, Adelaide/Australia/SA

Contact E-mail Address: marieool_au@yahoo.com

Introduction: Although cap-assisted technique has been shown to be effective in removing food bolus from the upper gastrointestinal tract, there is no data on food bolus obstruction (FBO). This study aimed to assess the performance of cap-assisted technique in the management of esophageal FBO, as compared to conventional endoscopic methods.

Aims & Methods: Records of all patients who present with FBO requiring emergency endoscopic management between 2011 and 2016 were prospectively collected. The main measured outcomes were procedural success, procedural time, complications and length of hospital stay.

Results: Patients (214M:183F; 18.3±18.3 years) with FBO, 267 (84.7%) had evidence of food bolus in the esophagus on endoscopy and 48 (15.2%) patients had spontaneous passage of bolus food. Out of the 199 patients who had impacted FBO, 93 had cap-assisted technique and 106 had conventional approach, with no differences in the type and location of FBO. The success rate of cap-assisted technique (100%) was comparable to that of conventional techniques (97.2%, P=0.10). Patients who had failed extraction by conventional techniques (n=3) were successfully treated when switched to cap-assisted approach. Cap-assisted approach was associated with a shorter total procedural time (34.8±22min, P=0.006), a shorter length of hospital stay (0.95±0.36 and 1.38±1.36 days, P=0.0017) and more en-bloc removal (98% vs 22%, P<0.001). There were more complications in the conventional than the cap-assisted group (7/106 vs. 0.93; P=0.01).

Conclusion: Cap-assisted technique is 100% effective in the management of impacted FBO in the esophagus, with a significantly shorter procedural time and hospital stay. Although the findings suggest that cap-assisted technique should be the first line technique in the management esophageal FBO, further evaluation with a randomized multicenter trial is warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI180 DO THE ENDOSCOPIC FINDINGS OF GASTRITIS BRING THE FD SYMPTOMS?

Y. Shimada1, S. Sato1, K. Tomishima1, Y. Kenemitsu1, H. Tsuzura1, A. Murata1, N. Amano1, S. Sato1, T. Genda1, K. Kijima2, M. Kusano2, A. Nagahara1
1Gastroenterology And Hepatology, Juntendo University Shizuoka Hospital, Shizuoka/Japan
2Gastroenterology And Hepatology, Gamma University Hospital, Gamag/Japan

Contact E-mail Address: yshimada@juntendo.ac.jp

Introduction: Functional dyspepsia (FD) is defined that there is no evidence of organic disease which is likely to explain the symptoms. However, there was no obvious definition about “organic disease”. Therefore, during the endoscopic examination, we do not think that we can justly consider the esophageal findings like gastric erosion fulfill the exclusion criteria or not. Indeed, this issue was pointed out that there is notable inconsistencies in the exclusion criteria of FD (1). Recently, the Kyoto classification of gastritis has been published and used worldwide for the management of gastritis in Japan (2). In this classification, endoscopic findings are defined precisely. However, it is not discussed whether we can consider such findings as the “organic disease” or not. If these findings have no relationship with FD symptoms, we can diagnose patients group as FD even if they have such endoscopic findings.

Aims & Methods: The aim of this study is to explore which endoscopic findings defined in the Kyoto classification of gastritis bring FD symptoms. To assess the symptoms of patients, we employed the Modified-FSSG (frequency Severity Symptom Questionnaire) (3). Symptoms of GERD questionnaire (m-FSSG) (3), which was developed for evaluation of dyspeptic symptoms in patients. It comprised 14 symptoms and was rated on a scale of zero to four in each question. This questionnaire is useful for the Symptoms of Patients with gastroesophageal reflex disease to distinguish functional dyspepsia from non-erosive reflux disease. J. Gastroenterol Hepatol. 27: 1187-91. 2012.

Results: This study included 55 subjects in FD group and 200 subjects in Control group. The ratio was statistically lower in men than women in FD group than in Control group (43.6% vs. 61.0%, P=0.02). Atrophy (16.6% vs. 30.4%, P=0.01), spotted redness (9.1% vs. 23.0%, P=0.02), hyperplastic polypl (9.0% vs. 0%, P=0.016), were frequently seen in Control group than in FD group.

RAC (43.0% vs. 67.3%, P=0.002) were frequently seen in Control group than in FD group. Multivariate logistic regression (stepwise selection) showed that age (under 65 years old) (OR 2.427, 95%CI 0.209-8.12, p=0.01) and RAC (OR 2.123, 95%CI 0.206-8.21, p=0.012) were related to FD. None of the findings of gastritis examined were related to FD.

Conclusion: It is revealed that endoscopic gastritis is NOT related to FD symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

PI181 IMPACT OF EPIGASTRIC PAIN SYNDROME ACCOMPANYING PANCREATIC ENZYME ABNORMALITIES EXHIBITED RAPID EARLY PHASE OF GASTRIC EMPTYING AND EARLY CHRONIC Pancreatitis using ENDOSONOGRAPHY

K. Kirita1, S. Futagami1, S. Agawa1, G. Ikeda1, H. Noda1, K. Higuchi2, T. Akimoto1, Y. Maruki1, H. Yamawaki1, Y. Kodaka1, N. Ueki1, T. Kawagoe1, Y. Isiwaki1
1Department Of Gastroenterology, Nippon Medical School, Tokyo/Japan

Contact E-mail Address: kumiko-k-21@mnc.ac.jp

Introduction: There was not available data about the overlap between functional dyspepsia (FD) and pancreatic diseases.

Aims & Methods: We aimed to determine whether epigastric pain syndrome (EPS) accompanying with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by Japan Pancreas Society (JPS) using endosonography. We enrolled 99 consecutive patients presenting with typical symptoms of FD, including patients with postprandial distress syndrome (EPS grade 3) were almost equally distributed among EPS patients with pancreatic enzyme abnormalities (n=41) and EPS patients without pancreatic enzyme abnormalities (n=42) based on Rome III criteria. Gastric motility was evaluated using the ¹⁸-Ceretate breath test. Early chronic pancreatitis was detected by endosonography and graded from 0 to 7.

Results: The ratio of female patients among EPS patients (34/41) with pancreatic enzyme abnormalities was significantly (p=0.0018) higher than the ratio of female EPS patients (20/42) without it. Postprandial abdominal distention and physical component summary (PCS) scores in EPS patients with pancreatic enzyme abnormalities were significantly (P<0.001) increased compared to those in EPS patients without it. Interestingly, AU C₀ and AU C₆₀ values (24.85±1.31 and 56.11±1.25, respectively) in EPS patients with pancreatic enzyme abnormalities were also significantly (p=0.002 and p=0.001, respectively) increased compared to those (19.75±1.01 and 47.02±1.99, respectively) in EPS patients without it. Overall, 64% of EPS patients with pancreatic enzyme abnormalities were diagnosed by endosonography as having concomitant early chronic pancreatitis proposed by JPS.

Conclusion: Further studies are warranted to clarify how EPS patients with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by JPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI182 ENDOSCOPIC AUTOLOGOUS TRANSPLANTATION OF ESOPHAGEAL MUCOSA FOR TREATING THE REFRACTORY CAUSTIC ESOPHAGEAL STRicture

H. -Z. Zhao1, S. Bu1, L. Liu2, M. Wang2, X. Wang2, Z. Fan3
1 The First Affiliated Hospital with Nanjing Medical University, nanjing/China
2 Digestive Endoscopy Center, the First Affiliated Hospital of Nanjing Medical University, Nanjing/China

Contact E-mail Address: fanzhixin@njmu.edu.cn

Introduction: Caustic esophageal injury is corrosive burns of esophagus and mostly caused by ingestion of chemical caustic substances such as strong acid or alkali. The caustic esophageal stricture is refractory and patients suffered from multiple clinical. Causal ESID revealed that benign stricture would be usually caused by more than 75% mucosa loss of circumferential esophagus. Cultured skin tissue was effective for wound healing and preventing undesired fibrosis. We hypothesized that autologous esophageal mucosa transplantation might inhibit refractory fibroplasia and delay the recurrence of esophageal strictures.

Aims & Methods: A man presented with the caustic esophageal stricture (32–40 cm from the incisors), which was caused by accidental exposure of anhydrous acid (H₂SO₄). Under X-ray, routine endoscopic dilation was firstly applied to a diameter of 1.28 cm. Three days later, with the informed consent, ESID operation was utilized to dissect 570.5 cm normal esophageal mucosa at the 18–23 cm location from the incisors. Macosal defect was cured by fibrin glue after Argon plasma coagulation. Under endoscopic surveillance, the excised mucosa was transplanted to the surface of the narrowed segment and fixed with 3 titanium clips.
Conclusion: The endoscopic follow-up was planned every month. After 1 months, 18-23 cm esophageal region has healed to be normal. Within 6 months, the stricture process was excitingly delayed as expected. The patient stated his symptom was remarkably improved. Gastroscopy revealed the esophageal implanted lesion was covered with an epithelium and the lumenal surface was flat, without ulceration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1183 FUNCTIONAL DYSPESIA IS STRONGLY ASSOCIATED WITH OBSTRUCTIVE SLEEP APNEA–A CASE CONTROL STUDY

F. Di Mario1, S. Scida2, C. Miraglia2, L. Franzoni2, M. Franceschi3, A. Bertele` 4, R. N. Lui5, N. Dal Bo` 6, E. Savarino7, N. De Bortoli8, M. Rugge9, K. Sakitani9, N. Suzuki S.O.C. di Gastroenterologia, Aviano/Italy
1 Department Of Medicine And Therapeutics, Chinese University of Hong Kong, Hong Kong
2 Hong Kong Institute Of Integrative Medicine, Chinese University of Hong Kong, Hong Kong
3 Hong Kong PRC
4 Parma, Parma/Italy
5 Hong Kong PRC
6 Padova, Padova/Italy
7 Uo Gastroenterology Department Of Surgical, Oncological And Pathology, Medical School of the Padova University, Padova/Italy
8 Department Of Medicine And Therapeutics, Chinese University of Hong Kong, Hong Kong
9 Hong Kong PRC

Contact E-mail Address: rashidilui@gmail.com
Introduction: Functional dyspepsia (FD) is commonly associated with sleep disturbance, which has been attributed to comorbid anxiety, depression and bother-some gastrointestinal symptoms. However, it is unclear whether obstructive sleep apnea (OSA) is specifically associated with FD.

Aims & Methods: We aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Eposworth sleepiness scale > 10, and apnea-hypopnea index > 10/hour during polysomnography for age: 47.6 years, [SD 16.7 years]; 60 healthy age-and sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated using the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

Results: The prevalence of FD was 28.3% and 8.3% (17 vs 5, P = 0.005), and the prevalence of symptomatic gastro-oesophageal reflux disease was 18.3% and 5% (17 vs 3, P = 0.023) in the OSA group and healthy volunteer group, respectively. OSA patients had higher anxiety and depression symptom scores, worse sleep quality, and more fatigue compared with healthy volunteers. In the multivariate logistic regression analysis, age, sex and BMI were predictor variables for FD diagnosis. In the case-control study, anxiety and depression symptom scores, the HADS depression subscale score, the MFI-20 fatigue subscale score, the Pittsburgh Sleep Quality Index total score, and the Hospital Anxiety and Depression Scale total score were significantly higher in the OSA group compared to healthy volunteers. The association of FD with OSA was not different after adjusting for the above-mentioned variables.

Conclusion: To our knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1184 INDIVIDUAL ASSESSMENT OF GASTRIC ACID PRODUCTION BY MEANS OF A NON-INVASIVE TEST: RELATIONSHIPS BETWEEN MAXIMAL ACID OUTPUT AND PEPsinogen I LEVELS

F. Di Mario1, S. Scida2, C. Miraglia2, L. Franzoni2, M. Franceschi3, A. Bertele` 4, R. N. Lui5, N. Dal Bo` 6, E. Savarino7, N. De Bortoli8, M. Rugge9, K. Sakitani9, N. Suzuki 1
1 University Of Parma, Department Of Clinical And Experimental Medicine, section of Gastroenterology, Parma/Italy
2 Department Of Medicine And Surgery, University Of Parma, Italy, University Of Parma, Parma/Italy
3 Department Of Obstetrics And Gynaecology, University Of Parma Lab, Parma/Italy
4 Department Of Clinical & Experimental Medicine, Clinical Pharmacology & Digestive Pathology Unit, University Of Parma, Parma/Italy
5 Oncological Gastroenterology, Centro di Riferimento Oncologico di Aviano S.O.C. di Gastroenterologia, Aviano/Italy
6 Gastroenterological Unit, Trevixo Hospital, Trevixo/Italy
7 Uo Gastroenterology Department Of Surgical, Oncological And Gastroenterological Sciences, University Of Padova, Padova, Italy, University Of Padova, Padova/Italy
8 Division Of Gastroenterology, Department Of Internal Medicine, University Of Pisa, Pisa/Italy
9 Pathology, Medical School of the Padova University, Padova/Italy

Contact E-mail Address: chiara.miraglia@studenti.unipr.it

Introduction: The assessment of acid secretion is important in order to prescribe PPIs. The gold-standard to measure the maximal acid output (M.A.O.) is the collection of gastric after an i.m. injection of pentagastrin. However, this method is not currently used in clinical practice. Serum pepsinogen I (PGI) has been proposed as a non-invasive surrogate. Aim of this study was to compare in a group of patients with different acid related diseases serum levels of PGI and M.A.O.

Aims & Methods: We enrolled 124 patients (M = 84, mean age = 45.3 +/− 13.05 years; 68 DM patients). Of the 36 non-DM patients with severe endoscopic GERD, 30 patients (83.3%) had positive GSRS score of acid regurgitation; however, of the 40 DM patients with severe endoscopic GERD, 19 patients (47.5%) had positive GSRS score of acid regurgitation. The prevalence ratio of patients with positive GSRS score in severe endoscopic GERD was statistically lower in DM patients than in non-DM patients (p = 0.0016).

Conclusion: There is a discrepancy between the subjective symptoms and endoscopic GERD grade in DM patients. DM patients’ ability to feel acid regurgitation could decrease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Obesity is considered one of the 21st century plagues in the Western world. Although its etiology is multifactorial, eating habits represent an important factor in its development. (1). The caloric load, the proportion of its components, and its patterns have been the object of multiple studies (1–5). One of the most controversial aspects is the relationship between the frequency of meals and body weight.

Aims & Methods: The aim of the study was to determine the food rhythm (frequency and time spent in eating) in patients with morbidity obesity. Differences and similarities between men and women.

Methods: We conducted a cross-sectional study of 32,762 asymptomatic adults who underwent routine health check-ups including screening endoscopy from August 2006 to December 2011. Sarcopenia was defined as appendicular skeletal muscle mass (ASM)/body weight (%) value beyond two standard deviations below the mean for healthy young adults. Participants were categorized into four groups according to obe and sarcopenic obese: normal, obese, sarcopenic, and sarcopenic obese.

Results: In a multivariate model adjusted for age, sex, smoking status, alcohol intake, regular exercise, and metabolic variables, risk of reflux esophagitis was higher in obese (adjusted odds ratio [aOR], 1.38; 95% confidence interval [CI], 1.26–1.52), sarcopenic (aOR, 2.20; 95% CI, 1.48–3.29), and obese sarcopenic obese participants (aOR, 1.68; 95% CI, 1.39–2.03) than in normal participants. The ORs comparing sarcopenic and sarcopenic obese participants to obese participants were 1.59 (95% CI, 1.06–2.38) and 1.32 (95% CI, 1.02–1.47), respectively. In addition, the risk of reflux esophagitis according to sarcopenic and obese status was observed similarly in all subgroups that were evaluated.

Conclusion: Our findings suggest that sarcopenia, regardless of obesity, is more harmful condition for reflux esophagitis than obesity without sarcopenia.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1187 FOOD RATE (FREQUENCY AND TIME SPENT IN EATING) IN PATIENTS WITH MORBID OBESITY. DIFFERENCES AND SIMILARITIES BETWEEN MEN AND WOMEN

J. Perez De La Serna1, A. Ruiz De León1, S. Ayllón Cao1, C. Sevilla Mantilla1, A. Sánchez Pernaute2, E. Rey1, B. Merchán Gomez2

1Gastroenterology, Hospital Clínico San Carlos, Madrid/Spain 2Surgery, Hospital Clínico San Carlos, Madrid/Spain

Contact E-mail Address: ayllonsonia@hotmail.com

Introduction: We considered one of the 21st century plagues in the Western world. Although its etiology is multifactorial, eating habits represent an important factor in its development. (1). The caloric load, the proportion of its components, and its patterns have been the object of multiple studies (1–5). One of the most controversial aspects is the relationship between the frequency of meals and body weight.

Aims & Methods: The aim of the study was to determine the food rhythm (frequency and time spent in eating) in patients with morbidity obesity (MO), based on data from the pH meter was analyzed.

Results: This was a retrospective study, including 100 patients (77 women), with MO in the last 4 months. 24-H esophageal pH-monitoring studies was performed in all patients. The mean time spent at each meal showed statistically significant differences between controls and obese (17.2 min) vs. 4th quartile, p < 0.02) were strongly associated with the mucosal breaks in LC group. Moreover, VAT, ratio of VAT to SAT, and TAT were significantly higher in LC group. In the multivariate analysis, a higher VAT area (odds ratio [OR] 3.47, 95% confidence interval 1.38 to 8.73, 1st quartile vs. 4th quartile, p < 0.01) and ratio of VAT to SAT (OR 2.99, 95% CI 1.15 to 6.70, 1st quartile vs. 4th quartile, p = 0.02) were strongly associated with the mucosal breaks in LC.

Conclusion: Light drinking including even one alcoholic drink a day is associated with increased risks of esophageal, gastric and colorectal cancer. No association was observed between prediagnostic alcohol consumption and all cause mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
side. However, TAT was not significant in the multivariate analysis. Lower 24 h pH test (all levels) and 24 h coffee consumption (OR 2.50, 95% CI 1.06 to 5.86, p = 0.035) were associated with the severities of GERD.

Conclusion: Mucosal breaks in LC side of EGI were associated with visceral obesity measured by VAT, ratio of VAT to SAT, BMI and WC. Life style modification such as in left decubitus sleeping position might be emphasized in the subjects with visceral obesity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1190 A LESS COMPLICATED OESOPHAGO-GASTRIC JUNCTION IS ASSOCIATED WITH OESOPHAGEAL ACID HYPERSENSITIVITY EVEN IN HEALTHY CONTROLS

C. Lottrup1, A. L. Krarup1, P. Ejstrup2, B. P. Mcmahon1, A. M. Drewes1
1Mech-sens, Department Of Gastroenterology And Hepatology, Aalborg University Hospital, Aalborg/Denmark
2Surgery A, Aalborg University Hospital, Aalborg/Denmark

Introduction: In normal subjects, the oesophago-gastric junction (OGJ) sphincter complex maintains a tight barrier between the oesophagus and stomach acid. However, gastro-oesophageal reflux disease (GERD) caused by acidic reflux has a prevalence of up to 26% [1]. One major factor determining whether gastro-oesophageal reflux occurs and eventually generates symptoms is the competency of the OGJ, which can be studied using distensibility testing. This way, we have previously shown in patients with Barrett’s oesophagus and healthy controls that an incompetent sphincter function was associated with more frequent reflux symptoms [2]. In the same patient groups, we also found greater oesophageal acid exposure and lower mucosal baseline impedance to be associated with impaired sphincter function. The latter probably represents a proxy for mucosal damage [3]. Other factors known to increase the perception of gastro-oesophageal reflux episodes are greater acidity, larger volume, and more proximal extent of the reflux content along with impaired mucosal integrity and sensitisation (peripheral and central) [4]. All of this said no studies of our knowledge have specifically addressed the possible association between sphincter function of the OGJ and oesophageal sensitivity.

Aims & Methods: We aimed to characterize oesophageal acid sensitivity in relation to OGJ competence, hypothesizing that sensitivity increases with impaired sphincter function. Twenty-three patients with Barrett’s oesophagus (mean age: 64.2±7.7 years) and 12 healthy controls (mean age: 54.9±10.8 years) were examined. A standard upper endoscopy to locate the OGJ was followed by distensibility testing of the OGJ using the EndoFLIP probe. At a later visit, experimental oesophageal sensitivity was assessed using a multimodal stimulation probe. After placement in the oesophagus just above the OGJ, the probe allows the filling and emptying of an attached polyurethane bag with water, stimulation with electrical current, and infusion of acid. Using this probe, mechanical distension of the bag, thermal stimulation at increasing temperature, electrical stimulation, and acid perfusion with 0.1 M hydrochloric acid (a Bernstein test) were performed. All stimulations were stopped when the subject felt moderate pain, equal to seven on a 0–10 visual analogue scale validated for visceral pain. Data were analysed using multi-level, mixed-effects regression analysis in Stata 12.

Results: Oesophageal acid sensitivity increased with a more incompetent sphincter. The latter mechanism probably constitutes a reflux protective mechanism towards acid reflux.

Disclosure of Interest: B.P. McMahon: Barry P McMahon holds a minor share in Crospin Inc., Galway, Ireland who manufactures the EndoFLIP probe. All other authors have declared no conflicts of interest.

References

P1191 THE MULTICOSMAL INCOMPETENCE IN PHENOTYPES OF GASTROESOPHAGEAL REFLUX DISEASE AND FUNCTIONAL HEARTBURN

P. Ergun1, S. Kipcak1, P. Detmar3, A. Woodcock2, S. Bor1
1Gastroenterology Sec., Ege Reflux Study Group, Ege University, Izmir/Turkey
2RD Biomed Limited, Hull/United Kingdom

Contact E-mail Address: pelnergurun@yahoo.com

Introduction: Three different phenotypes of gastroesophageal reflux disease (GERD) such as erosive reflux (ERD), nonerosive reflux (NERD), esophageal hypersensitivity (EH) and functional heartburn (FH) might have different pathophysiological changes within the esophageal epithelium and the data is limited.

Aims & Methods: We aim to investigate the electrophysiological differences and diffusion characteristics as a reflection of tissue integrity using Ussing chamber system. Distal esophageal mucosal biopsies from 14 healthy controls (5 men, 40.6±11.2 years) and 62 patients with GERD (40 men, 42.9±12.3 years, n = 26 LA grade A/B, n = 8 LA grade C/D, n = 22 NERD, n = 6 EH) and 11 patients with FH were studied from November 2015 until March 2017. GERD and quality of life questionnaires, high-resolution esophageal manometry, 24 h impedance-pH monitoring, upper gastrointestinal endoscopy with esophageal biopsies were performed in all patients. Biopsies were put into the chambers to measure the transepithelial resistance (TEER), potential difference (PD) and tissue permeability via fluorescein diffusion within two hours as well as evaluation of dialted intercellular spaces with light microscopy.

Results: Esophageal biopsies of healthy volunteers (163.6±41.1 ohms) had significantly higher TEER when compared to total GERD patients (132.5±38.7 ohms). Although the TEER results of whole GERD subtype decreases compared to healthy controls, only ERD groups were significantly lower (123.3±29.8 ohms) (Table 1). There was also no significant difference in any PD and TEER results between NERD, FH and EH groups. The mucosal permeability of GERD subtypes was significantly higher than the healthy controls. The PPI-unresponsive subjects (n = 10, 94.8±36.5 pmols) were much more permeable to fluorescein compared to PPI-responsive subjects (n = 52, 56.0±32.4 pmols) within all GERD patients (p = 0.009).

Table 1

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TEER (Ohms)</th>
<th>PD (V)</th>
<th>PERMEABILITY (pmols)</th>
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<tr>
<td>Healthy Controls</td>
<td>163.6 ± 41.1</td>
<td>2.2 ± 0.9</td>
<td>43.9 ± 16.8</td>
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<td>GERD (total)</td>
<td>132.5 ± 38.7**</td>
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<td>150.6 ± 23.9</td>
<td>2.2 ± 1.0</td>
<td>71.8 ± 34.5</td>
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<td>139.6 ± 50.2</td>
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<td>65.6 ± 39.2*</td>
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<tr>
<td>ERD (total)</td>
<td>123.3 ± 29.8*</td>
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<td>58.3 ± 34.7**</td>
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<td>105.8 ± 32.7*</td>
<td>3.2 ± 1.6</td>
<td>72.6 ± 43.6</td>
</tr>
<tr>
<td>Functional Heartburn</td>
<td>145.3 ± 42.7</td>
<td>3.9 ± 4.0</td>
<td>67.0 ± 35.2</td>
</tr>
</tbody>
</table>

Conclusion: The TEER and permeability results imply that ERD and NERD groups showed a barrier disruption. However, epithelial permeability was not different in EH and FH groups. The dilatation of intercellular spaces may contribute to increased mucosal permeability in true-NERD and ERD patients. EH and FH patients might have different pathophysiology than others.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1192 PEPHISIN AND PH LEVELS OF HUMAN GIAC JUICE IN GASTROESOPHAGEAL REFLUX DISEASE SUBGROUPS AND FUNCTIONAL HEARTBURN

P. Ergun1, S. Kipcak1, P. Detmar3, A. Woodcock2, S. Bor1
1Gastroenterology Sec., Ege Reflux Study Group, Ege University, Izmir/Turkey

Contact E-mail Address: pelnergurun@yahoo.com

Introduction: The major noxious agents of gastroesophageal reflux disease (GERD) on the esophageal epithelium are gastric acid and pepsin. Nevertheless, there is no precise information about pepsin concentrations in gastric juice.

Aims & Methods: We aim to address the pepsin values and pH results among subtypes of GERD and functional heartburn. 46 patients with GERD (23 erosive reflux disease LA grade A/B (ERD-A/B), 5 ERD-C/D, 14 nonerosive reflux disease-NERD, 4 esophageal hypersensitivity-EH), 8 functional heartburn (FH) and 17 healthy controls (HC) were included into the study. Upper gastrointestinal endoscopies were performed off PPI. Patients were instructed not to aspirate the local anaesthetic solution and biopsy channel of the endoscope was dried before the suction. The gastric juices from the subjects were aspirated during endoscopy into a special beaker and their pH values were measured immediately. The specimens were analysed using the Pepsit lateral flow device (RD Biomed Ltd UK), a colorimetric assay containing two unique human monoclonal antibodies that capture and detect pepsin protein.

Results: There were no significance between pepsin levels in any GERD phenotypes, FH and healthy controls (Table 1). The pH results of patients with ERD (1.8±0.6) were significantly lower versus HC (2.6±1.5). The pH levels of the
esophageal hypersensitivity (1.5 ± 0.2) were significantly decreased when compared to HC (2.6 ± 1.6) and also true NERD (4.0 ± 2.0).

Table 1

<table>
<thead>
<tr>
<th>Pepsin (ng/ml)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERD (total)</td>
<td>514 ± 2.921</td>
</tr>
<tr>
<td>ERD-A/B</td>
<td>521 ± 0.284</td>
</tr>
<tr>
<td>ERD-C/D</td>
<td>485 ± 0.299</td>
</tr>
<tr>
<td>Total NERD</td>
<td>456 ± 0.322</td>
</tr>
<tr>
<td>True NERD</td>
<td>428 ± 1.293</td>
</tr>
<tr>
<td>EH</td>
<td>536 ± 0.432</td>
</tr>
<tr>
<td>GERD (total)</td>
<td>494 ± 0.291</td>
</tr>
<tr>
<td>FH</td>
<td>654 ± 2.300</td>
</tr>
<tr>
<td>HC</td>
<td>596 ± 2.302</td>
</tr>
</tbody>
</table>

Conclusion: Pepsin may be considered a damaging factor in pathophysiology of GERD, but we could not find any difference between GERD phenotypes and unaffected controls. NERD group had less gastric acid versus other groups but this finding needs more studies to confirm.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1193 NON INVASIVE DIAGNOSIS OF UPPER GI DISEASES IN A PRIMARY CARE SETTING: A STUDY ON 1,900 PATIENTS

F. Di Mario1, S. Cesario1, S. Grillo1, S. Landi1, G. Baldassarre2, R. Cannizzaro3, A. Marcheschi2, M. Rugge5, M.F. Roberti1

Introduction: Gastropan® is a non invasive test suggested able to perform a kind of “serological biopsy” of gastric mucosa. Aim of the study was to assess a proper diagnosis of different upper gastrointestinal (GI) diseases in a population suffering from upper GI disturbances in a primary care settings by means of a blood sample. The diagnosis of upper GI surgery, alarm symptoms. All patients underwent a blood sample for proper diagnosis of different upper gastrointestinal (GI) diseases in a population suffering from upper GI disturbances in a primary care settings by means of a blood sample.

Aims & Methods: We enrolled 1900 consecutive patients (M=769; mean age 56.4 ys, range 29-78 ys) showing upper GI troubles. Exclusion criteria: upper GI surgery, alarm symptoms. All patients underwent a blood sample for Gastropan® (BioHit Oy, Finland): pepsinogen I (PGI), pepsinogen II (PGII), gastrin-17 (G-17) and IgG against Helicobacter Pylori (Hp-IgG). The normal values: PGI: 30-120 µg/L, PGII: 2.1-15 µg/L, G-17: 1-9 pmol/L, Hp-IgG: <30 U/L. The diagnosis of Hp-related non-atrophic gastritis was made by means of the levels of PGI > 10 µg/L and Hp-IgG > 30 U/L; the diagnosis of gastroesophageal reflux disease (GERD) was made when G-17 was low: <2 pmol/L; the diagnosis of chronic atrophic gastritis (CAG) was made when PGI was <30 µg/L and G-17 > 14 pmol/L. Finally when all the four parameters were normal, the subjects were classified as normal. All patients underwent upper GI endoscopy to support the serological diagnosis, with appropriate gastric biopsy according with OGAI classification.

Results: Four hundred and eighty eight patients were classified as affected by Hp-related non-atrophic gastritis (26%); 782 patients were classified as GERD patients (41%); 547 patients were classified as normal (29%). 83 patients were classified as CAG (4%). In 96% out of the 488 patients with Hp-related non-atrophic gastritis the features was confirmed by gastric histology (OGAI 0, 1, 2); in 91% out of the 782 patients diagnosed as GERD subjects, the diagnosis was confirmed by oesophagostomy at endoscopy in 313 patients, positive Demester score in 170 out of 221 patients at 24 hours pHmetry or presence of typical symptoms (heartburn and/or regurgitation) in 547 patients. The great majority of 83 patients in which the diagnosis was CAG showed a picture of OGAI 3 (56.6%) or OGAI 4 (23%).

Conclusion: Non-invasive diagnosis of upper-GI diseases when alarm symptoms are absent seem to be promising to improve the appropriateness of endoscopy, as well as to address subjects affected by Hp infection to the cure and GERD patients to the therapy for reflux. The diagnosis of a precancerous condition like CAG before performing endoscopy could address to a better biopsy sampling.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1194 CHANGES IN ANTHROPOMETRIC AND METABOLIC PARAMETERS RELATED TO GASTROESOPHAGEAL REFLUX DISEASE IN NON-OBSE CASES

S. Yavuz1, Ö. Gür Utku1, A. Gungun2, N. Dindar Badem2, B. Ergül1, D. Öğuz1, 2Gastroenterology, Kirkkale University, Kirkkale/Turkey, 3Endocrinology, Kirkkale University, Kirkkale/Turkey, 4Biochemistry, Kirkkale University, Kirkkale/Turkey

Contact E-mail Address: ozlemgulx@yahoo.com

Introduction: Prevalence of obesity and the obesity-related diseases have been increasing in recent years(1). In the studies conducted there are views claiming that visceral fat-related central obesity causes digestion system diseases and increase in the number of gastroesophageal reflux symptoms in particular (1–6).

Aims & Methods: In this study, in order to investigate the frequency and severity of gastroesophageal reflux symptoms in non-obese (BMI < 30), it is aimed to assess the effects of insulin resistance and the changes observed in the anthropometric and biocellulare impedance measurements upon the reflux symptoms. Our study 120 BMI < 30 non- obese, gastroesophageal reflux disease (GERD) patients diagnosed according (Frequency scale for the symptoms of gastroesophageal reflux disease) and 50 BMI < 30 non-obese, non- not (GERD) diagnosed according to FSSG cases have been included. The cases included in the study concerned have been surveyed by means of the questionnaire including the demographic data and the extra esophageal reflux symptom. Serum biochemistry analyses (fasting glucose, insulin, lipid panel, uric acid, TSH, ALT) have been checked. Waist circumference has been measured. Body compositions and anthropometric measurements have been assessed through the biocellulare impedance method (TANITA).

Results: In this study a statistically significant difference (p < 0.05) has been found when GERD-diagnosed group is compared with healthy control group in regard to waist circumference, BMI; LDL, Fat, Mass, Total Body Water(TBW), obesity level, reflux score, acid reflux score and total score measurements. Fat free mass (FFM), muscle mass, bone mineral density (BMR) measurements in between the both groups have not been found statistically significant difference (p > 0.05) (Table 1). Considering the extra esophageal reflux symptoms a significant difference (p < 0.05) between the group suffering from sore throat, apnea, teeth grinding and GORH and the healthy control group has been found. Within the patients group a positive correlation between acid reflux score and BMI (r = 0.298) (p < 0.001), LDL (r = 0.387) (p < 0.001), visceral fat (r = 0.180) (p < 0.049) has been determined. A negative correlation between acid reflux score and TBW (r = 0.273) (p < 0.003) has been determined.

Table 1: Metabolic parameters and biocellulare impedings findings

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Patient Group</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=50)</td>
<td>(n=120)</td>
<td>(n=170)</td>
</tr>
<tr>
<td>Median</td>
<td>Median</td>
<td>Median</td>
</tr>
<tr>
<td>(Min.-Max.)</td>
<td>(Min.-Max.)</td>
<td>(Min.-Max.)</td>
</tr>
<tr>
<td>Glucose</td>
<td>95.00 (77-165)</td>
<td>92 (53-165)</td>
</tr>
<tr>
<td>Inulin</td>
<td>8.05 (1.90-90)</td>
<td>8.35 (3.10-108)</td>
</tr>
<tr>
<td>HDL</td>
<td>51.50 (3.10-99)</td>
<td>47.50 (3.10-99)</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>81 (33-350)</td>
<td>97 (28-404)</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>146.30 (73-222)</td>
<td>161 (19-310)</td>
</tr>
<tr>
<td>Uric Acid</td>
<td>4.05 (1.20-41)</td>
<td>4.20 (2.00-19)</td>
</tr>
<tr>
<td>Muscle Mass</td>
<td>43.80 (34.90-516)</td>
<td>43.80 (34.90-516)</td>
</tr>
<tr>
<td>TBW</td>
<td>32.50 (25.10-52.60)</td>
<td>32.50 (25.10-52.60)</td>
</tr>
<tr>
<td>BWZetke</td>
<td>58.50 (41.60-80.90)</td>
<td>52.50 (41.60-80.90)</td>
</tr>
<tr>
<td>Bone Mass</td>
<td>2.40 (1.90-3.70)</td>
<td>2.40 (1.90-4)</td>
</tr>
<tr>
<td>BMR</td>
<td>5.85 (55.9-9.138)</td>
<td>58.51 (78.12-89.966)</td>
</tr>
<tr>
<td>Metabolic Age</td>
<td>16 (6-41)</td>
<td>27 (12-66)</td>
</tr>
</tbody>
</table>

All authors have declared no conflicts of interest.

Mann Whitney U Test (Monte Carlo) • Min:Minimum • Max:Maximum

ALT: The frequency and severity of gastroesophageal reflux symptoms in the non-obese is closely related with body fat composition as those in the obese. Increase in abdominal and visceral fat composition may cause high risk of gastroesophageal reflux disease in individuals irrespective of their obesity.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P1195 PROXIMAL ESOPHAGEAL BASELINE IMPEDANCE LEVELS ARE ABLE TO DISCRIMINATE BETWEEN SCLERODERMA PATIENTS WITH AND WITHOUT ESOPHAGEAL INVOLVEMENT**

M. Della Coletta1, P. Zentilin2, E. Marabotto3, S. Tolone4, N. De Bortoli5, G. Bodini6, V. Savarino2, E. Savarino6

1Division Of Gastroenterology, Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
2Dept. Of Internal Medicine, University of Genoa, Genoa/Italy
3University of Genoa, Genoa, Italy, Genoa/Italy
4Surgery, Second University of Naples, Naples/Italy
5Division Of Gastroenterology, Department Of Internal Medicine, University of Pisa, Pisa/Italy
6Department Of Internal Medicine, IRCCS San Martino DIMI, Genoa/Italy

Contact E-mail Address: marcodellacolletta@gmail.com

**Introduction:** Esophageal baseline impedance (BI) levels have been recently proposed as a marker of mucosal integrity. Indeed, patients with non-erosive reflux disease (NERD) showed lower distal esophageal BI levels compared to healthy controls (HCs) due to the presence of abnormal distal esophageal acid exposure time (AET). On the other hand, there were no differences between patients with esophageal involvement and HCs. Esophageal involvement and hypersensitivity are two distinct phenotypes of GERD; however, they are difficult to be discriminated. Therefore, we aimed to prospectively compare BI levels between a group of NERD patients and a group of patients with esophageal involvement to assess the presence of esophageal mucosal lesion.

**Aims & Methods:** We prospectively enrolled 221 consecutive GERD patients (F 113, mean age 52.5 years; range 28–74 years) with endoscopically proved diagnosis of esophagitis, according to the L.A. classification, all symptomatic (heartburn and/or regurgitation). All patients were treated with rabeprazole 20 mg once a day for 6–8 weeks, assessing at the end of the therapy the symptoms’ modifications by means of a questionnaire. In the group of asymptomatic patients, we performed a one-year follow-up, recording the GERD relapse episodes, only on-demand antacids were permitted. All patients underwent at baseline a blood sample and after the acute course of PPI therapy.

**Results:** One hundred eighty five patients were asymptomatic after the 6–8 weeks of PPI therapy and entered in the prospective evaluation for 12 months. Nineteen subjects were lost lasting the follow-up and finally 166 patients were available for the study analysis. 72 patients experienced at least one GERD relapse episode (first group) against 94 ones free of symptoms for one year (second group). The mean values of both PG I and G-17 after the 6–8 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 164 g/L, G-17 2.9 pmol/L; after therapy: PG I 164 g/L, G-17 19 pmol/L; p < 0.001; second group: baseline PG I 98 g/L, G-17 2.9 pmol/L; after therapy: PG I 116 g/L, G-17 6.3 pmol/L; p: ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

**Conclusion:** Gastrin-17 and pepsinogen I increase after full-dose of PPI in GERD acute phase seem to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1196 GASTRIN-17 AS A NON-INVASIVE MARKER OF EARLY GERD RELAPSE: A PROSPECTIVE ONE-YEAR STUDY**

F. Di Mario1, S. Speroni1, S. Scida1, C. Miraglia2, V. Corrente1, M. Franceschi2,1, V. Savarino2, N. De Bortoli3, A. Tursi4, G. Brandimarte1, L. Franchini5, C. Scarpignato6

1Department Of Medicine And Surgery, University Of Parma, Parma, Italy, University of Parma, Parma/Italy
2Division Of Gastroenterology, Department Of Internal Medicine, University of Pisa, Pisa/Italy
3Gastroenterology Service, ASL BAT, Andria (BT), Andria/Italy
4Division Of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy, Rome/Italy
5Uo Gastroenterology Department Of Surgical, Oncological And Gastroenterological Sciences, University Of Pudova, Pudova, Italy, University of Padova, Padova/Italy
6Division Of Gastroenterology, Department Of Internal Medicine, University Of Pisa, Pisa/Italy

Contact E-mail Address: francesco.dimario@unipr.it

**Introduction:** Gastroesophageal reflux disease (GERD), is characterized by frequent relapses after withdrawal of therapy and no prognostic markers of relapse are available to predict the outcome of the patients. Gastrin-17 (G-17) has been proposed as a non-invasive marker of reflux disease as well as a good marker of response to the therapy. Pepsinogen I (PG I) and Gastrin-17 (G-17) are claimed to increase in a statistically significant manner after proton pump inhibitors (PPIs) therapy. Aim of the study was to assess the prognostic value of G-17 and PG I in determining GERD patients more prone to develop an early reflux relapse in a prospective open study.

**Aims & Methods:** We prospectively enrolled 221 consecutive GERD patients (F 113, mean age 52.5 years; range 28–74 years) with endoscopically proved diagnosis of esophagitis, according to the L.A. classification, all symptomatic (heartburn and/or regurgitation). All patients were treated with rabeprazole 20 mg once a day for 6–8 weeks, assessing at the end of the therapy the symptoms’ modifications by means of a questionnaire. In the group of asymptomatic patients, we performed a one-year follow-up, recording the GERD relapse episodes, only on-demand antacids were permitted. All patients underwent at baseline a blood sample and after the acute course of PPI therapy.

**Results:** One hundred eighty five patients were asymptomatic after the 6–8 weeks of PPI therapy and entered in the prospective evaluation for 12 months. Nineteen subjects were lost lasting the follow-up and finally 166 patients were available for the study analysis. 72 patients experienced at least one GERD relapse episode (first group) against 94 ones free of symptoms for one year (second group). The mean values of both PG I and G-17 after the 6–8 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 164 g/L, G-17 2.9 pmol/L; after therapy: PG I 164 g/L, G-17 19 pmol/L; p < 0.001; second group: baseline PG I 98 g/L, G-17 2.9 pmol/L; after therapy: PG I 116 g/L, G-17 6.3 pmol/L; p: ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

**Conclusion:** Gastrin-17 and pepsinogen I increase after full-dose of PPI in GERD acute phase seem to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1197 THE DIAGNOSTIC VALUE OF ESOPHAGEAL MUCOSAL AND BASELINE IMPEDANCE MEASUREMENTS IN PATIENTS WITH GASTROESOPHAGEAL REFUX DISEASE**

M. Kipca1, P. Ergun2, S. Boz3

1Gastroenterology Sec., Ege Reflex Study Group, Ege University, Izmir/Turkey
2Gastroenterology Sec., AlfaWasserman, Abbvie

Contact E-mail Address: kipcaksezgi@gmail.com

**Introduction:** Various biomarkers have been studied to evaluate the integrity of esophageal epithelium in distinguishing phenotypes of gastroesophageal reflex disease (GERD). Baseline impedance (BI) measurement is likely to be one of these and can be measured during the 24-hour ambulatory intra-esophageal impedance-pH study. Mucosal impedance (MI) measurement is a technique that has been introduced in recent years and is a practical method that can be applied during endoscopy, but the validation studies are insufficient. BI & MI measured with the same regular impedance catheter and data from 118 patients with different reflux phenotypes and controls were evaluated.

**Aims & Methods:** Patients were divided into five groups: mild (ERD A-B, n = 31), severe erosive esophagitis (ERD C-D, n = 11), non-erosive reflux disease (NERD, n = 26), functional heartburn-esophageal hypersensitivity (FH-EH, n = 17), healthy controls. High resolution manometry, 24-h MI-PH, upper gastrointestinal endoscopy were performed. BI values were taken at the sleeping period at night where reflux and swallowing did not occur. MI measured during endoscopy, a regular impedance-pH catheter passed through the biopsy

**References**

channel of the scope. Distal two rings were contacted to the distal and proximal parts of the esophagus respectively 20–25 cm. MMS Omega ambulatory recorder and Greenfield (6 imp, 1 pH) impedance catheter were used.

**Results:** MI can differentiate ERD from non-erosive groups but do not have a diagnostic value to discriminate NERD from FH-EH or controls. However, BI might be a better tool to discriminate NERD from controls. This implies that the esophageal epithelial resistance is impaired in this particular group compared to controls.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1198 ENDOSCOPIC-HISTOPATHOLOGICAL ESOPHAGEAL FINDINGS IN ATROPHIC BODY GASTRITIS PATIENTS WITH GASTRO-ESOPHAGEAL REFLUX SYMPTOMS**

M. Carabotti1, G. Esposito1, E. Lahner2, E. Plozzi2, G. Galli3, G. Ranazzi1, E. Di Giulio4, B. Annibale2

1University Sapienza, Rome/Italy
2Department Of Medical-surgical Sciences And Translational Medicine, Sant’Andrea Hospital, University Sapienza, Rome/Italy
3Medical-surgical Department Of Clinical Sciences And Translational Medicine, Sant’Andrea Hospital, School of Medicine, University Sapienza, Rome/Italy

**Contact E-mail Address:** mcarabotti@yahoo.it

**Introduction:** Atrophic body gastritis (ABG) is characterized by loss of oxyntic glands with consequent reduced acid secretion, hypergastrinemia and, in a later stage, pernicious anemia (PA). Up to 40% of ABG patients complain of dyspepsia. Despite hypochlorhydria, in 21% of autoimmune gastritis (AG) patients stage, pernicious anemia (PA). Up to 40% of ABG patients complain of dyspepsia. Despite hypochlorhydria, in 21% of autoimmune gastritis (AG) patients

**Results:** MI can differentiate ERD from non-erosive groups but do not have a diagnostic value to discriminate NERD from FH-EH or controls. However, BI might be a better tool to discriminate NERD from controls. This implies that the esophageal epithelial resistance is impaired in this particular group compared to controls.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1199 CLINICAL PRESENTATION RISK FACTORS AND ENDOSCOPICAL FEATURES IN GERD AND Dyspeptic Subjects on a Sample of 2300 People in a Primary Care Setting**

F. Di Mario1, T.B. Tene Fokam2, S. Landi2, S. Cesarino3, S. Grillo2, S. Scida4, C. Miraglia4, E. Savarino1, N. De Bortoli1, L. Franzoni5, G. Grandé6, C. Scarpignato5

1University Of Parma, Department of Clinical and Experimental Medicine, Section of Gastroenterology, Parma/Italy
2Department Of Medicine And Surgery, University of Parma, Parma/Italy
3Division Of Gastroenterology, Oncology And Gastroenterology, University of Padua, Padua/Italy
4Division Of Gastroenterology, Department Of Internal Medicine, University Of Pisa, Pisa/Italy
5AOU Modena, Gastroenterology and Digestive Endoscopy Unit, Modena/Italy

**Contact E-mail Address:** francesco.dimario@unipr.it

**Introduction:** Gastroesophageal reflux disease (GERD) is considered a multifactorial disease characterized by the presence of both typical and extra-oesophageal symptoms, as well as related risks factors, such as smoking habits. In primary care setting, dyspeptic symptoms could overlap GERD symptoms, being the differential diagnosis sometimes difficult, almost because when we performed in such patients upper-gastrointestinal (GI) endoscopy, a picture of esophagitis is observed in no more than 30–40% of the subjects. Aim of the study was to search in a primary care settings possible differences in clinical presentations in a group of patients with GERD. The majority of GERD patients

**Aims & Methods:** One thousand and six hundred consecutive dyspeptic patients (M = 766; mean age = 51.5 years; range = 27–79 yr) were enrolled in the study, according with presence of upper-GI troubles like epigastric pain, fullness, nausea/vomiting but not heartburn or regurgitation. All patients showed a negative upper-GI endoscopy and were helicobacter pylori (H.p.) negative (Urea Breath Test and HpSA). Patients with history of peptic ulcer, neoplasms or upper-GI surgery were excluded. Seven hundred and one patients showing heartburn and/or regurgitation, a picture of esophagitis according with LA classification or a positive DeMeester score (> 14) at 24 hours pHmetry were enrolled in GERD group. By using a questionnaire, we collected data on both alcohol and smoking habits.

**Results:** No differences were found for sex and age between the two groups (M = 766; mean age = 51.5 years; range = 27–79 yr). All patients showed a negative upper-GI endoscopy and were helicobacter pylori (H.p.) negative (Urea Breath Test and HpSA). Patients with history of peptic ulcer, neoplasms or upper-GI surgery were excluded. Seven hundred and one patients showing heartburn and/or regurgitation, a picture of esophagitis according with LA classification or a positive DeMeester score (> 14) at 24 hours pHmetry were enrolled in GERD group. By using a questionnaire, we collected data on both alcohol and smoking habits.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1200 REAL-WORLD RESPONSE OF PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE TO EMPIRICAL TREATMENT WITH PROTON PUMP INHIBITORS: A MULTICENTER, PROSPECTIVE, OBSERVATIONAL STUDY IN CHINA**

B. Lu1, L. Zhang2, J. Wang3, B. Wang4, X. Zou5, J. Qian6, D. Chen7, X. Wang8, B. Wu1, D. Zou1

1Gastroenterology, The First Affiliated Hospital of Zhejiang Chinese Medical University, Hangzhou/China
2Gastroenterology, Changhai Hospital, Shanghai/China
3Gastroenterology, China-Japan Union Hospital of Jilin University, Changchun/China
4Gastroenterology, Peking University hospital, Beijing/China
5Gastroenterology, Daping Hospital, Third Military Medical University, Chongqing/China
6Gastroenterology, Qinghai University Affiliated Hospital, Xining/China
7Gastroenterology, The Third Affiliated Hospital, Sun Yat-sen University, Guangzhou/China

**Contact E-mail Address:** zdw_2017@outlook.com

**Introduction:** In China, 13.6% of gastrointestinal outpatients suffer from gastroesophageal reflux disease (GERD), among which only 36.9% undergo endoscopy [1]. For patients with symptoms of GERD, empirical proton pump inhibitor (PPI) treatment is recommended as a diagnostic test of GERD and as a therapeutic trial to control symptoms by Chinese GERD consensus guidelines [2].

**Results:** MI can differentiate ERD from non-erosive groups but do not have a diagnostic value to discriminate NERD from FH-EH or controls. However, BI might be a better tool to discriminate NERD from controls. This implies that the esophageal epithelial resistance is impaired in this particular group compared to controls.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Currently, there are no real-world data assessing the efficacy of short-term empirical treatment with PPIs in GERD patients in China.

**Aims & Methods:** This was a multicenter, prospective, observational study carried out in a real-world setting. The primary objective was to determine the overall responder rate in patients with typical GERD symptoms after 4 weeks of empirically treated PPIs. Patients were enrolled at 18 centers across China. The study included patients with pathological reflux and symptom frequency were recorded. Data were collected at baseline, 2 weeks and 4 weeks after initiating PPI treatment. Results from the full analysis set (FAS) are presented.

**Results:** A total of 1,000 patients from 10 centers were screened for this study, of which 987 met the inclusion criteria and were included in the FAS. The mean age was 45.2 ± 11.6 years. The mean body mass index was 23.4 ± 3.3 kg/m², and 50.3% of the patients were male. The mean duration of GERD was 6.8 ± 2.6 years, with a mean baseline GERD-Q score for the week before screening of 10.5 ± 1.9. During the 4 weeks' treatment, the proportion of patients receiving at least 19 days PPI was 99.5%. Esomeprazole was the most frequently received PPI (57.1% of patients). Other PPIs (ranitidine, lansoprazole, pantoprazole, and omeprazole) were received by 50.1% of patients and 7.2% of the patients sequentially received ≥2 PPIs in the duration of the study. A total of 787 (79.7%) patients either completed the 4-week PPI treatment or withdrew after response, of which the responder rate was 74.0% [95% CI 70.7%–77.0%] (Table 1). Among the 818 patients who completed 2 weeks' treatment, the responder rate was 57.0% [95% CI 53.5%–60.4%]. The overall median time to response was 13 days [95% CI 12–15]. Over the study duration, patients' adherence was increased significantly in stimulation group than sham group (stimulation 9.00 vs. sham 5.0 days [95% CI 4.2–9.8]). During the 4 weeks' treatment, the proportion of patients with a GERD-Q score ≥8 reduced from 100% at baseline to 29.5% and 17.4% at 2 and 4 weeks, respectively.

**Conclusion:** In Chinese clinical practice, short-term PPI empirical treatment effectively improves symptom control in GERD patients and gains a satisfactory overall responder rate.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1202 SYSTEMATIC REVIEW AND META-ANALYSIS OF OUTCOMES AFTER LAPAROSCOPIC ANTI-REFLUX SURGERY RELATED TO OBESITY**
T. Abdelrahman1, A. Latif2, D. Chan3, N. Patel4, C. Brown5, W. Lewis1, T. Havid1, X. Escotet6
1General Surgery, University Hospital of Wales, Cardiff/United Kingdom
2General Surgery, Royal Glamorgan Hospital, Llantrisant/United Kingdom

**Introduction:** Laparoscopic Anti-Reflux Surgery (LARS) is an established alternative treatment to pharmacological therapy for patients with Gastro Esophageal Reflux Disease (GERD), yet its safety and efficacy in obese patients is controversial. A systematic review and meta-analysis was performed to compare LARS-related to obesity.

**Aims & Methods:** The primary outcome measure was the relative incidence of recurrent reflux related to BMI. Secondary outcome measures were relative incidence rates in the form of endoscopic dilatation or surgery, conversion to open surgery, and early return to theatre. Embase, MEDLINE and the Cochrane Library (January 1970 to November 2016) were searched for studies reporting clinical outcomes of LARS in patient cohorts stratified by Body Mass Index (BMI). Data was grouped according to BMI, <30 kg/m² (non-obese) and ≥30 kg/m² (obese). Results were pooled in meta-analyses as Odds Ratios (OR).

**Results:** Eleven eligible observational studies comparing LARS in non-obese (n = 1620) and obese (n = 1632) patients were identified. The relative incidence of reflux was significantly lower in the non-obese cohort (OR 0.34, 95% CI 0.19 to 0.60, p < 0.001), however no significant differences were observed in rates of operative morbidity (OR 0.87, 0.65 to 1.18, p = 0.38), redo surgery (OR 1.08, 0.68 to 1.72, p = 0.73), endoscopic dilatation (OR 1.06, 0.49 to 2.33, p = 0.88), conversion to open surgery (OR 1.17, 0.55 to 2.48, p = 0.68), or early return to theatre (OR 0.77, 0.44 to 1.37, p = 0.38).

**Conclusion:** LARS can be performed safely in obese patients, but risks higher for BMI ≥30. Patients should be aware that obesity may adversely affect LARS outcome and careful consideration be given in the consent process inherent within the optimal management of GORD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1203 GASTROESOPHAGEAL REFLUX DISEASE REFRACTORY TO PROTON PUMP INHIBITOR THERAPY. INCOMPLETE ACID INHIBITION OR DIAGNOSTIC ERROR?**
Gastroenterology, Hospital Clinico San Carlos, Madrid/Spain

**Contact E-mail Address:** jercasserna@gmail.com

**Introduction:** The use of PPIs represents the main treatment in gastroesophageal reflux disease (GERD), having demonstrated its effectiveness both in the control of inflammation and symptomatology. However, between 10-20% of patients present persistent symptoms or lesions despite the treatment.

**Aims & Methods:** The aim of the study was to assess the presence of acid reflux in patients submitted to our department with the diagnosis of refractory GERD, due to low or no response to PPIs. This was a retrospective study including 190 patients (55 men, 135 women) referred to our service with the diagnosis of GERD from January 2008 to December 2015. Based on the diagnostic criteria, two groups were made. Group 1: included 63 patients (33.2%) diagnosed of GERD due to typical symptomatology and at least one positive complementary test (24 H pH monitoring). All of them underwent a 24-H pHmetry study with a dual channel, esophageal and gastric, on-PPI treatment. In 17 patients the pHmetry was completed with multichannel intraluminal impedance study (15 cases) or Bilitec (2 cases). Group 2: included 127 patients (66.8%) who had been diagnosed of GERD only on the basis of typical symptoms; all of them underwent esophageal double channel 24-H pHmetry off-PPI. All of the studies (24-hour pH monitoring or multichannel intraluminal impedance-pH studies) (MARK III, Delta and Digitrapper pH-Z, Synectics, Gyen, Medtronic) were performed according to standard technique.

**Results:** Pathological reflux was present in 91 patients (47.9%), 24 from group 1 and 67 from group 2. Pathological acid reflux was therefore ruled out as a cause of symptoms in 52.1% of all cases studied: 60 patients (47.2%) from group 2 and 39 patients (61.9%) from group 1. In addition, out of the 24 patients with pathological reflux in group 1 (true refractory patients), 9 had an incomplete response, with a percentage of time with pH < 4 less than 7.5% (mild reflux), which probably was not the cause of the symptomatology.

**Conclusion:** Proton pump inhibitors (PPIs) are the drugs of choice in the treatment of GERD. However, its efficacy may be compromised for a variety of reasons including: non-compliance, bioavailability, episodes of nocturnal acid break-through, poor gastric emptying, etc. In most of the patients referred for implantation or stimulation-related adverse effects were reported in the two-month follow-up.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
studying with the diagnosis of refractory reflux to PPIs, this diagnosis had only been made on an individual basis for non-compatible symptoms. When this diagnosis is exclusively clinical, about half (47.2%) of the patients with persistent symptoms on double doses of PPIs, considered as GERD patients refractory to PPIs, have an incorrect diagnosis (patients do not have pathological reflux). More than half of the patients (61.9%) who have a diagnosis of GERD confirmed by complementary tests that do not respond to treatment with PPIs, acid reflux is not the cause of their symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1204 LOW-FODMAP DIET RESULTED EFFECTIVE IN REDUCING SYMPTOM PERCEPTION IN PATIENTS WITH FUNCTIONAL HEARTBURN
I. Martinucci1, E. Savarino2, G. Guidi1, K. Nardi1, S. Tolen1, M. Frazzoni3, L. Fuccio3, L. Frazzoni3, M. Bellini4, V. Savarino5, S. Marchi1, N. De Bortoli1
1Gastroenterology Unit, University of Pisa, Pisa/Italy
2Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
3Surgery, Second University of Naples, Naples/Italy
4Digestive Pathophysiology Unit, Baggiovara Hospital, Modena/Italy
5Depretim Of Medical And Surgical Sciences, S. Orosa-Malpighi University Hospital, Bologna/Italy
6Dept Internal Medicine, Universita di Genova, Genova/Italy
Contact E-mail Address: martinucci.irene@gmail.com

Introduction: Recently, low-FODMAP diet has been proposed as a potential treatment in patients with irritable bowel syndrome (IBS) given its high efficacy in symptoms relief. Recent data showed that IBS frequently overlap with functional heartburn (FH) and functional dyspepsia.

Aims & Methods: The aim of this study was to evaluate the efficacy of low-FODMAP diet in reducing heartburn in patients with FH and no pathophysiological evidence of gastroesophageal reflux (GERD) compared to patients with non-erosive reflux disease (NERD). As secondary aim we investigated the reduction of lower gastrointestinal symptoms in both groups. We enrolled patients with heartburn and negative upper endoscopy who were scheduled for upper endoscopy to confirm the diagnosis of reflux disease.

Methods: The inclusion criteria were: (1) mean age 50.9 yrs; mean BMI 23.9. All patients showed symptom improvement into the study. NERD group was composed of 13 patients (6 female; mean age 58 yrs, IQR 51–67) and 197 females (median age 64 yrs, IQR 57–70) were included with a median follow-up of 8.2 years (IQR 5.3–10.3). High-grade dysplasia (HGD) was detected in 35 males versus 4 females. EAC in 12 males versus 5 females. The total number of patients with neoplastic progression was 56 (8%), which was twice as high among males compared to females (HR 1.90, 95% CI 0.92–3.92). Especially the risk of HGD was higher in males than in females (HR 3.34, 95% CI 1.17–9.50). The ratio HGD/EAC in males was 2.92, in females 0.80. Apparently in females proportionally more EAC was identified compared to males. Though these data might suggest accelerated neoplastic progression rates in females, time to event was significantly shorter for males in HGD (AR 0.45, 95% CI 0.22–0.94). There was no difference for overall neoplastic progression (AR 0.59, 95% CI 0.16–2.06). Stage distribution is shown in Table 1, females tend to have a higher stage of neoplastic progression than males.

Conclusion: The risk of HGD and overall neoplastic progression and acceleration rate of HGD development is higher in male BE patients compared to females. On the other hand descriptive statistics show proportionally more EAC in females as well as an advanced stage of EAC at diagnosis. Further research into the differential aspects of neoplastic progression in BE between men and women, may have future consequences for gender specific guideline recommendations, including the timing of follow-up.

Table 1: Stage distribution of neoplastic progression between males and females

<table>
<thead>
<tr>
<th>Stage 0</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>40</td>
<td>85%</td>
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<tr>
<td>Female</td>
<td>5</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.

P1205 SINGLE SESSION FOCAL CRYOBALLOON ABLATION THERAPY IS SAFE AND EFFECTIVE IN THE TREATMENT OF DYSPLAGIA BARRETT’S ESOPHAGUS
S. Van Munster1, A. Overwater2, J.J. G.h.m. Bergman1, B.L.a.m. Weusten4
1Dept. Of Gastroenterology And Hepatology, Academic Medical Center, Amsterdam, Amsterdam/Netherlands
2Dept. Of Gastroenterology And Hepatology, University Medical Center Utrecht, Utrecht/Netherlands
Contact E-mail Address: s.vanmunster@ama.uva.nl

Introduction: Given its proven safety and efficacy, RadioFrequency Ablation (RFA) is the preferred ablation modality for dysplastic Barrett’s Esophagus (BE). However, RFA is associated with significant drawbacks, such as the need for large controller units, multiple deployment steps and capital investment. Transluminal CryoBalloon Ablation (FCBA; C2 Therapeutics Inc. Redwood City, CA, USA) is another ablation method based on the application of extreme cold—has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. FCBA comprises a handheld, through-the-scope system with a conformable balloon that is simultaneously inflated and cooled using nitrous oxide, resulting in ice patches of approximately 2mm2 on the targeted mucosa. Previous studies applying FCBA to limited areas of BE (1 to 2 small BE islands per patient) have shown promising results. Data on

Table 1: Stage distribution of neoplastic progression between males and females

<table>
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<th>Stage 2</th>
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<tbody>
<tr>
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<td>85%</td>
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</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>56%</td>
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</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100%</td>
<td>7</td>
</tr>
</tbody>
</table>

Disclosure of Interest: All authors have declared no conflicts of interest.
efficacy and safety of FCBA in the treatment of larger BE segments, however, are lacking. Therefore we aimed to assess the safety and efficacy of a single treatment with FCBA for dysplastic BE.

Aims & Methods: Patients were seen between March and December 2016 at two tertiary referral centers in the Netherlands. Patients with a BE ≥6 cm in length and with a confirmed diagnosis of low-grade (LGD) or high-grade dysplasia (HGD) or after endoscopic resection for visible lesions, were included. Exclusion criteria included previous focal ablation therapy and strictures. At baseline, all visible BE was treated with side by side ablations of 10 seconds, including the circumferential treatment of the gastroesophageal junction (GEJ). Pain scores were assessed directly post-treatment and at days 2 and 7. Follow-up endoscopy with biopsy and photo documentation was scheduled after 3 months. Primary outcomes included dysplasia regression rate and incidence of esophageal stricture or other adverse events.

Results: We enrolled 20 patients with dysplastic BE (85% male, mean age 66 ±8 years), with a median BE length of 2.0 cm (IQR 0–4; 1–3) and with a baseline diagnosis of LGD (10; 50%), HGD (1; 5%), or mucosal adenocarcinoma (9; 45%). Ten (50%) had undergone endoscopic resection of a visible lesion before cryoballoon and 8 (40%) had undergone previous circumferential RFA. During a median ablation time of 16 minutes (IQR 11–19), all BE, including circumferential ablation of GEJ was successfully ablated in all patients. No adverse events occurred, and median pain directly post-treatment was 4 out of 10 (IQR 0–5), whereas this was 1 (IQR 0–2) and 0 (IQR 0–1) at days 2 and 7. At the 3-month follow-up endoscopy, median endoscopic regression of initial BE was found to be 95% (IQR 93–96%), this included 3 patients (15%) with a complete 100% regression. All biopsies confirmed squamous regeneration without evidence for subsquamous BE. No significant esophageal strictures or other complications were noted.

Conclusion: Our multicenter, prospective trial shows that a single treatment with Focal Cryoballoon ablation therapy is safe, well-tolerated and effective for eradication of dysplastic BE.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Baseline characteristics and maximum pain scores

<table>
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<th>RFA</th>
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<tr>
<td>N</td>
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</tr>
<tr>
<td>P-value</td>
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1A. Baseline characteristics

<table>
<thead>
<tr>
<th></th>
<th>FCBA</th>
<th>RFA</th>
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<tbody>
<tr>
<td>Male gender, n (%)</td>
<td>17 (85%)</td>
<td>29 (83%)</td>
</tr>
<tr>
<td>Age, mean (SD) years</td>
<td>65 (±8)</td>
<td>66 (±8)</td>
</tr>
<tr>
<td>Worst diagnosis</td>
<td>LGD, n</td>
<td>HGDN</td>
</tr>
<tr>
<td></td>
<td>10 (50%)</td>
<td>5 (5%)</td>
</tr>
<tr>
<td>CRD durability at 12 months</td>
<td>100%</td>
<td>88.5%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>93.6%</td>
</tr>
<tr>
<td>CRD durability at 36 months</td>
<td>100%</td>
<td>95.5%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>CRIM durability</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>CRD and CRIM</td>
<td>100%</td>
<td>100%</td>
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<td></td>
<td>100%</td>
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Conclusion: In this multicenter, non-randomized, open prospective cohort study, patients reported less post-procedural pain and dysphagia after FCBA as compared with RFA and, moreover, FCBA patients used less analgesics. Although a randomized trial should provide definitive evidence for differences in post-procedural tolerability, our results strongly suggest a significantly different post-procedural course, thus favoring FCBA over RFA.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1207 CRYOBALLOON ABLATION OF DYSPLASTIC BARRETT'S ESOPHAGUS CAUSES SHORTER DURATION AND LESS SEVERE POST-PROCEDURAL PAIN AS COMPARED TO RADIOFREQUENCY ABLATION

S. Van Munster1, A. Overwater2, J.J. G.h.m. Bergman3, B.L.a.m. Weusten2

1Gastroenterology And Hepatology, AMC, Amsterdam/Netherlands
2Dpt. Of Gastroenterology And Hepatology, University Medical Center Utrecht, Utrecht/Netherlands
3Dpt. Of Gastroenterology And Hepatology, University Medical Center Utrecht, Utrecht/Netherlands

Contact Email Address: s.vanmarstner@ama.uma.nl

Introduction: Radiofrequency ablation (RFA) is safe and effective for eradication of dysplastic Barrett’s Esophagus (BE), but may be associated with significant post-procedural pain. As an alternative, cryobalization using the Focal Cryoballoon Ablation system (FCBA) has recently been developed, which ablates BE by freezing it using nitrous oxide. Early uncontrolled studies suggest comparable safety and efficacy of FCBA and RFA in eradicating dysplastic BE. Therefore we evaluated endpoints like pain may play a determining role in selecting the best treatment modality. In contrast to heat-based ablation, FCBA preserves the extracellular matrix which might be associated with less pain while maintaining sufficient depth of ablation. In this study, we aimed to compare post-procedural pain between focal RFA and FCBA.

Aims & Methods: Between January 2016 and March 2017 all patients undergoing focal ablation therapy of BE, either with RFA or FCBA performed in two tertiary referral centers in the Netherlands, were approached to complete a digital diary. A short questionnaire was daily sent to patients for 14 days post-treatment, to assess (1) odynophagia, (2) chest pain in rest (both were assessed using VAS score ranging from 0 to 10), (3) dysphagia (assessed using a score ranging from 0 to 4) and (4) use of analgesics. Primary outcome included maximum VAS score (maximum VAS score for either item 1 or 2), secondary outcomes included area under the curves (AUCs) for all items assessed, maximum reported VAS score at any time, time to VAS 0 and analgesics use. According to national guidelines, all visible BE was ablated, including circumferential treatment of the gastro-esophageal junction (GEJ). In a standardized way, all patients were advised to use paracetamol (up to 4 times 500 mg daily) as necessary with additional ibuprofen, if needed.

Results: Fifty-five patients were included (35 with focal RFA; 20 with FCBA) and median BE length was similar for the two groups (FCBA: 2022, RFA: 2016, p=0.72). All other baseline characteristics were similarly comparable for both groups (table 1A). Maximum VAS score was lower after FCBA compared with RFA at all days, reaching statistical significance at 13/14 days (table 1B). All AUC curves were significantly smaller after FCBA compared to RFA; for maximum VAS score (12.3 vs. 26.7, p<0.01), for odynophagia (11.6 vs. 26.7, p<0.01), for pain in rest (7.8 vs. 20.5, p<0.01), for use of analgesics (0.9 vs 3.1, p<0.01) and for dysphagia (2.6 vs 8.2, p<0.01). The maximum median VAS score reported on any of the 14 days was 2 (IQR 0–4) after FCBA and 4 (IQR 3–7) after RFA (p<0.01). After 4 (IQR 1–10) days, half of the FCBA patients reported a pain score of 0, whereas this was 13 (IQR 10–15) days for RFA.

Conclusion: In this multicenter, non-randomized, open prospective cohort study, patients reported less post-procedural pain and dysphagia after FCBA as compared with RFA and, moreover, FCBA patients used less analgesics. Although a randomized trial should provide definitive evidence for differences in post-procedural tolerability, our results strongly suggest a significantly different post-procedural course, thus favoring FCBA over RFA.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1208 COMPARATIVE OUTCOMES OF RADIOFREQUENCY ABLATION FOR BARRETT’S OESOPHAGUS WITH DIFFERENT BASELINE HISTOLOGY

W.K. Tan1, A. Rattan2, T. Nuckchpeedly1, B. Alias1, V. Sujendran2, M. Di Pietro1

1MRC Cancer Unit, University of Cambridge, Cambridge/United Kingdom
2Department Of Gastroenterology, Addenbrookes Hospital, Cambridge/United Kingdom

Contact Email Address: wekkeitzhan@gmail.com

Introduction: Radiofrequency ablation (RFA) with endoscopic mucosal resection is recommended for Barrett’s Oesophagus (BO) related neoplasia. In this study, we evaluated RFA treatment outcomes for BO stratified according to baseline histology, i.e. low-grade dysplasia (LGD), high-grade dysplasia (HGD) and intramucosal carcinoma (IMC). We retrospectively reviewed the treatment outcomes of patients with dysplastic BO between January 2007–2017. Patients received 3-monthly RFA until endoscopic and histologic remissions were achieved. Outcomes measured were: 1) complete remission of dysplasia (CRD) and intestinal metaplasia (CRIM), 2) stricture rate, and 3) durability of CRD and CRIM. Patients on active treatment protocol were excluded.

Results: We identified 113 patients who completed RFA treatment (21 LGD, 46 HGD and 46 IMC). There were no significant difference between the groups in the age, gender, circumferential and maximum length of BO, and stricture rate. CRD and CRIM were achieved in 94.7% and 78.8% of patients, respectively. When stratified according to baseline histology, there was no significant difference in CRD rate among LGD (95.2%), HGD (95.7%) and IMC (93.5%) (p=0.89). Similarly, there was no significant difference in CRIM rate among LGD (71.4%), HGD (76.1%) and IMC (84.8%) (p=0.31). CRD durability at 12 and 36 months (n=107) were 99.0% and 97.0%, respectively. CRIM durability (n=89) at 12 and 36 months were 98.5% and 92.7%, respectively. When stratified according to baseline histology, CRD durability at 12 and 36 months for LGD and IMC were 100% at both time points, and 97.7% and 93.6% for HGD, respectively (log rank p=0.31). CRIM durability at 12 and 36 months for LGD, HGD and IMC were 100%, 96.4%, 100%, and 88.5%, 95.5%, respectively (log rank p=0.66).

Conclusion: The treatment outcomes for BO were similar in patients with different baseline histology. Our results showed that once CRD and CRIM were achieved, these were durable over time.

Disclosure of Interest: All authors have declared no conflicts of interest.
After neoadjuvant CT-RT, 23 patients had CR, while 65 had partial response. The discordance between biopsy sample (BS) and EMR specimen was in cases of HG, as well as cytologists’ inter and intra-observatory variability.

Aims & Methods: This was a retrospective study including a prospective histological relecture (BS and specimen) in two expert centers. The inclusion criteria were BE with HG and on pre-operative biopsies resected by the endoscopist. The discordance rates from other centers were collected and re-examined by our cytologists.

The BS discordant with EMR specimens were recorded in a numeric file (Teleslide) and a second lecture was carried out by 2 experts and 2 fellows (1 of each per center). Five diagnoses were considered: no metaplasia (no BE), metaplasia without dysplasia, LGD, HG, Adenocarcinoma. Concordance statistical tests were performed to assess the variability between BS and EMR specimens among the clinical CR and recurrence/relapse rate was significant higher in patients who had CR compared to those who had no CR (p=0.0014, p<0.001 and p=0.004 respectively).

The accuracy of leukocyte expression of PDL1 and CD8- lymphocyte rate was 0.76 (p=0.001), 0.81 (p=0.0001) and 0.75 (p=0.0001), respectively. Within the CR group, all patients with high infiltration of CD4+ T cell recurred relapsed while only the 38.9% of those with low CD4+ T cell infiltration did the same (p=0.058).

Conclusion: In our group of patients, CD4+ and CD8+ lymphocyte rate and PDL-1 lymphocyte expression were predictive of clinical complete response after neoadjuvant chemoradiotherapy. Advanced squamous cell carcinoma of the thoracic oesophagus with adequate accuracy. Moreover, high infiltration level of CD4+ T cell was associated to recurrence/relapse. These preliminary observations might be used to plan further study aimed to identify reliable predictors of response to chemoradiation in oesophageal SCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P2112 CLINICAL VALUE OF LONG NONCODING RNA TRPM2-AS EXPRESSION IN ESOPHAGEAL SQUAMOUS CELL CARCINOMA

X. Hu1, G. Yao2, L. Lin1

1Gastroenterology, The First Affiliated Hospital of Nanjing Medical University, Nanjing, China
2Thoracic Surgery, The First Affiliated Hospital of Nanjing Medical University, Nanjing, China

Contact E-mail Address: xuhairong0519@163.com

Introduction: Esophageal squamous cell cancer (ESCC) is one of the most common carcinomas worldwide. Long noncoding RNAs (lncRNAs) have been reported to play an important role in the progression of many diseases especially in cancers. Recent studies reveal that lncRNA TRPM2-AS is upregulated in many cancers and may function in tumor development and metastasis. This study aimed to explore the expression of TRPM2-AS and its clinical value in ESCC.

Aims & Methods: To investigate the function of long noncoding RNA TRPM2-AS in ESCC, RT-qPCR was used to monitor the expression level of long noncoding RNA TRPM2-AS in 50 paired ESCC tissues and ESCC cell lines. Moreover, the associations between long non-coding RNA TRPM2-AS expression level and clinical characteristics was analyzed. In addition, over-expression and RNA interference (RNAi) approaches were used to study the biological functions of TRPM2-AS in ESCC cells. Cell growth and proliferation was
analyzed by cell counting kit-8 assay. Cell cycle and apoptosis were evaluated by flow cytometric analysis. Protein levels of p53 were determined by western blot analysis. Differences between groups were tested for significance using Student’s-t test (two-tailed).

Results: ESCC tissues examined in this study showed an obvious increment in TRPM2-AS expression when compared to normal samples. Moreover, TRPM2-AS expression was positively correlated to lymph nodes metastasis, TNM stage and clinical stage. And upregulated TRPM2-AS expression was turned to be remarkably correlated with the shorter survival of ESCC patients which could act as an independent predictor for both overall survival time and disease-free survival. In addition, overexpression of TRPM2-AS could promote the proliferation and inhibit the apoptosis of ESCC cells, while knockdown of TRPM2-AS had a reverse function. Furthermore, downregulation of TRPM2-AS enhanced the expression of p53 in ESCC cells.

Conclusion: This study suggested that long non-coding RNA TRPM2-AS could be a potential oncogene of ESCC. TRPM2-AS expression might be served as another potential therapeutic target and prognostic biomarker. In addition, our study further confirms that TRPM2-AS contributes a lot to inhibiting apoptosis of ESCC by regulating the expressions of p53 in vitro, which may be a potential oncogene and therapeutic target for ESCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P2123 ROLE OF CD80 EXPRESSION IN INFLAMMATORY-RELATED ESOPHAGEAL CARCINOGENESIS

M. Scarpa,1 I. D’Olimo, M. Fassan,2 A. Porzionato,3 A. Kotsafti,1 V. Mach,1 R. Alfieri1, M. Rugge1, I. Castagliuolo2, C. Castoro1, M. Scarpa1

1Esophageal And Digestive Tract Surgical Unit, Regional Centre For Esophageal Disease, Veneto Institute of Oncology (IOV-IRCCS.), Padova/Italy
2Ospedale Civile di Venezia, Venezia/Italy
3University of Padova, Padova/Italy
4Dept. Of Molecular Medicine, University of Padova Dept. of Molecular Medicine, Padova/Italy
5Istituto Oncologico Veneto Endoscopy Unit, Padova/Italy
6Pathology, Medical School of the Padova University, Padova/Italy
7Molecular Medicine, University of Padova, Padova/Italy

Contact E-mail Address: melania.scarpa@iov.veneto.it

Introduction: Esophageal adenocarcinoma (EAC) is an increasingly common cancer with a poor prognosis. EAC is the final step of a pathway starting with esophageal reflux disease, intestinal metaplasia, and dysplasia. The expression of costimulatory molecules such as CD80 and CD86 in the esophageal cancer tissue is significantly lower than in the normal mucosa of healthy patients. This may be one of the mechanisms of immune escape of cancer cells in the esophageal cancer. In EAC, CD8 and NK cytolytic activity within the tumor was associated to nodal metastasis and CD107 expression might be used as a marker of it. Moreover, nuclear p53 overexpression within the tumor might be used as a marker of early recurrence after esophagectomy and then used to plan follow-up strategies. No apparent relation between progression and mismatch repair gene mutation was observed.

Disclosure of Interest: All authors have declared no conflicts of interest.

P2125 PHARMACOLOGICAL INHIBITION OF MONOCARBOXYLATE TRANSPORTER 1 INDUCES APOPTOSIS IN METASTATIC ESOPHAGEAL ADENOCARCINOMA CELLS

E. Chuca Lapuente1, A. Valero Torres2, S. Arechavaleta Tabuenca3, M.A. Sáenz2, M.A. García-González2, C. Hörndler6, A. Lanas4, E. Piazzuelo1

1Hospital Clínico Universitario Lozano Blesa, Zaragoza/Spain
2Hospital de Salud Carlos III, Madrid/Spain
3University of Zaragoza, Zaragoza/Spain
4Hospital Universitario Miguel Servet, Zaragoza/Spain
5CIBER Enfermedades Hepáticas y Digestivas, Madrid/Spain

Contact E-mail Address: educa@ugr.es

Introduction: Altered glucose metabolism has become a recognised feature of tumor cells, which is characterized by an increased glucose uptake and preferential dependence on glycolysis for energy production. As a consequence, cancer cells produce large amounts of lactate, which is pumped out the cytosol by monocarboxylate transporters (MCTs), mainly MCT 1 and 4. MCT inhibition has previously been related to increased apoptosis in cancer cells, but this aspect has not been investigated in esophageal adenocarcinoma (EAC) yet.

Aims & Methods: We aimed to evaluate the expression of MCT 1 and 4 in human samples of ESCC and to evaluate in vitro the effect of extracellular glucose concentration and pharmacological inhibition of MCT 1 on lactate concentration, intracellular pH (pHi), and cell apoptosis. MCT1 and MCT4 expression was assessed by immunohistochemistry in human samples of ESCC. For the in vitro study, two different EAC cell lines were used: OE33 (ECACC), established from an EAC of the lower esophagus and OACM5.1C (ECACC), obtained from a lymph node metastasis derived from an EAC. MCT1 and MCT4 expression and localization were assessed by immunohistochemistry in both cell lines. The MCT1 selective inhibitor AZD3965 (0, 10 and 100 nM) was added to the culture medium under a normoxic and hypoxic atmosphere in standard (11 mM) or high (30 mM) glucose content in the media. Apoptosis was determined by flow cytometry (Annexin V-FITC and propidium iodide). Intracellular lactate concentration and pharmacological inhibition of MCT1 on lactate concentration, intracellular pH (pHi), and cell apoptosis. MCT1 and MCT4 expression was assessed by immunohistochemistry in human samples of ESCC.
increased apoptosis of OACM5.1C cells whereas did not affect apoptosis of OE3.cell.

Conclusion: Metastatic and non-metastatic esophageal adenocarcinoma cells exhibit different glycolytic metabolism and response to pharmacological inhibition of MCT1, which increases apoptosis in metastatic cells. Further preclinical studies will be necessary in order to define the potential of blocking lactate transporters on the treatment of metastatic EAC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1216 THE PREDICTIVE FACTOR FOR PERFORATION IN ESOPHAGEAL ESD
Y. Nagami, M. Ominami, M. Shiho, S. Fukunaga, F. Tanaka, N. Kamata, H. Yamagami, T. Tanigawa, T. Watanabe, Y. Fujisawa
Graduate School Of Medicine, Osaka City University Graduate School of Medicine
Dept. of Gastroenterology, Osaka/Japan

Contact E-mail Address: yasuki1975@hotmail.com

Introduction: Although endoscopic submucosal dissection (ESD) is accepted as a standard treatment for early stage esophageal neoplasia, esophageal perforation is sometimes experienced as main adverse event. Esophageal perforation causes mediastinal emphysema, mediastinitis, and pneumothorax, those sometimes require emergency surgery.

Aims & Methods: We evaluated the predictive factors for esophageal perforation in patients who received esophageal ESD. This was a retrospective observational study in a single institution. Between May 2004 and March 2016, 549 consecutive patients with 927 lesions were treated with ESD. Endoscopic resection for esophageal squamous-cell carcinoma who have submucosal invasion, lymphovascular involvement, or vertical-margin invasion can become an effective organ-preserving strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1217 SAFETY AND EFFICACY OF CHEMORADIOThERApY AFTER ENDOSCOPIC RESECTION IN PATIENTS WITH SUPERFICIAL ESOPHAGEAL SQUAMOUS-CELL CARCINOMA
T. Wada, C. Katada1, M. Azuma1, T. Yano1, S. Tanabe2, W. Koizumi1, H. Moriya1, K. Yamashita1, S. Komori2, K. Ishida3
1Gastroenterology, Kitasato University, School of Medicine, Sagamihara/Japan
2Research And Development Center For New Frontier, Kitasato University School of Medicine, Sagamihara/Japan
3Department Of General Surgery, Kitasato University School of Medicine, Sagamihara/Japan
4Department Of Radiology And Radiation Oncology, Kitasato University, School of Medicine, Sagamihara/Japan

Contact E-mail Address: t.wada@kitasato-u.ac.jp

Introduction: According to the current Japanese guidelines for the diagnosis and treatment of oesophageal cancer, endoscopic resection is indicated for pathological T1a (epithelium/lamina propria mucosae) and relatively indicated for T1a(muscularis mucosae) and T1b(a tumor invading the submucosa to a depth of 200µm or less). In accordance with the guidelines, we have actively performed endoscopic resection for esophageal squamous-cell carcinoma(ESCC). Evidence of submucosal or lymphovascular invasion on histopathological examination of the resected specimens was considered to indicate non-curative resection, chemoradiotherapy (CRT) was additionally administered, taking into account the risk of lymph-node metastasis. In principle, CRT comprised 2 courses of cisplatin plus 5-fluorouracil. Patients who were 76 years or older or who had mild renal dysfunction received 2 courses of nedaplatin plus 5-fluorouracil. The median tumor diameter was 22 mm (6 to 55) in the CRT group and 25 (3 to 47) in the follow-up group (p = 0.63). The tumor invades the MM in 9 patients, the SM1 in 3, and the submucosa to a depth more than 200µm (SM2) in 29 in the CRT group and the LPM in 3 patients, the MM in 16, the SM1 in 18, and the SM2 in 15 in the follow-up group (p = 0.91). Lymphatic invasion was positive in 21 patients in the CRT group and 12 in the follow-up group (p < 0.01). Vascular invasion was positive in 27 patients in the CRT group and 29 in the follow-up group (p = 0.32). Involvement of the submucosal or lymphovascular invasion at the vertical margin was found in 7 patients in the CRT group and 9 in the follow-up group (p = 0.09). CRT-related grade 3 or 4 early adverse events were leukopenia 24.3% (10 patients), neutropenia 29.3% (12), febrile neutropenia 4.9% (2), diarrhea 2.4% (1), anorexia 17.0% (7). In the CRT group, 38 of 40 patients received chemotherapy as scheduled. Treatment was discontinued in the second course in 2 patients, and 7 required dose reduction. Lymph-node metastasis were found in 2 patients in the CRT group and 7 in the follow-up group (p = 0.15). In 2 patients with recurrence in the CRT group, lymph-node metastases were seen in the irradiated field 46 and 49 months after treatment, respectively. 1 patient in the CRT group and 3 in the follow-up group died of esophageal cancer (p = 0.43). The overall survival (OS) rate at 2 years was 83.4% in the CRT group and 93.8% in the follow-up group (p = 0.02). Disease-free survival (DFS) at 2 years was 97.1% in the CRT group and 83.4% in the follow-up group (p = 0.02).

Conclusion: Additional CRT after endoscopic resection in patients with esophageal squamous-cell carcinoma who have submucosal invasion, lymphovascular involvement, or vertical-margin invasion can become an effective organ-preserving strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

M. Omae, M. Konradsson, P. Elbe, M. Nilsson, M. Lindblad, I. Rouvelas, F. Bälldaque-Silva
Gastroceptrum, Karolinska University Hospital, Stockholm/Sweden

Contact E-mail Address: masami.nego@gifer.or.jp

Introduction: Endoscopic submucosal dissection (ESD) was developed in Japan for the resection of large gastrointestinal neoplasia and has progressively been adopted in the West. Currently, early Barrett’s neoplasia is mainly treated with endoscopic mucosal resection (EMR) and/or radiofrequency ablation, being the ESD in this context not well-established yet. Our aim is to evaluate the safety, efficacy and outcome of ESD for the treatment of early Barrett’s neoplasia.

Aims & Methods: Fifty consecutive ESD cases of early Barrett neoplasia were performed in 42 patients in our center between 2011 and 2016. All ESDs were performed under full narcosis after multidisciplinary team conference discussion and patient’s consent. The primary endpoint was the rate of en bloc resection. Secondary endpoints included rate of R0 and curative resection, a comparison of pre- and post- ESD histology, procedure time, procedure-related adverse events, and rate of remission at follow-up. This study was approved by the Stockholm Regional Ethical Committee.

Results: Mean age was 67 years (range 46-84), being 74 male and 72% long segment BE. The mean specimen size was 52 mm (range 16-150 mm). ESD resections included <25%, 25-50%, 50-75% and 75-100% of the lumen circumference in 4/31/12/3 of cases, respectively. En bloc, R0 and curative resection were obtained in 96% (48/50), 80% (40/50) and 70% (35/50) of cases, respectively. The pre- and post- ESD histology corresponded to low-grade dysplasia and Barrett’s neoplasia (n = 36) and adenocarcinoma (n = 15). One case of LGD was upstaged to intramucosal AC, 10/30 cases of HGD were upstaged to adenocarcinoma. In 8/13 cases of AC, there was submucosal invasion on the ESD specimen. In 14/50 of the ESD specimens there was multifocal neoplasia. The mean procedure time was 120 minutes. There were 2 perforations (4%) treated endoscopically and 2 (4.0%) postoperative bleedings treated conservatively. Six patients (12%) developed esophageal strictures that were managed endoscopically. The 30 days mortality rate was 1%. The 15 non-curative cases were followed-up, 2 patients went through ESD, 1 received chemoradiotherapy and 2 patients are under surveillence. In the 10 esophagectomy cases, 4 patients had AC in the remnant Barrett’s esophagus and 2 patients had lymph node metastasis. Complete remission was
P1219 ENDOSCOPIC EVALUATION AT THE PRIMARY SITE OF CTI ESOPHAGEAL CANCER AFTER PROTON BEAM THERAPY AND CLINICAL RESULTS OF SALVAGE ENDOSCOPIC THERAPY FOR LOCAL RECURRENCE

D. Sato1, A. Motej1, T. Kojima1, Bando H., K. Horii1, T. Kodata1, V. Yoda1, K. Umeda1, H. Ikekatsu1, S. Zenda2, Y. Oono1, H. Ikematsu1, S. Zenda4, T. Akimoto4, T. Yano1, J. F. D. Oliveira1, E. Q. Mendonc¸ a1, B. D. C. Martins1, F. Kawaguti1

Contact E-mail Address: dsato@ncc.go.jp

Introduction: Recently, it has been reported that proton beam therapy (PBT) is the effective treatment for patients with esophageal squamous cell carcinoma (ESCC). However, there are few reports regarding the endoscopic evaluation of efficacy after PBT at the primary site.

Aims & Methods: The aim of this study is to clarify the adequate endoscopic evaluation of eradication of ESCC after PBT, and the clinical results of salvage endoscopic treatment for local recurrence. Patients with clinical T1 ESCC, and who had been treated with PBT between April 2013 and June 2016 at the National Cancer Center Hospital East were investigated. The total dose of PBT was 60 Gray- Equivalent (GyE). The efficacy of PBT at the primary site was evaluated with endoscopy, and the definition of complete response (CR) was used according to the same criteria as that of conventional chemoradiotherapy (CRT) as follows; disappearance of tumor lesion and ulcer, and absence of cancer cells with biopsy was verified. The endoscopic evaluation was performed within 2 months after the completion of PBT, and we repeatedly evaluated every month if the lesion did not achieve CR. The treatment for local recurrence after PBT was chosen based on the depth of the tumor as follows; endoscopic resection (ER) for cT1a, endophagotomy or photodynamic therapy (PDT) for cTb or deeper depending on patient’s condition.

Results: Among 44 patients who underwent PBT, the median age was 70 years (range, 41–79). The number of patients with clinical stage I was 23 (52%), and stage II, III, and IV were 16 (36%), 2 (5%), and 3 (7%), respectively. All patients underwent concurrent systemic chemotherapy. 43 patients (98%) could achieve a CR at the primary site and only one patient (2%) did not show a CR (non-CR) at the primary site. The median time to CR from the start of PBT was 85 days (range, 70–554 days) and 6 months or longer period was required to confirm CR due to the remaining PBT induced erosion or ulceration in 7 patients (15%). One patients whose primary site did not reach to CR showed prolonged ulceration for 385 days. Of 43 patients (14%) developed local recurrence, 18 patients (42%) developed local recurrence at the primary site, 8 patients (19%) at the regional lymph node recurrence or distant metastasis, and the median time to local recurrence from CR was 257 days (range, 111–722 days). The endoscopic finding of local recurrence was resembling submucosal tumors (SMT) in 3 and flat lesion in other 3 tumors. All 6 patients with local recurrence were indicated for endoscopic treatment (ER-R, PDT-2). No complications, such as major bleeding or perforation, were observed. And, 6 patients (100%) were alive without any recurrence at the median follow up period of 11 months (range, 1–32 months).

Conclusion: Longer period was required to confirm CR after PBT with chemotherapy in some cases comparing with the historical reports of that of conventional CRT. Careful closed endoscopic follow-up according to the way of conventional CRT enabled early detection of local recurrence and preferable local control with salvage endoscopic treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1220 CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL ESCOPHAGEAL NEOPLASMS OF PATIENTS WITH HEAD AND NECK CANCER


Contact E-mail Address: kipennach@yahoomail.com

Introduction: Surveillance programs of gastrointestinal endoscopy for detection of a second primary cancer in patients with head and neck squamous cell carcinoma (HNSCC) are very important since it can detect synchronous or metachronous esophageal squamous cell carcinoma (ESCC) in up to 15%–25%. The detection of ESCC in an early phase has paramount importance, since superficial lesions are amenable to endoscopic submucosal dissection (ESD).

Aims & Methods: The aim of this study was to investigate the clinical outcomes of ESD of superficial esophageal neoplasms (SENs) of HNSCC patients in an oncologic tertiary center. From 2010 to 2016, 3280 endoscopies were performed in patients with HNSCC and in 1887 chromoscopy with Lugol and NBI were performed. A total of 26 SENs, submitted to ESD, in 25 patients were retrospectively analyzed.

Results: The median tumor size was 4.37 cm (±1.83). The en bloc resection were 100% and free margin (R0) were 92.3%. The two patients with positive margins had a depressed component in endoscopic evaluation. Recurrence occurred in 11.5% (2/18) and one of these recurrences was successfully treated.

The circumferential extension, number of patients and stenosis rate

<table>
<thead>
<tr>
<th>Circumferential Extension</th>
<th>Number of lesions</th>
<th>Stenosis Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>25–49%</td>
<td>1 (2.56%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>50–74%</td>
<td>14 (53.84%)</td>
<td>5 (35.71%)</td>
</tr>
<tr>
<td>75–99%</td>
<td>6 (23.07%)</td>
<td>2 (33.33%)</td>
</tr>
<tr>
<td>100%</td>
<td>5 (19.23%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>75–100%</td>
<td>11 (42.30%)</td>
<td>7 (63.68%)</td>
</tr>
</tbody>
</table>

The circumference of the resection ≥75% was significantly associated with post-operative stricture (OR = 3.5; P < 0.05). The average number of endoscopic dilations for resolution of stenosis was 9.16 (±7.62). No procedure-related mortality occurred. Follow-up data median was 11 months.

Conclusion: Endoscopic surveillance of HNSCC is very important for SENs that are amenable to ESD. Observations of these lesions are feasible and safe with acceptable complication rates despite the high rates of stenosis in recurrences >75% of the circumference.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
enrolled. At baseline, side-by-side ablations of 10 seconds were performed on all patients treated every 3–4 months. Endoscopic enucleation of EUS-confirmed edemas was confirmed. Outcomes: safety and tolerability (11-point visual analog scale (VAS) for pain), complete response (CR) rates (absence of MGIN or worse in biopsies), neoplastic progression and adverse events.

Results: Patients (63 MGIN, 17 HGIN) with a median lesion of 2 (IQR 2–3) cm in length. Of these, 79 patients (99%) were successfully treated; 3 developed superficial, self-limited mucosal laceraions upon balloon inflation and 2 of them were successfully re-ablated 3 months later. A median of 5 (IQR 3–7) ablations were performed per patient, in a median ablation time of 8 (IQR 5–10) minutes. As of April 2017, 77/79 (97%) patients completed a 3-month follow-up endoscopy and 69/77 (89%) exhibited endoscopic and histologic CR. Eight patients had residual USL and were again treated with side-by-side balloon inflation the following 2 months later and all patients had complete healing. To date, 4 patients have undergone a 12 month endoscopy and all continue to exhibit endoscopic and histologic CR. No significant strictures have been noted on follow-up. Three patients developed fever shortly after treatment which was treated with aspirin. Post-procedure median VAS was 1 (IQR 0–2) at day 2, and 0 (IQR 0–0) at days 7 and 30.

Conclusion: Preliminary results of our multicenter open prospective cohort study suggest that FCBA of ESCN is safe, well-tolerated, and highly effective in inducing endoscopic and histologic remission. Longer term (12 month) follow-up data is pending.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1222 THE ENDOSCOPIC TREATMENT STRATEGY FOR SUPERFICIAL ESOPHAGEAL CANCER

N. Yamaguchi
Department Of Gastroenterology And Hepatology, Nagasaki University Hospital, Nagasaki-Japan

Contact E-mail Address: naoyuki3435@nagasaki-u.ac.jp

Introduction: Endoscopic submucosal dissection (ESD) allows en bloc removal of endoscopic submucosal dissection (ESD) allows en bloc removal of superficial esophageal squamous cell carcinoma (SCC). However, endoscopic submucosal dissection often occurs after ESD when the lesion involves more than three-fourth of the circumference of the lumen. Frequent balloon dilatation via endoscopy is required in such situation, thus causing health economic problem. In this study, we investigated the clinical outcomes, and prevention of post-ESD stenosis.

Aims & Methods: A total of 667 cases in 516 consecutive patients were treated by ESD in our department from April 2006 to December 2016. We investigated the following 2 items. 1. Clinical outcomes and complications. 2. Usefulness of oral steroid administration, the local steroids injection, endoscopic transmural injection of tissue-engineered autologous oral mucosal epithelial cell sheets, or steroid oral + local injection combination therapy for the prevention of post-ESD stenosis.

Results: 1. Clinical outcomes: En bloc resection rate was 99.8% and en bloc curative resection rate was 90.0%. The rate of perforation, post-ESD bleeding, and post-ESD stenosis was 0.2%, 0.8% and 6.1%, respectively. 2. Prevention of post-ESD stenosis: (1) Oral steroid vs Steroid injection vs Cell sheet transplantation: In oral steroid group, the stenosis rate was 14.9%, and the ulcer healing period was 59.5 days. In steroid injection group, the stenosis rate was 12.9%, and the ulcer healing period was 66.0 days. In cell sheet transplantation group, the stenosis rate was 40.0% and the ulcer healing period was 36.0 days. There was no significant difference between these 3 therapies, and these therapies prevent post-ESD stenosis to significant extent. However, ulcer healing period of the cell sheet transplantation group was significantly shorter compared with the other 2 therapies. (2) The usefulness of SH oral + local injection combination therapy. We investigated limitations of steroid administration, and cell sheet transplantation in order to prevent stenosis. The followings were 4 factors (more than 9/10 of circumferential resection, more than 5 cm of longitudinal resection, cervical esophagus, post history of chemo-radiation therapy or endoscopic resection) were the stenosis prevention treatment-resistant factors. Therefore, we examined the stenosis rate according to the number of these 4 factors. The stenosis rate of the cases which have 0 or 1 factor, the case which has more than 2 factors in semicircular cases, and the complete circular cases is 4.9%, 30.3%, and 44.8%, respectively. The stenosis rate of the cases which have more than 2 factors and complete circular cases are significantly higher, compared to the cases which have 0 or 1 factor. As a result, the cases which have more than 2 factors and complete circular cases were regarded as the stenosis prevention treatment-resistant cases. In contrast, in SH oral + local injection combination therapy, the stenosis rate of the cases which have more than 2 factors and complete circular cases is 17.5% and 14.3%, respectively. Taken together, the stenosis rate of SH oral + local injection combination therapy is significantly lower, compared to the other 3 therapies.

Conclusion: Eophageal ESD achieved high en bloc resection rate and curability with low rates of complications. Oral steroid, steroid injection therapy and cell sheet transplantation may be effective treatment strategy for reducing post-ESD stenosis. However, the above-mentioned 4 factors are the stenosis prevention treatment-resistant factors in these 3 therapy cases. Furthermore, the cases which have more than 2 factors and complete circular cases were regarded as the stenosis prevention treatment-resistant cases. SH oral + local injection combination therapy is very useful for prevention of post-ESD stenosis and a potential treatment-resistant factor.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
showed the greatest disparities, was evaluated. We retrospectively evaluated long-term follow-up study for oncological outcomes about follow-up duration, locoregional recurrence, distant recurrence. Results: The median follow-up duration is 40.36 ± 20.74 months in all patients. Based on the previous our study, we divided patients two groups who underwent operations after 29 days. Of the 302 patients, 133 were in Group A (≥29days) and 169 in Group B (>29days). There were more differences between two groups about ASA score, ER Specimen size, intra-op. transfusion, POD/1 Hemovac® discharge, Maximal postoperative CRP in the clinicopathological characteristics. Like previous study our study the operative time, EBL, tumor size was significantly longer and more in group A compared with group B. There were totally 7 patients locoregional and distance recurrence during follow-up period. There were no differences in oncological outcomes between two groups.

Oncological recurrence for Each Group

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Group A (≥29days)</th>
<th>Group B (&gt;29days)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/u duration (months, mean ±SD)</td>
<td>37.02 ± 20.54</td>
<td>44.18 ± 19.49</td>
<td>0.002</td>
</tr>
<tr>
<td>Locoregional recurrence (n, %)</td>
<td>1 (0.8)</td>
<td>1 (0.6)</td>
<td>0.757</td>
</tr>
<tr>
<td>Distant recurrence (n, %)</td>
<td>3 (2.3)</td>
<td>2 (1.2)</td>
<td></td>
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</table>

Conclusion: Based on long-term follow-up data, surgery time after ER in EGC does not affect oncological outcome. These long-term follow-up results suggest that adding surgery at about 1 month after ER is optimal for better surgical outcomes without affecting the oncological outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1225 THE POINT TO DISTINGUISH EARLY GASTRIC CANCER FROM DEPRESSION TYPE OF GASTRIC INTESTINAL METAPLASIA

T. Wakatsuki, S. Furutachi, H. Yamashita
Department Of Gastroenterology & Hepatology, Okayama Medical Center, Okayama/Japan

Contact E-mail Address: twakatsuki0530@yahoo.co.jp

Introduction: This study discusses two endoscopic findings which improve the accuracy of the diagnosis of early gastric cancers (EGC). After successful Helicobacter pylori eradication, we often observe multiple reddish depressed lesions and “patchy redness” or “acute redness” in the gastric mucosa. Even though most are intestinal metaplasia (IM), EGC is found among these lesions. A light blue crust (LBC) has been a highly accurate sign of the IM. There are, now, additional two endoscopic findings that should improve the accuracy of diagnosis of EGC. They are 1) “intraperithelial microinvation (IEMI)”, and 2) “Over flow”, Over flow is that the endoscopic finding that the structure of the depressed lesion spreads to the outside of the depression.

Aims & Methods: The aim of this study is to clarify the usefulness of two endoscopic findings in order to detect the EGC in the group thought to be an IM. This study discusses two endoscopic findings which improve the diagnosis of EGC. They are 1) "intraepithelial microinvation (IEMI)" and 2) "overflow" with GI malignancy and age (75.2% vs 72.2%, p = 0.05), male gender (72.2% vs 40.8%, p = 0.01), GI symptoms (61.1% vs 11.7%, p < 0.01), weight loss (61.1% vs 5.8%, p < 0.01), need for hospitalization (88.9% vs 49.5%, p < 0.01), iron serum level and transferrin saturation (97.1 ± 10.1 mg/L vs 30.4 ± 18.9 mg/L, p < 0.01, and 6.1 ± 4.4% vs 9.2 ± 6.3%, p < 0.03, respectively). At logistic regression analysis only weight loss (p < 0.01), GI symptoms (p < 0.01), transferrin saturation (p < 0.01) and need for hospitalization (p < 0.01) showed a significant association with the diagnosis of GI malignancy. Transferrin saturation showed a weak discriminative capacity (AUC = 0.67, p = 0.01) however, values of transferrin saturation ≤11% had a sensitivity of 94.4% and a negative predictive value of 97.1% for GI malignancy (CI 95% 92.3%–98.7%).

Conclusion: In patients with IMA the diagnosed with the diagnosis of GI malignancy is established in a significant percentage of patients and patients with GI symptoms, weight loss or with need for hospitalization should be given priority in the performance of endoscopic examinations. Transferrin saturation may help the early detection of GI malignancy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1226 IRON DEFICIENCY ANAEMIA—ARE THERE ANY PREDICTORS OF GASTROINTESTINAL MALIGNANCY?

S. Xavier1, J. Magalhães2, J. Cotta3
1Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga/Portugal 2Gastroenterology Department, Hospital da Senhora do Oliveira, Guimarães, Braga, Portugal 3Pt Government Associate Laboratory, 4 ICVS/38’s, Braga/Guimaraes/Portugal

Contact E-mail Address: smaxavier@gmail.com

Introduction: Iron deficiency anemia (IDA) may be the only sign of gastrointestinal (GI) malignancy. The identification of predictive factors of GI malignancy in patients with IDA could help the physician to establish patients' priority to endoscopic assessment, contributing to an earlier diagnosis.

Aims & Methods: Retrospective study of 344 patients submitted to endoscopic assessment for IDA. Included adult patients with IDA and excluded patients with GI or extra-GI bleeding, total gastrectomy, exclusively vegetarian diet or insufficient medical records.

Results: Included 121 patients with mean age of 68.5 ± 17.0 years and 54.5% females. GI malignancy was identified in 14.9% of patients (gastric in 12, colonic in 6 patients). A statistically significant association was found between the presence of GI malignancy and age (72.2% vs 40.8%, p = 0.01), male gender (77.2% vs 40.8%, p = 0.01), GI symptoms (61.1% vs 11.7%, p < 0.01), weight loss (61.1% vs 5.8%, p < 0.01), need for hospitalization (88.9% vs 49.5%, p < 0.01) and transferrin saturation (97.1 ± 10.1 mg/L vs 30.4 ± 18.9 mg/L, p < 0.01). At logistic regression analysis only weight loss (p < 0.01), GI symptoms (p < 0.01), transferrin saturation (p < 0.01) and need for hospitalization (p < 0.01) showed a significant association with the diagnosis of GI malignancy. Transferrin saturation showed a weak discriminative capacity (AUC = 0.67, p = 0.01) however, values of transferrin saturation ≤11% had a sensitivity of 94.4% and a negative predictive value of 97.1% for GI malignancy (CI 95% 92.3%–98.7%).

Conclusion: In patients with IDA the diagnosis of GI malignancy is established in a significant percentage of patients and patients with GI symptoms, weight loss or with need for hospitalization should be given priority in the performance of endoscopic examinations. Transferrin saturation may help the early detection of GI malignancy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

the TTT and the non-TTT group were 1.5% and 0%, respectively. There was a significant difference in early detection rate between the TTT and the non-TTT group (Fishers exact test, P = 0.046).

Conclusion: This clinical trial clearly showed that the systematic intensive TTT course is useful for improving early detection rate of gastric cancer in clinical practice at our hospital. In high-volume endoscopy center, (NCTD2035785).

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1228 COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION AND SURGERY FOR THE TREATMENT OF EARLY GASTRIC CANCER: SINGLE-CENTER LONG-TERM OUTCOME STUDY

H.I. Jung1, S. Kim3, J. So1, J.H. Choi1, Y.J. Lee1, H.J. Lee1, K.B. Cho1, K.S. Park1, S.W. Ryu1, Y.G. Son1, J.Y. Lee3
1Department Of Internal Medicine, Keimyung University School of Medicine, Daegu/Korea, Republic of
2Department Of Surgery, Keimyung University School of Medicine, Daegu/Korea, Republic of

Contact E-mail Address: hwdjh@naver.com

Introduction: Endoscopic submucosal dissection (ESD) is believed to be a possible modality for early gastric cancer. But there is little report about long-term outcomes of the ESD directly compare with the surgery. The purpose of this study is the comparison between the two treatment modalities about the outcome in long-term.

Aims & Methods: We performed a retrospective analysis of 1243 patients with stage I early gastric cancer without lymph node involvement. 551 patients were treated with ESD, and 692 patients were treated with subtotal or total gastrectomy. Long-term overall and disease-specific survival rates, development of new lesions, and complications were analyzed.

Results: The mean age was higher in the ESD group (64.9 ± 9.5 vs. 58.5 ± 11.7, P = 0.001) and female distribution was higher in surgery group (30.5% vs. 38.9%, P = 0.001). In ESD group, diabetes was more frequent (12.8% vs. 7.1%, P = 0.001). The overall survival rate was similar (96.2% vs. 96.7%, P = 0.136), but disease-specific survival rate was significantly higher in ESD group (99.8% vs. 98.7%, P = 0.037, log-rank test). During 10 year follow up period, new lesions were observed in 3.6% of ESD group and in 1.3% of surgery group (P < 0.001). ESD group showed less complications (4.5% vs. 16.3%, P = 0.001) and shorter hospital day than surgery group (5.27 days vs. 12.09 days, P < 0.001).

Conclusion: Although the development of new lesions were more frequent than surgery, ESD was similar overall survival rate and even higher disease-specific survival rate than surgery. Also, ESD has less complications and shorter hospital day than surgery. Therefore, ESD is an effective therapeutic method in early gastric cancer as well as surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1229 HEMATOLOGISTS SHOULD ORDER ENDOSCOPIC EXAMINATIONS TO EXPERTS OF ENDOSCOPY IN CASE OF ENDOSCOPIC CHECK-UP OF GASTROINTESTINAL MALIGNANT LYMPHOMA

T. Yamasaki, T. Sakurai, J. Mitobe, M. Mitsuhashi, M. Saruta
Department Of Gastroenterology And Hepatology, The Jikei University, Tokyo, Japan

Contact E-mail Address: takusan.yamasaki@gmail.com

Introduction: Gastric malignant lymphoma (ML) is most popular lymphoma of the gastrointestinal tract. Especially we often see gastric MALT lymphoma in case of GC, ML and gastritis due to those similarities.

Aims & Methods: There was significant difference of appearance of gastric MALT lymphoma between specialists and trainees. Therefore, hematologists should order endoscopic examination to experts of endoscopy knowledgeable of ML in case of endoscopic check-up of gastrointestinal malignant lymphoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1221 DEVELOPMENT OF AND EXPERIENCE WITH AN INSULATED SCISSORS-TYPE KNIFE (SB KNIFE)
M. Kobayashi
Yokkaichi Municipal Hospital Dept. of Gastroenterology, Yokkaichi/Japan

Contact E-mail Address: makoto-kobayashi@ aroma.ocn.ne.jp

Introduction: Endoscopic submucosal dissection (ESD) is technically difficult and is associated with risks of perforation and bleeding. Although knife-type instruments are primarily used to make incisions during ESD, it is necessary to be proficient in endoscopic procedures and be able to perform them simultaneously with electriﬁcation and incision. Scissors-type knives are fairly easy to manipulate in colorectal ESD. We have fabricated SB knife Jr type (SBJr), short scissors-type knife with outer insulated layer, in collaboration with SUMITOMO RAKELITE CO.

Aims & Methods: SB Jr is short length (electrode length: 3.5 mm) to be easy to handle in narrow colorectal lumen. The surface of the rotatable monopolar scissors is coated with insulating material in order to enhance the cutting power and prevent electric effects in the surrounding tissue. The shearing structure makes sharp cutting quality and very small round tips prevent to grasp the muscular layer. SB Jr was used in circumferential incision, submucosal dissection and hemostasis. After infected hyaluronic acid in submucosal layer, grasped the tissue, conﬁrming safety, make incision. SB Jr was used not only in incision but also in hemostasis. At sites containing blood vessels or bleeding, they were grasped and induced coagulation using SB Jr. It has been used on 180 colorectal lesions from January 2008.

Results: The circumferential incision and submucosal dissection were basically performed with High-frequency cutting wave. There were 3 cases of perforation during ESD and 1 case of post-operative bleeding. The procedure itself was fairly easy and was particularly effective at sites difﬁcult to visualize the submucosal dissection and sites containing blood vessels, where conventional devices would encounter difﬁculties. Due to the very small round tips of the instrument, detailed operation become simply. For coagulation of blood vessels or bleeding, it is not required to replace SB Jr which is used cutting and coagulation.

Conclusion: This short insulated scissors-type knife (SB Jr) made it easier to perform colorectal ESD, we conclude that it is an effective device and easy for a beginner in colorectal ESD.

Disclosure of Interest: All authors have declared no conﬂicts of interest.

P1222 GASTROINTESTINAL LYMPHOMAS
R. Gaspar1, A. Andrade1, J. Santos-Antunes1, R. Liberal1, F. Carneiro2, G. Macedo3
1Gastroenterology, Hospital São João, Porto/Portugal
2Diagnostica, IPATIMUP – Diagnostics, IPATIMUP, Porto/PT, Porto/Portugal
3Centro Hospitalar São João, Porto Medical School, Porto/Portugal

Contact E-mail Address: ruiolopesgaspar@gmail.com

Introduction: The gastrointestinal tract (GIT) is the most commonly extranodal site affected in lymphomatous pathology. Infection with Helicobacter pylori is associated with risks of perforation and bleeding. Although knife-type instruments are primarily used to make incisions during ESD, it is necessary to be proficient in endoscopic procedures and be able to perform them simultaneously with electriﬁcation and incision. Scissors-type knives are fairly easy to manipulate in colorectal ESD. We have fabricated SB knife Jr type (SBJr), short scissors-type knife with outer insulated layer, in collaboration with SUMITOMO RAKELITE CO.

Aims & Methods: We evaluated the effect of body mass index (BMI) on early gastric cancer in patients undergoing endoscopic treatment for early gastric cancer. A total of 748 patients with early gastric cancer undergoing endoscopic treatment (endoscopic submucosal dissection) including age and sex matched healthy controls consist of this case-control study. Body mass index was classiﬁed into underweight (BMI < 18.5), normal (BMI 18.5–23), overweight (BMI 23–25), and obese (BMI ≥ 25) by Asian body mass index classiﬁcation. Histological analysis using odds ratio (OR) and 95% conﬁdence interval (CI) was performed to evaluate the effect of BMI on early gastric cancer.

Results: The mean age was 57 years and male sex was 60% (n=447). BMI was higher in gastric cancer compared to healthy control (24 vs 23, P<0.001). The OR of gastric cancer was increased according to the BMI increase; 1.57 (95% CI, 0.89–2.79, P=0.12) in normal BMI, 1.85 (95% CI, 1.06–3.35, P=0.03) in overweight, and 2.28 (95% CI, 1.29–4.06, P=0.005) in obese persons compared to underweight (<18.5) group.

Conclusion: The early gastric cancer was strongly associated with the increased BMI and its effect has dose-dependent pattern.

Disclosure of Interest: All authors have declared no conﬂicts of interest.

P1223 THE EFFECT OF OBESITY ON EARLY GASTRIC CANCER IN PATIENTS UNDERGOING ENDOSCOPIC TREATMENT
S. Jin1, S.Y. Nam2, S.W. Jeon3, Y. Kwon1, H.S. Lee1
1Gastroenterology, Kyungpook National University Medical Center, Daegu/Korea, Republic of
2Dept. Of Internal Medicine, Kyungpook National University, Daegu/Korea, Republic of
3Endoscopic Unit, Department Of Surgery, Ulss4, Hospital ULSS4 Alto Vicentino, Santorso/Italy

Contact E-mail Address: ga2001@hannail.net

Introduction: Previous studies have shown that non-cardiac gastric cancer had no associations with the obesity even if cardiac or gastroesophageal junctional cancer was related with the obesity. These studies have included high portion of advanced gastric cancer. Patients with most advanced cancer already experienced weight loss.

Aims & Methods: We evaluated the effect of body mass index (BMI) on early gastric cancer in patients undergoing endoscopic treatment for early gastric cancer. A total of 748 patients with early gastric cancer undergoing endoscopic treatment (endoscopic submucosal dissection) including age and sex matched healthy controls consist of this case-control study. Body mass index was classiﬁed into underweight (BMI < 18.5), normal (BMI 18.5–23), overweight (BMI 23–25), and obese (BMI ≥ 25) by Asian body mass index classiﬁcation. Histological analysis using odds ratio (OR) and 95% conﬁdence interval (CI) was performed to evaluate the effect of BMI on early gastric cancer.

Results: The mean age was 57 years and male sex was 60% (n=447). BMI was higher in gastric cancer compared to healthy control (24 vs 23, P<0.001). The OR of gastric cancer was increased according to the BMI increase; 1.57 (95% CI, 0.89–2.79, P=0.12) in normal BMI, 1.85 (95% CI, 1.06–3.35, P=0.03) in overweight, and 2.28 (95% CI, 1.29–4.06, P=0.005) in obese persons compared to underweight (<18.5) group.

Conclusion: The early gastric cancer was strongly associated with the increased BMI and its effect has dose-dependent pattern.

Disclosure of Interest: All authors have declared no conﬂicts of interest.

P1224 COMPARATIVE STUDY OF THE ENDOCOSCOPIC ULTRASONOGRAPHY-GUIDED FINE-NEEDLE ASPIRATION VS MUCOSAL-INCISION ASSISTED BIOPSY FOR THE HISTOLOGICAL DIAGNOSIS OF GASTROINTESTINAL SUBEPITHELIAL TUMORS
T. Osoegawa1, N. Harada1, E. Ihara2, Y. Iboseh1, Y. Sumida2, M. Nakamuta1, Y. Ogawa3
1Gastroenterology, Clinical Research Institute, National Kyushu Medical Center, Kitakyushu/Japan
2Department Of Medicine And Bioregulatory Science, Graduate School Of Medical Sciences, Kyushu university, Fukuoka city/Japan
3Medical And Bioregulatory Science, Kyushu University, Fukuoka/Japan

Contact E-mail Address: t.osoegawa@gmail.com

Introduction: Gastrointestinal subepithelial tumors include potentially malignant tumors. When considering the diagnostic yield for subepithelial tumors, it is important to evaluate whether the samples obtained are adequate for histological analysis, as immunohistological analysis is indispensable for a definitive diagnosis. However, it may be difficult to make a correct histological diagnosis with only the endoscopic ultrasonography-guided fine-needle aspiration (EUS-FNA). Therefore, there has been an interest in exploring an alternative modality for tissue sampling as mucosal-incision assisted biopsy (MIAB) based on the endoscopic submucosal dissection.

Aims & Methods: The aim of this study was to compare the usefulness of EUS-FNA and MIAB in the histological diagnosis of gastrointestinal subepithelial tumors (SET). We performed the retrospective study comparing 37 patients who underwent either EUS-FNA (n=18) or MIAB (n=19). Diagnostic yield, histological accuracy and safety of these procedures (EUS-FNA and MIAB) were compared.

Results: The location of the SET was esophagus (n=6), stomach (n=29), and duodenum (n=2). The histological diagnosis were gastrointestinal stromal tumors (n=10), leiomyoma (n=17), aberrant pancreas (n=3), poorly-differentiated adenocarcinoma (n=2), metastatic carcinoma (renal cell carcinoma, n=1), and no-diagnosis (n=4). There were no signiﬁcant differences in the clinical characteristics-including sex and age-of the patients in the EUS-FNA and MIAB groups. In EUS-FNA, the mean diameter of the tumor was 12.9 mm. In MIAB, the mean diameter of the tumor was 15.6 mm. The mean procedure time was significantly longer in MIAB (55.15 ± 27.42 min in MIAB) compared to EUS-FNA (55.15 ± 27.42 min in EUS-FNA) (P=0.00234). Histological diagnosis was made in 72.2% of the EUS-FNA and 94.7% of the MIAB cases (P=0.00897). No complications were found in either method.

Conclusion: The mean procedure time was significantly longer in MIAB than in EUS-FNA. However, the mean diameter of the tumor was significantly smaller in MIAB than in EUS-FNA for the higher diagnostic yield in MIAB than in EUS-FNA was borderline signiﬁcant.

Disclosure of Interest: All authors have declared no conﬂicts of interest.

P1225 CLINICAL TRENDS AND BURDEN OF DEATH IN GASTRIC CANCER: A SIX-YEARS SURVEY
P. Crafa1, S. Landi1, S. Grillo2, M. Franceschi3, A. Notòs, S. Scida1, C. Miraglia1, L. Franzoni1, V. Corrente1, R. Cannizzaro4, G.M. Cavestro2, M. Bugge5, F. Di Mario6, P. Caruso1, M. Cacace7
1Department Of Medicine And Surgery, University of Parma, Parma/Italy
2Endoscopic Unit, Department Of Surgery, Uls4, Hospital ULSS4 Alto Vicentino, Santorso/Italy
3Oncological Gastroenterology, Centro di Riferimento Oncologico di Aviano S.O.C. di Gastroenterologia, Aviano/Italy
4Dept. of Gastroenterology, Università Vita-Salute San Raffaele, Milano, Italy, Milano/Italy
5Pathology, Medical School of the Padova University, Padova/Italy
6Department of Pathology, Parma Hospital, Parma, Italy, Parma/Italy
7Department of Pathology, Parma Hospital, Parma, Italy, Parma/Italy

Contact E-mail Address: pellegrino.crafa@unipr.it
Introduction: In 2012 the reported incidence of gastric cancer in both sexes was 13.1/100,000 but the early detection strictly related to a better survival. Parma area is considered at medium-low incidence of gastric cancer. For early diagnosis, the detection of a precancerous condition like atrophic gastritis seems crucial, but the majority of such patient is affected by non invasive condition like serology (Pepsinogens and Gastrin 17) as suggested in the guidelines of Kyoto and Maastricht II is up to now limited in clinical practice. Aim of the study, therefore was to establish the burden of gastric cancer in the diagnosis of the last six years, focusing on the detection of early gastric cancer.

Aims & Methods: Six years (from July 2010 to July 2016) were considered in search for diagnosis of gastric cancer as reported in the archives of the Pathology Department of Parma University. Overall, 816 cases of gastric cancer were found but we decided to consider only the surgically removed cases, therefore the available sample is based on 584 cases. For every cases we classified the cancer in early, following the Kodama classification, and advanced. The presence of atrophic gastritis nearby the neoplasia was assessed according with OLGA classification. Both early and advanced cancer the node status was investigated.

Results: Overall, 584 cases of gastric cancer was detected in the six years considered interval (M = 318, F = 223, mean age 78.8 years, range 36–105y). The diagnosis of early gastric cancer was made in 24/584 (7.3%) (M = 24, F = 20 mean age 75.68y, range 47–92y). A diagnosis of advanced gastric cancer was established in 540 pts (M = 318, F = 222, mean age 78.20y, range 36–105y). The picture of chronic atrophic gastritis was found in more than 95% of the cases, both in early and advanced ones. The node status was also recorded. Early cancers showed a 25% of node metastasis compared with 84.65% in advanced ones. As regards the number of involved nodes, in early presentation of neoplasia we found 98% of pN1 staging whereas in advanced the pN1 cases were only 9.1%.

Conclusion: Cancer diagnosis is still confirmed as too infrequent and this could account for the high mortality rate for the gastric neoplasia. The search for precancerous condition like chronic atrophic gastritis is therefore mandatory.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1236 GASTRIC ADENOCARCINOMA OF FUNDIC GLAND TYPE: CANCER GENOMIC DATA

H. Ueyama1, T. Hayashi2, T. Saito3, Y. Akazawa2, H. Komori1, K. Matsutomo1, K. Matsuoka1, K. Hata2, T. A. Nakagawa1, H. Watanabe1
1Department Of Gastroenterology, Juntendo University School of Medicine, Tokyo/Japan
2Department Of Human Pathology, Juntendo University School of Medicine, Tokyo/Japan
3Department Of Gastroenterology, Juntendo University Shizuoka Hospital, Shizuka/Japan

Contact E-mail Address: pysyo@juntendo.ac.jp

Introduction: Gastric adenocarcinoma of fundic gland type (GAFG) is an uncommon variant of gastric adenocarcinoma which has a distinct clinicopathological, immunohistochemical, and endoscopic features 1–3). However, the molecular background of GAFG, next generation sequencing (NGS) was perfomed for all patients with gastric adenocarcinoma of fundic gland type (chief cell predominant type) using magnifying endoscopy with narrow-band imaging. Stomach and intestine. 2015; 50(12): 1533–1547.


Contact E-mail Address: 4094108@qq.com

Introduction: Runt-related transcription factor 3 (Runx3) is a transcription factor playing an inhibitory role in the malignant behavior of gastric cancer. Long non-coding RNAs (LncRNAs) exert their functions mainly by binding with corresponding transcription factors. Among transcription factors the most common ones. However, the LncRNAs that could bind with and affect the expression or activity of Runx3 are still unclear.

Aims & Methods: Potential Runx3-binding LncRNAs were screened by an online promoter-based software RPSiQ3. A specific HOTTIAR binding site with Runx3 was confirmed further by RNA Pull down. The E3 ubiquitin ligases being involved in the ubiquitin-proteasome degradation of Runx3 were recognized through co-immunoprecipitation assay. Besides, the expressions of HOTTIAR and Runx3 were measured in human gastric cancer tissues and correlated with each other.

Results: A total of 11 IncRNAs that might bind with Runx3 were selected by in silico analysis, among which, HOTTIAR, MALAT1, PT1 and LET were significantly amplified in RNAs precipitated by Flag antibody. Ectopic expression of HOTTIAR inhibits the protein expression of Runx3, while addition of exogenous MG132 could partially recover this. RNA Pull down assay with a stepwise depletion of Runx3 shows that HOT-D2 (1951–2100) is a major Runx3 binding site along the sequence of HOTTIAR. MX3b was markedly enriched by Runx3 body, and siRNAs targeting either HOTTIAR or Mex3b could enhance the stability of Runx3 by impairing its ubiquitination. In addition, HOTTIAR was negatively associated with the protein level of Runx3 in gastric cancer tissue.

Conclusion: HOTTIAR induces the ubiquitin-proteasome degradation of Runx3 by enhancing its interaction with a E3 ubiquitin ligase Mex3b in gastric cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1237 LNCRNA-HOTAIR INDUCES THE UBIQUITINATION OF RUNX3 IN GASTRIC CANCER

S. Chen1, M. Xue2, L. Chen3, L. Wang4
1Gastroenterology, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, Hangzhou/China
2The second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou/China
3Contact E-mail Address: a494108@qq.com

Introduction: Promoter hypermethylation plays a vital role in cancer development through transcriptional silencing of tumour suppressor genes. Using Infinium Human Methylation 450 BeadChip (450K) array, we first identified calcium binding protein 39-like (CAB39L) to be preferentially methylated in gastric cancer (GC) and it may function as a potential tumour suppressor gene.

Aims & Methods: In this study, we aim to investigate the biological function, molecular mechanism and clinical implications of CAB39L in GC. Clinical relevance was validated by bisulfite genomic sequencing (BGS), western blot and immunohistochemistry (IHC). In vitro functional assays were carried out by cell viability, colony formation, apoptosis, cell cycle, cell invasion and migration assays in GC cell lines. In vivo tumorigenesis was evaluated in an orthopic nude mouse model. Pathway analysis was performed using RNASeq and Phospho-kinase Antibody Array. The interaction of CAB39L with its protein partners was determined by co-immunoprecipitation assay.

Results: CAB39L mRNA was down-regulated in 13 out of 14 GC cell lines. Silencing of CAB39L was associated with promoter hypermethylation, and demethylation 5·treatment using Azadeoxycytidine (5-Aza) restored the expression of CAB39L. In human GC, CAB39L mRNA and protein level (p < 0.0001)
were significantly decreased in GC tissues comparing to adjacent normal tissues both in Chinese cohort (n = 48 pairs) and TCGA cohort (n = 450). CAB39L hypermethylation was correlated with poor overall survival in Chinese cohort (n = 87, p < 0.005) and validated in TCGA cohort (n = 354, p < 0.005), suggesting that CAB39L might function as a tumour suppressor. The functional importance of PKNOX2 in GC was therefore examined. Ectopic expression of CAB39L in three GC cell lines (AGS, BGC823, MKN45) suppressed cancer cell proliferation in vitro (p < 0.01) and colony formation assays (p < 0.0001). CAB39L induced apoptosis and G1 cell cycle arrest in GC cells, concomitant with the enhanced expression of cleaved caspase-8, caspase-3, p21 and decreased cyclin D3 expression. Cell migration and invasion abilities were inhibited by CAB39L in wound healing and gel invasion assays, respectively. Conversely, CAB39L knockdown in MKN28 demonstrated opposite effects. Orthotopic mouse model also showed inhibited tumorigenicity with CAB39L-overexpressing BGC823 cells. Mechanically, RNAseq and gene set enrichment analysis (GSEA) revealed that AMPK and ERBB2/ERBB4 signaling were involved in the tumour suppressive role of CAB39L in GC. Consistent with our RNAseq data, we confirmed that AMPK was the top activated kinase; whilst ERK1/2 was the most strongly down-regulated in CAB39L over-expressing GC cells, suggesting that CAB39L up-regulates AMPK concomitant with down-regulation of ERBB2/4/ERK signalling. Moreover, co-immunoprecipitation experiment between CAB39L and LKB1, a bona-fide tumour suppressor that functions to activate AMPK to suppress tumorigenesis. Western blot confirmed activation of LKB1-AMPKα/β cascade in GC cells expressing CAB39L, whose opposite effect was observed in CAB39L silenced MKN28 cells. Administration of an AMPK activator, AICAR, inhibited growth of control cells but not CAB39L-expressing (thus AMPK activated) cells, suggesting that AMPK activation by CAB39L contributes to tumour suppression. Collectively, this novel tumour suppressor silenced by promoter methylation in GC, CAB39L inhibits gastric tumorigenesis via LKB1-mediated activation of AMPKα/β. CAB39L methylation may serve as an independent prognostic biomarker for GC patients.

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PKNOX2 via activating p53 signaling pathway, as determined by western blot assay. Importantly, p53 transcriptionally regulated IGFBP5 gene is coordinately up-regulated in PKNOX2 over-expressing cells, leading to tumour suppression.

Conclusion: PKNOX2 functions as a novel tumour suppressor silenced in GC by promoter methylation. Its tumour suppressive effect is mediated via IGFBP5 and the activation of p53 signaling pathway. Promoter methylation of PKNOX2 may be a useful biomarker for predicting patient prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1241 RECOVERY OF GASTRIC FUNCTION IN CHRONIC ATROPHIC GASTROENTEROPATHY USING L-CYSTEINE: A 3 YEARS STUDY
F. Di Mario1, L. Franzoni2, S. Grillo3, S. Landi3, C. Miraälga2, S. Scida4, M. Rico5, G. Grandè6, M. Franceschi2, M.P. Panazzolo7, A. Antico8, R. Cannizzaro9, G.M. Cavestro10, M. Rugge11, C. Scarpignato2
1University Of Parma, Department Of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy
2Department Of Medicine & Surgery, University Of Parma, Italy, University of Parma, Parma/Italy
3Gastroenterology, University of Parma, PARMA/Italy
4University Of Parma, Parma/Italy
5Local Health Unit Of Parma, Public Health Department, Occupational Health And Safety Service, Parma, Italy, University Hospital, Parma (Italy), Parma/Italy
6Ann Medena, Gastroenterology and Digestive Endoscopy Unit, Medena/Italy
7Endoscopic Unit, Department Of Surgery, Uls4, Hospital ULS4 Alto Venticinoro, Santorito/Italy
8Department Of Clinical Pathology, Uls4 Alto Venticinoro, Santorito, Italy, Hospital ULS4 Alto Venticinoro, Santorito/Italy
9Oncological Gastroenterology, Centro di Riferimento Oncologico di Aviano S.O.C. di Gastroenterologia, Aviano/Italy
10Dept. Of Gastroenterology, Universita Vita-Salute San Raffaele, Milano, Italy, University of Milano/Italy
11Pathology, Medical School of the Padova University, Padova/Italy

Contact E-mail Address: francesco.dimario@unipr.it

Introduction: The relationship between Helicobacter pylori (H. p.) eradication and atrophic changes is debated. Although some studies report a partial restoration of GC glandular (GC) levels after eradication therapy, it is not clear today that finding reflects gastric mucosal healing. L-cysteine, reducing acetaldehyde production after food intake, has been proposed for prevention of gastric carcinogenesis in patients with chronic atrophic gastritis (CAG). To assess modifications in gastric function after L-cysteine administration in CAG by means of PGI and gastrin 17 (G17) serum levels

Aims & Methods: 62 patients (18 men, mean age 47.2 yrs), with histological diagnosis of moderate to severe chronic, atrophic, body gastritis (according to the Updated Sydney) and PGI serum levels higher than 25 pg/L in histological gastrointestinal endoscopy with gastric biopsy samplings and PGI and G-17 measurement by means of Gastropan®. 22 out of 62 patients had autoimmune gastritis while 40 of them reported previous H. p. infection. All patients, Helicobacter pylori negative at baseline, were treated with L-cysteine (100 mg three times daily), up to now 44 out of 26 reached 36 months-treatment. Serum PGI and G-17 were measured at baseline and after 3, 6, 12, 24, 36 months after starting therapy.

Results: The G-17 serum increased level after the starting of L-cysteine administration, as it follows: PGI mean value at baseline was 8.42 µg/L, but after 3 months therapy was 10.58, after 6 months 11.65, after 12 months 12.19, after 24 months 13.88, and after 36 months was 14.21 (p < 0.0001). The G-17 serum level resulted gradually decreased over the 36 months therapy, as it follows: G-17 mean value was 51.33 mp/ml at baseline, 43.13 after 3 months therapy, 38.66 after 6 months, 28.34 after 24 months and 26.03 after 36 months (p < 0.0041).

Conclusion: After L-cysteine administration, patients with chronic, atrophic, body gastritis showed long-lasting improvements of physiological gastric function, reflected by a significant increase of PGI levels and a parallel decrease of G-17 serum levels over a 36 months follow-up period.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1 wangchaojian@hotmail.com

Introduction: Signaling pathway mediated by androgen receptor (AR) plays an important role in the development of gender-related tumors, such as hepato-cellular carcinoma, prostate cancer. Gastric cancer (GC) is the third cause of cancer related death all over the world, and its incidence in male is also much higher than female. However, the molecular mechanisms of AR in gastric cancer are still poorly characterized.

Aims & Methods: To investigate the role of AR in gastric cancer, we identify the transcriptional downstream targets of AR by chromatin immunoprecipitation. We detected mRNA and protein expression level of AR and its target in paired GC samples using RT-PCR and western blot. The biological functions of AR signaling pathway in GC cell lines were determined by colony formation and cell migration/invasion assay.

Results: CCRK was demonstrated as the direct target of AR by chromatin immunoprecipitation. AR expression was elevated in most (6/7) GC cell lines compared with the immortalized gastric cell lineGES1. CCRK was upregulated in all (7/7) tested GC cell lines. The correlation of AR and CCRK expression was statistically significant. Higher mRNA level of both AR and CCRK were detected in GC tissues compared with the adjacent normal tissues (P < 0.01). Ectopic re-expression of AR or CCRK by stable transfection promoted colony formation and invasiveness (P < 0.05). Consistently, the numbers of colony formation, migrated cells and invasive cell were reduced by knockdown of AR or CCRK in GC cells (P < 0.01).

Conclusion: Our results demonstrate that AR directly regulates CCRK expression in GC. AR and CCRK gene may act as a potential oncogene in gastric carcinogenesis by playing an important role in promoting of cell proliferation, migration and invasion, which may partially explain the higher prevalence of gastric cancer among males.

Disclosure of Interest: All authors have declared no conflicts of interest.
and 6 of these patients had coeliac, whilst 4 had other pathology such as granulomas or duodenitis. For all the patients who had abnormal D2 biopsies, they had other clinical markers of malabsorption, such as abdominal pain and diarrhoea, or biochemical indices such as anaemia or elevated TTG antibodies.

Conclusions: We conclude that yield of routine duodenal biopsies in patients endoscoped for the sole indication of weight loss is poor. In patients with weight loss in whom coeliac disease is identified on biopsy it is always associated with additional symptoms or abnormalities in blood indices. We conclude that there is no need to take biopsies of the duodenum on a routine basis for weight loss alone unless there are other signs of malabsorption. This will save time (both from taking the biopsy and sampling in the lab), lower the cost (forces and pot) and improve the safety (potential perforation and bleeding risk) of the procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1245 FUNDING DISPARITIES IN DIGESTIVE CANCER RESEARCH IN THE UNITED STATES

P. S. Liang1, K. O'Connell2, M. Du3
1Medicine, New York University, New York/United States of America
2Memorial Sloan Kettering Cancer Center, New York/United States of America

Contact E-mail Address: peterliang@gmail.com

Introduction: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 14% of all cancer death. It is unclear whether the amount and recent trends in US federal funding for digestive cancer research corresponds to the burden of disease.

Aims & Methods: We obtained the total annual funding for cancer (including the five most common digestive cancers) from 2008 to 2015 using a public database of research funded by US federal agencies. We calculated funding in 2015 constant USD using the Consumer Price Index. Cases and deaths estimated by the American Cancer Society were used to calculate funding per death or case for each cancer. For comparison, we also extracted data for the three most common cancers (breast, lung, prostate) and all cancers combined. As funding for research in the United States was boosted by the American Recovery & Reinvestment Act in 2009–2010 and declined thereafter, we analyzed trends in funding and disease incidence in the United States. We determined whether the amount and recent trends in federal funding for digestive cancer research were proportional to the amount and recent trends in the five most common digestive cancers.

Results: In 2015, 8 billion USD in federal funding was issued to all cancer research and 658 million USD to the five common digestive cancers. The five common digestive cancers received less than 5% of all cancer funding. The ratio of the proportion of all cancer death to the proportion of all cancer research and 658 million USD to the five common digestive cancers. The five common digestive cancers received less than 5% of all cancer funding. The rate of the proportion of all cancer death to the proportion of all cancer research and 658 million USD to the five common digestive cancers. The five common digestive cancers received less than 5% of all cancer funding. The rate of the proportion of all cancer death to the proportion of all cancer research and 658 million USD to the five common digestive cancers.

Conclusion: The estimated number of deaths and cases decreased for colorectal cancer but increased for esophageal and gastric cancer among digestive cancers and for lung cancer overall. The funding disparity, measured by proportional death and funding, was highest for liver cancer in 2015. Gastric cancer was the only digestive cancer to measure in the top two for both funding per death and per incident case.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1247 CURCUMIN DOWNREGULATES INTERLEUKIN (IL)-17 BY INCREASING THE EXPRESSION OF INDOLEAMINE 2,3- DIOXYGENASE (IDO) IN HELICOBACTER PYLORI INFECTED HUMAN GASTRIC MUCOSA

T. Larussa, R. Liprotti, S. Gervasi, E. Suraci, R. Marasco, M. Imenone, F. Luzzato
Department Of Health Sciences, University of Catanzaro, Catanzaro/Italy

Contact E-mail Address: tiziana.larussa@gmail.com

Introduction: IDO promotes the effector T-cells apoptosis by catalyzing the rate-limiting first step in tryptophan (Trp) catabolism. We demonstrated that the high expression of IDO in H. pylori-infected human gastric mucosa attenuates Th1 and Th17 immune response, as well as their Th2 and Th17 immune response. IDO has the potential to decrease the expression of the promotor CpG island hypermethylation in gastric carcinogenesis. H. pylori infection was associated with promotor hypermethylation of genes in gastric carcinogenesis, and H. pylori eradication might reverse p16 and CDH1 hypermethylation.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1246 HELICOBACTER PYLORI ERADICATION MODULATES ABBRENT CPG ISLAND HYPERMETHYLATION IN GASTRIC CARCINOGENESIS

J. Choi1, S.G. Kim2, B.G. Kim2, S. Koh2, J.W. Kim2, K.L. Lee2
1Department Of Internal Medicine, SMG-SNU Boramae Medical Center, Seoul/Korea, Republic of
2Internal Medicine And Liver Research Institute, Seoul University College of Medicine, Seoul/Korea, Republic of

Introduction: H. pylori infection induces aberrant DNA methylation in gastric mucosa, which is under the influence of the effectiveness of the eradication therapy. The eradication therapy is associated with the hypermethylation of CpG island promoters in human gastric neoplastic cells. In this study, we evaluated the effect of the eradication treatment on promoter CpG island hypermethylation in gastric carcinogenesis.

Aims & Methods: H. pylori-positive patients with gastric adenoma or early gastric cancer who underwent endoscopic resection were enrolled. According to H. pylori eradication after endoscopic resection, the participants were randomly assigned to H. pylori eradication or non-eradication group. H. pylori-negative gastric mucosa from normal participants provided the normal control. CpG island hypermethylation of tumor-related genes (p16, CDH1, and RUNX-3) was evaluated by quantitative MethLight assay in non-tumorous gastric mucosa. The gene methylation rate and median values of hypermethylation were compared after one year by H. pylori status.

Results: In H. pylori-positive patients, hypermethylation of p16 was found in 80% (n=18) of CDH1 in 80.6% (n=17) and RUNX-3 in 48.4% (p=0.005). This was significantly higher than normal control (p16, 10%; CDH1, 44%; RUNX-3, 16%) (p<0.05). In the H. pylori eradication group, methylation rates of p16 and CDH1 decreased in 58.1% and 61.3% of the patients, and the median values of hypermethylation were significantly lower at one year compared with the non-eradication group. However, RUNX-3 hypermethylation did not differ significantly at one year after H. pylori eradication. The non-eradication group hypermethylation did not change after eradication.

Conclusion: H. pylori infection was associated with promoter hypermethylation of genes in gastric carcinogenesis, and H. pylori eradication might reverse p16 and CDH1 hypermethylation.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1248 ALTERATIONS IN SALIVARY MICROBIOTA IN SUBJECTS WITH HELICOBACTER PYLORI-ASSOCIATED GASTRYTIS

W.K. Leung1, K.S. Lai2, T.S. Tong3, K. Chu3, P.C. Sham3
1Department Of Medicine, University of Hong Kong, Hong Kong/Hong Kong PRC
2Department Of Surgery, The University of Hong Kong, Hong Kong/Hong Kong PRC
3Centre For Genomic Sciences, The University of Hong Kong, Hong Kong/Hong Kong PRC

Contact E-mail Address: waikingleung@hku.hk

Introduction: Alterations in salivary microbiota have been linked to elevated inflammatory responses and has been reported in patients with inflammatory bowel disease and pancreatic cancer. As yet, the potential association between salivary microbiota and patients with gastric disease has not be determined.

Aims & Methods: In this study, we characterized the salivary microbiota in patients with H. pylori-associated gastritis and the potential changes of salivary microbiota after receiving HP eradication. We enrolled subjects who were scheduled for diagnostic upper GI endoscopy. We excluded patients with peptic ulcer or cancer found on endoscopy, who have received prior HP eradication therapy, and who have recent exposure to antibiotics or acid suppressive therapies. Unstimulated saliva samples were obtained from subjects during fasting state. 16S rRNA gene sequences were determined for determination of HP statuses by rapid urease test and histology. Another gastric biopsy was obtained for characterization of gastric microbiota. Serial salivary samples were obtained from HP-infected subjects 8-week after completing HP eradication therapy. Bacterial DNA was extracted for 16S rRNA sequencing by using the MiSeq Platform (Illumina). OTU clustering was performed and taxonomy assigned to the Greengene and HOMD database. Alpha and beta diversities and Linear Discriminant Analysis Effect Size (LEfSe) was used to identify differentially expressed bacterial DNA in different groups.

Results: We enrolled 16 subjects with confirmed HP gastritis and 14 HP-negative subjects. Baseline salivary samples of all subjects were found to have significantly higher salivary microbial diversity than corresponding gastric samples. The predominant microbial family identified in the stomach is Helicobacteraceae (55.2%) whereas Helicobacteraceae constitutes only 0.1% of salivary microbiota. In contrast, the predominant families in saliva microbiota are Prevotellaceae (23.9%) and Neisseriaceae (20.3%). When compared to HP-negative subjects, salivary microbiota in HP-positive patients showed a significant increase in the Bacteroidetes and Spirochaetaceae, and a decrease in Flavobacteriaceae families. HP eradication therapy resulted in a significant reduction in the relative abundance of family Flavobacteriaceae and an increase in families Helicobacteraceae, Lachnospiraceae, Porphyromonadaceae, and Ruminococcaceae. Conclusion: There was a significant difference in the microbial diversity and compositions between gastric and salivary microbiota in HP-infected subjects, with Helicobacteraceae dominating the gastric microbiota. HP-infected subjects have a distinctive microbiota in the saliva which is reversed by HP eradication therapy. The significance of these microbial alterations in the saliva of HP-infected subjects and its correlation with gastric diseases deserves further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1250 AUTOIMMUNE GASTRITIS WITH PREVIOUS OR CONCURRENT H. PYLORI INFECTION PRESENTS DISTINCT FUNCTIONAL AND MORPHOLOGICAL FEATURES

G. Maddalo1, V. Pirotta1, C. Orlando1, M. Pizzii1, M. Fassan2, D. Bassol2, F. Farinati1
1Surgery, Oncology And Gastroenterology, Gastroenterology Unit, University Of Padua, Padua/Italy
2Medicine, University of Padua, Padua/Italy

Contact E-mail Address: gemma.maddalo@gmail.com

Introduction: Autoimmune gastritis (AIG) results in hypo/achlorhydria due to parietal cells destruction. It is characterized by lower levels of serum pepsinogen (Pg) I and PgI/PgII ratio and increased levels of gastrin. Some Authors support an association between AIG and Helicobacter pylori (HP) infection.

Aims & Methods: The aim of our study was to assess epidemiological, serologic and pathologic features of AIG patients with and without previous HP infection. Two hundred and eleven consecutive patients with AIG, undergoing endoscopy and biopsies, were included. Serum gastrin, PgI, PgII and Cromogranin A levels were determined in all patients. Multiple gastric biopsies were obtained for histology, OLGA staging and HP detection. Previous or current HP infection (HP+) was confirmed in patients by anamnestic and/or pathologic and/or serologic data. Statistics was performed using non parametric tests.

Results: Present or previous HP infection was confirmed in 50/211 patients while 161 were negative (HP-). When we compared HP+ vs HP- AIG, no differences were found for age and gender distribution, antral and fundic/body atrophy, OLGA staging, PgI and PgII ratio and Cromogranin A levels. Gastrin levels and Gastrin/PgI ratio, a global marker of gastric damage we previously identified, were higher in HP+ vs HP- (p < 0.02). Interestingly, 15% HP+ presented antrum atrophy. Severity of ECL hyperplasia was higher in HP+ (p = 0.02) with a 3.5 RR of developing nodular or carcinoid lesions when compared with HP+. Serum PgI, PgII, PgI/PgII and gastrin levels correlated with disease severity in HP+ (p < 0.01) but not in HP-.

Conclusion: HP+ AIG have/have had a mild infection without differences in OLGA staging when compared with HP- HP+ are characterized by lower gastrin and gastrin/PgI levels that, considered the lack of differences in OLGA staging, we suggest are related to a more extensive seroconversion process. HP- patients selected G Cell damage leading to lower levels of gastrin and Gastrin/PgI ratio. Consequently, they have lower degrees of ECL hyperplasia and a lower risk of developing carcinoids when compared with HP-. The presence of antrum atrophy in HP+ could be explained with the supposed autoimmune antrum damage hypothesis in AIG+. In conclusion, HP+ and HP- AIG have some differences in serological phenotype and HP infection may correlate in AIG with lower ECL hyperplasia and lower risk of neuroendocrine tumor. Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1251 THE INVESTIGATION OF MIR-155, MIR-21, MIR-146A AND MIR-223 EXPRESSIONS IN HELICOBACTER PYLORI POSITIVE AND NEGATIVE INDIVIDUALS

N. Uyar Alpaslan1, E. Ucbilek2, I. O˘. Barlas1, O. Sezgin2, S. Yarar1

Effect: miRNA isolation. hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-mir-223 assessed by the rapid urease test. Serum specimens of patients, were taken for H. pylori infection. All patients were divided on two groups: with cagA (+) and absence in 10 patients (cagA (+) group). In cagA (+) patients mean level interleukin-1b was 395.6 pg/ml, but in cagA (-) patients-311.2 pg/ml (p < 0.05). Level of interleukin-1b in cagA (+) patients was 2.4 pg/ml but in cagA (-) patients-0.32 pg/ml (p < 0.05). Level of interleukin-4 in cagA (+) patients was 21.6 pg/ml, but in cagA (-) patients-83.4 pg/ml (p < 0.05).

Conclusion: presence in a genome of H. pylori cagA gene is accompanied by reliable increase in level of pro-inflammatory interleukin (IL-1b, IL-8) and decrease in level anti-inflammatory interleukin-4 that can be an additional factor of development of an inflammation during H. pylori infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1252 INTERLEUKIN LEVEL IN PATIENTS INFECTED WITH CAGA (+) AND CAGA (−) STRAINS OF HELICOBACTER PYLORI

N.V. Baryshnikova1, Y.P. Uspensky1, A. Savovor1

1Science Research Institute, St-Petersburg/Russian Federation
2First Pavlov Saint-Petersburg State University, St-Petersburg/Russian Federation

Contact E-mail Address: baryshnikova_nv@mail.ru

Introduction: Change of interleukin level can be in patients with of chronic infections, in particular at Helicobacter pylori infection. Change of interleukin level in infected patients is significantly increased, for example, increase in level of interleukin-8 according to a number of works is accompanied by infection with virulent strains of a microorganism. CagA gene coding synthesis of the cytokotoxin (CagA) of the same name capable, in addition, to exert impact on development of interleukin-8, in particular at infection with CagA (+) is considered a marker of presence of pathogenicity island of H. pylori.

Aims & Methods: The aim was to define features of change of level of interleukin-1b, interleukin-4 of H. pylori (+) and interleukin-4 of H. pylori (-) strains. Levels of interleukins 1-β,4,-8 decided by immune-fluorescence analysis (the Vektor-Best sets, Russia).

Results: cagA gene was detected in 30 patients (cagA(+)-group) and absence in 10 patients (cagA(−)-group) in H. pylori (+) patients mean level interleukin-1b was 395.6 pg/ml, but in cagA (−) patients-311.2 pg/ml (p < 0.05). Level of interleukin-1b in cagA (+) patients was 2.4 pg/ml but in cagA (−) patients-0.32 pg/ml (p < 0.05). Level of interleukin-4 in cagA (+) patients was 21.6 pg/ml, but in cagA (−) patients-83.4 pg/ml (p < 0.05).

Conclusion: presence in a genome of H. pylori cagA gene is accompanied by reliable increase in level of pro-inflammatory interleukin (IL-1b, IL-8) and decrease in level anti-inflammatory interleukin-4 that can be an additional factor of development of an inflammation during H. pylori infection.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Potent acid inhibition with acid inhibitory drugs is crucial to the second-line eradication for H. pylori infection. Vonoprazan was comparatively inhibiting the binding of potassium ion to H+–K+-ATPase in gastric parietal cells and inhibits H+–K+-ATPase activity at 400-fold more potent than that of lansoprazole, proton pump inhibitor (PPI). Therefore, the eradication regimen containing vonoprazan has the potential for increasing eradication compared with a PPI-based therapy. Although vonoprazan is mainly metabolized by CYP3A4/5, it is unclear whether its acid inhibitory effect and outcome of H. pylori eradication differ among CYP3A4/5 genotypes. Our aim was to clarify whether CYP3A4/5 genotypes affect outcome of H. pylori eradication including vonoprazan in Japanese.

Aims & Methods: We investigated the influence of CYP3A4/5 and CYP2C19 genotypes and susceptibility of antimicrobial agents for outcome of vonoprazan-contained eradication regimen for 7 days in 105 Japanese: (1) with amoxicillin 750 mg and clarithromycin 20 mg twice daily (bid) as the first-line treatment (n=76); (2) with amoxicillin 750 mg and metronidazole 250 mg bid as the second-line (n=29). Eradication was assessed at eight weeks via 13C-Urea breath test. CYP3A4*22, CYP3A5*3 and CYP2C19*2/3*5 were genotyped for all patients.

Results: Eradication rate on intention-to-treat analysis was 82.9% (95% confidence interval (CI): 75.6–89.2%) in the first-line treatment and 93.1% (95% CI: 89.1–97.1%) in the second-line treatment. No CYP3A4*22 was observed. 38.3% of patients (46/120) were CYP3A5*1/*3 type and 55.0% were CYP3A5*3 type. In naive patients, the prevalence of clarithromycin-resistant strain was 42.4% (107/253). The eradication rate in patients with CYP3A5*1/*3 carrier type (CYP3A5*1/*1 and *1/*3 types) was 72.4% (54.5–86.7, 24.33), which was significantly lower than that in the CYP3A5*3 type (90.7%, 77.9–97.4, 39.43, p=0.039) in the first-line treatment. However, no significant differences of clinical outcome in the second-line therapy were seen among CYP3A4/5 genotypes.

Conclusion: Eradication rates of vonoprazan-based eradication therapy can be achieved high compared with PPI-based therapy. However, because CYP3A5*3 genotype may be one of determinate for outcome of eradication regimen including vonoprazan, genotyping of CYP3A5*3 will be required to be paid attention for clinical outcome before treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Contact E-mail Address: naakosoo122@gmail.com
such as erosion and diarrhea were reported in 6.6% (9/136) of patients in VPZ, in contrast to 4.3% (6/139) in LPRZ.

Conclusion: The first-line regimen with VPZ was superior to conventional PPI regimen, and was a result not to be inferior in the safety either.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1257 CAN TWO WEEK BISMUTH BASED QUADRUPLE THERAPY FOR RESISTANT H. PYLORI INFECTION STILL BE USED IN THE UK?
H. Logan-Ellis, L. Bensaïd, R. P.H. Logan
Gastroenterology, King’s College Hospital, London/United Kingdom

Contact E-mail Address: hughloganellis@kshs.net

Introduction: Eradication of H. pylori infection cures peptic ulcer disease (PUD); however the most effective and ideal and many studies require repeated courses of treatment. We, and others, have recently documented that currently, within the UK, less than 30% of patients with proven PUD, are subsequently documented to have been cured by H. pylori eradication (7). Currently there is no consensus regarding 2nd line treatments, but the British National Formulary recommends a two regimen containing bismuth subcitrate, omeprazole, tetracycline and metronidazole. However since 2016, bismuth subcitrate has not been available in the UK, but is thought to be an important in treating persistent H. pylori infection (8,9).

Aims & Methods: The aim of this observational cohort study was to evaluate the effectiveness of a 2 week bismuth based quadruple therapy in patients who had previously failed first line eradication therapy. Patients were identified from electronic hospital records using endoscopy data set, patient administration records, and pathology data sets from Jan 2011 to Dec 2016. Initial failed H. pylori eradication was defined by either by a positive 13C-Urea Breath Test (13C-UBT) or positive HpStool Antigen test (HpSA) following H. pylori treatment in either primary or secondary care. All patients were seen, assessed and warned about the importance of compliance with treatment and of possible side effects by the specialist (RL) or the dyspepsia nurse specialist (E.Ierardi). After treatment, omeprazole 20 mg bd, tetracycline 500 mg qds, metronidazole 400 mg qds and bismuth sub citrate for 2 weeks, eradication was assessed at least 4 weeks after finishing treatment by 13C-UBT (or HpSA in those patients unable to attend hospital appointment). Endoscopy was also performed in those patients whom had failed multiple previous treatments to ascertain the clinical need for further treatment by assessing any underlying ulcer diathesis and for H. pylori culture and sensitivity testing.

Results: Within the inclusion period, (and from >560 patient records), 41 patients (22 male, 19 female, mean age 64 yr, range 17-84 yr) were identified as having persistent H. pylori infection by +ve 13C-UBT (n = 25), HpSA (n = 10) or histology/CL0Test (n = 6). All had failed at least one treatment, but 14/41 (34%) had failed 2 or more. Most patients were non or light drinkers (90%) and non-smokers (74%). OGD was performed in 19 patients to clarify indication for further attempts at H. pylori eradication and showed evidence of ulcer disease (ulcer, scarring or erosions) in 13/19 (68%). Culture and antibiotic sensitivity testing was unsuccessful in 3/5 patients. At least 6 weeks after the end of treatment, either by 13C-UBT or HpSA was negative in 34/36 (94%) (95%CI 82-98%). 5 patients failed to attend for assessment of eradication. During the follow up period from 2011 onwards, 11 patients underwent repeat 13C-UBT or HpSA testing, and all remained cured of infection.

Conclusion: Two week standard bismuth based quadruple therapy remains a highly effective treatment for persistent H. pylori infection in those patients in whom eradication of infection is mandated by the an underlying ulcer diathesis. The low eradication rate is likely due to the use of bismuth high doses of antibiotics, but also by specialists ensuring patients complied with their medication. These data, together with the poor outcomes of H. pylori eradication when undertaken by general physicians, also highlight the need for H. pylori eradication to be one of priority for specialists who have access to alternative sources of collodial bismuth subcitrate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1258 MAY PROBIOTICS MONOTHERAPY ERADICATE HELICOBACTER PYLORI IN PERSISTENT H. PYLORI INFECTION: A SYSTEMATIC REVIEW WITH POOLED-DATA ANALYSIS
G. Losurdo, R. Cubisino, M. Barone, M. Principi, E. Ierardi, A. Di Leo
Emergency And Organ Transplantation, University of Bari, Bari/Italy

Contact E-mail Address: giuseppelos@alice.it

Introduction: Despite several evidences in literature have demonstrated a role for probiotics as adjunctive treatment for Helicobacter pylori (H. pylori) eradication, national and international guidelines as well as meta-analyses suggest that only co-administration of probiotics may have a beneficial effect on the prevention of side effects and eradication rates. Herein, we performed a systematic review with pooled-data analysis aimed to clarify whether probiotics alone may eradicate the bacterium.

Aims & Methods: Methods of analysis and inclusion criteria were based on PRISMA recommendations. Relevant publications were identified by a research in PubMed, MEDLINE, Science Direct and EMBASE. The end-point was to estimate the mean eradication rate and variations of delta value at urea breath test across all studies and, overall, with a pooled data analysis. The data have been expressed ad proportions/percentages, and 95% confidence intervals (CI) were calculated. For continuous variables, we calculated the weighted mean difference. Odd ratios (OR) were calculated, where available, based on the Mantel-Haenszel method. Data were entered into the RevMan 5.3 software. Real-life studies (both randomized clinical trials and open label pilot studies) were selected. In one study patients with peptic ulcers were selected, while in the remaining 9 only dyspeptic patients were recruited. Probiotics eradicated H. pylori in 50 out of 391 cases. The mean eradication rate was 14%, with a 95% CI of 2-25% (p = 0.02). Most of studies investigated a probiotic formulation based on a single lactobacilli strain. Lactobacilli eradicated the bacterium in 30 out of 235 patients, with a mean weighted rate of 16% (95% CI 1–31%). Multistitution combinations were effective in 14 out of 105 patients, with a pooled eradication rate of 14% (95% CI 16–43%). In the comparison probiotics versus placebo, we found an OR = 9.65 in favor of probiotics, with a 95% CI of 1.97–47.36 (p = 0.005). Finally, probiotics induced a mean reduction in delta values of 8.61% (95% 5.88–11.34, p < 0.0001). No study provided data about adverse events.

Conclusion: Probiotics alone show a minimal effect on the eradication of H. pylori, thus suggesting a presumable direct effect. However, they cannot be indicated as a therapeutic regimen for the low eradication rate. Disclosure of Interest: All authors have declared no conflicts of interest.

P1259 EFFECTIVENESS AND SAFETY OF PYLERA® IN PATIENTS INFECTED WITH HELICOBACTER PYLORI: A LARGE, PROSPECTIVE, REAL-LIFE STUDY
1Gastroenterology Service, ASL BAT Gastroenterology Service, Andria/Italy
2Digestive Endoscopy Unit, ULSA Ato Vicentino, Santarosa/Italy
3Division of Gastroenterology, “S. Caterina Novella” Hospital, gallatina/Italy
4Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
5Italian Association for Gastroenterology in Primary Care (GICA-CP), Feltr/Italy
6Division of Gastroenterology, ASL RM6, Albano Laziale/Italy
7Department Of Medicine And Surgery, University Of Parma, Italy, University of Parma, Parma/Italy
8Division of Gastroenterology, “S. Paolo” Hospital, Bari/Italy
9Private Practice Gastroenterologist, Monopoli/Italy
10Salus’ Home Care, Brindisi/Italy
11Digestive Endoscopy Service, “Valle d’Itria” Hospital, Martina Franca/Italy
12Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rieti/Italy
13Division of Surgery, “P. Colombo” Hospital, ASL RM6, Velletri/Italy
14University Of Parma, Department of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy

Contact E-mail Address: francesco.dimario@unipr.it

Introduction: The new bismuth-containing quadruple therapy is currently advised as a third-line treatment for recurrent H. pylori infection, either in naive or previously treated patients. Our aim was to assess the real-life effectiveness and safety of this therapeutic regimen in a large population of patients who were infected by H. pylori.

Aims & Methods: Consecutive dyspeptic H. pylori-positive patients were enrolled, both naive for treatment and already unsuccessfully treated. Patients were treated with Pylera® (3-in-1 capsules containing bismuth subcitrate potassium 140 mg, metronidazole 125 mg and tetracycline 125 mg) 3 capsules four times a day plus omeprazole 20 mg or esomeprazole 40 mg two times a day for 10 days. Eradication was confirmed using a urea breath test (at least 30 days after the end of treatment). Efficacy and safety were assessed.

Results: Three hundred and twenty patients were included in the study: 131 (40.9%) patients were naïve, and 189 (59.1%) patients with previous failure treatment. H. pylori eradication was achieved in 299 (93.4%), 95% confidence intervals (CI) were 92.2–95.6%. Patients unable to attend hospital appointment (95.4% vs 92.1%, P = 0.336). Treatment-emergent adverse events occurred in 61 patients (19.1%, 95% CI 14.6 to 24.54). They were mild in all cases except in ten, who discontinued the study due to diarrhea (four patients) and diffuse urticarial rash (6 patients).

Conclusion: This bismuth-containing quadruple therapy achieved a remarkable eradication rate in real life, irrespective as first treatment or as a salvage therapy, despite the frequent occurrence of mild adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1260 COMPARISON OF CLARITHROMYCIN- AND LEVOFLOXACIN-CONTAINING TRIPLE THERAPIES FOR FIRST-LINE HELICOBACTER PYLORI ERADICATION IN IRAN

H. Fakheri1, A. Sadoogh2, S. Taheri3

Introduction: Helicobacter pylori (H. pylori) eradication can be considered as a suitable option for first-line treatment in areas with less than 20% resistance to clarithromycin (CI). The aim of the present study was to evaluate the eradication rates to Clarithromycin. On the other hand, resistance to Clarithromycin is increasing in Iran, influencing the efficacy of standard triple therapy in this country. Therefore, regimens containing other antibiotics have to be considered in Iran.

Aims & Methods: One hundred and forty patients with peptic ulcer disease and negative H. pylori infection were randomly divided into two groups to receive either 10-day standard triple therapy (Pantoprazole 40 mg, Amoxicillin 1 g and Clarithromycin 500 mg, all given twice daily) or 10-day Levofloxacin-containing triple therapy (Pantoprazole 40 mg BD, Amoxicillin 1000 mg BD and Levofloxacin 500 mg q.d.). Eight weeks after the treatment, H. pylori eradication was assessed by 14C-urea breath test.

Results: One hundred and thirty-three patients completed the study. According to intention to treat analysis, H. pylori eradication rates were 75.7% (95% CI: 65.7%–85.7%) and 58.5% (95% CI: 47.1%–70%) in standard and Levofloxacin-containing therapies, respectively. Also, per-protocol eradication rates were 83% (95% CI: 74.9%–92%) and 61% (95% CI: 49%–73%), respectively. The rates of severe adverse effects of therapy were 7.1% and 2.9% in the mentioned groups, respectively.

Conclusion: Both Clarithromycin-containing triple therapy and Levofloxacin-containing triple regimen do not seem to be suitable options for first-line H. pylori eradication in Iran. We suggest using Clarithromycin in quadruple regimens such as hybrid or concomitant therapies and reserve Levofloxacin to be used in second-line eradication regimens, as it is recommended by Maastricht V Consensus Report.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Conclusion: Both Clarithromycin-containing triple therapy and Levofloxacin-containing triple regimen do not seem to be suitable options for first-line H. pylori eradication in Iran. We suggest using Clarithromycin in quadruple regimens such as hybrid or concomitant therapies and reserve Levofloxacin to be used in second-line eradication regimens, as it is recommended by Maastricht V Consensus Report.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

TUESDAY, OCTOBER 31, 2017: 09:00-17:00

SMALL INTESTINAL 2 - HALL 7

P1261 EFFICACY AND TOLERABILITY OF REBAMIPIDE IN TRIPLE THERAPY FOR ERADICATION OF HELICOBACTER PYLORI: A RANDOMIZED CLINICAL TRIAL

S. S. Vyalov
Gastroenterology, Peoples Friendship University of Russia, Moscow/Russian Federation

Contact E-mail Address: svyalov@mail.ru

Aims & Methods: We aimed to determine eradication rate, the effectiveness and advantage of rebamipide in triple eradication therapy of H. pylori infection. Subjects comprised patients undergoing eradication therapy for H. pylori infection in clinics. Patients with a history of eradication therapy, gastrectomy, or allergy to medications in triple therapy were excluded. Written informed consent was obtained for each patient. This trial was performed as a randomised open-label study, and the permission was granted ethical approval (approval 1610-013), and was registered in the University Hospital Medical Network Clinical Trials Registry (UMP-IN-CTR) as number UMIN 000025390. Results: Definitive pathological and non-pathological GVHD were found in 22 patients (40%) and 32 patients, respectively, of severe adverse effects. In the analysis of all 54 lesions, for three observers (A, B, and C), sensitivity of the microvilli atrophy in the terminal ileum was 86.4%, 77.3%, and 79.2%, whereas specificity of the appearance were 62.5%, 62.5%, and 86.2%. In addition, the positive predictive value of the appearance was 61.3%, 58.6%, and 82.6%, and negative predictive value (NPV) was 87.2%, 87.2%, and 83.9%, respectively. The kappa coefficient of the inter-rater reliability was 0.85, 0.63, and 0.63 in observers A, B, and C. Conclusion: Microvilli atrophy in the terminal ileum is an effective colonic finding for real-time predictive histological diagnosis of acute intestinal GVHD. We achieved substantial inter-observer agreement for the analysis of microvilli atrophy in the terminal ileum and excellent agreement for predictive histological diagnosis. Disclosure of Interest: All authors have declared no conflicts of interest.

References
Disclosure of Interest:

mucositis, suggesting a possibility for novel treatment of chemotherapy-induced

Conclusion:

EGCG derived from green tea reduced 5-FU induced intestinal

findings showed that crypt dilatation, villus stunting, and villus atrophy were

and villus/crypt ratio (EGCG plus 5-FU, 3.28; 5-FU, 2.31) in EGCG plus 5-FU

group, compared with 5-FU treated group, were significantly higher. mRNA

expression of TNF-α was significantly lower in EGCG plus 5-FU group com-
pared with 5-FU group (P < 0.05)(Figure 2). Figure 1. Effects of EGCG admin-

istration on chemotherapy-induced mucositis in mice jejunum (A) control (B)

H. S. Choi2, E. S. Kim2, B. Keum2, H. J. Chun2, H. S. Lee2, Y. T. Jeen2, C. D. Kim2,

K. C. Yoon1

1Gastroenterology, Korea University Medical Center, Seoul/Korea, Republic of

2Division Of Gastroenterology and Hepatology, Department of Internal Medicine,

Korea University College of Medicine, Seoul/Korea, Republic of

3Division Of Gastroenterology And Hepatology, Department Of Internal Medicine,

Institute of Gastrointestinal Medical Instrument Research, Korea University

College of Medicine, Seoul/Korea, Republic of

4Gastroenterology, Korea Univ. medical center, Seoul/Korea, Republic of

Contact E-mail Address: ytjeen@korea.ac.kr

Introduction: Chemotherapy-induced mucositis is a common complication during

antitumor agent-induced chemotherapy-induced intestinal mucosal injuries. However, studies on EGCG for chemotherapy-induced mucositis have been

scarce.

Aims & Methods: In this study, we aimed to prove the protective effect of EGCG

in murine chemotherapy-induced mucositis model. Twenty-four 8-wk-old male

C57BL/6 mice were randomized to 4 groups: control, EGCG, 5-Fluorouracil

(5-FU), EGCG plus 5-FU. Mucositis was induced by intraperitoneal injection of

5-FU (400 mg/kg). EGCG (50 mg/kg) was administered orally for 5 days from

the day before administration of 5-FU. After 6 days of 5-FU injection, the mice

were sacrificed. Jejunal tissue was homogenized. WBC count was performed

with whole blood from Inferior vena cava of mice. The end points were villus

height, villus/crypt ratio, histologic characteristics, and mRNA expression of

tumor necrosis factor (TNF-α), and interleukin (IL)-6.

Results: In 5-FU group, neutropenia was confirmed by laboratory test (5-FU, 0.650 KµL; 5-FU, 3.517 KµL), indicating significant 5-FU effect. Histologic

findings showed that crypt dilatation, villus stunting, and villus atrophy were

reduced in EGCG plus 5-FU group than in 5-FU group (Figure 1). Quantitative

height (EGCG plus 5-FU, 352 µm; 5-FU, 319 µm) and villus/crypt ratio (EGCG plus 5-FU, 3.26; 5-FU, 2.31) in EGCG plus 5-FU

group, compared with 5-FU treated group, were significantly higher. mRNA

expression of TNF-α was significantly lower in EGCG plus 5-FU group com-
pared with 5-FU group (P < 0.05)(Figure 2). Figure 1. Effects of EGCG admin-

istration on chemotherapy-induced mucositis in mice jejunum (A) control (B)

5-Fluorouracil (5-FU)-group with mild villi destruction and less

crypt dilatation Figure 2. mRNA expression of TNF-

(a) EGCG group (d) EGCG plus 5-FU group with mild villi destruction and less

crypt dilatation Figure 2. mRNA expression of TNF-

-6.

Discussion of Interest: All authors have declared no conflicts of interest.

P1264 INCREASED SUSCEPTIBILITY TO ENTEROPATHOGENIC BACTERIA BY PROTON PUMP INHIBITORS IN THE MURINE MICROBIOME

E. Yasutomi1, N. Hoshi1, J. Inoue1, S. Adachi1, T. Otsuka1, D. Watanabe1,

Y. Ku1, H. Yamari1, M. Ooi1, S. Fukuda2, M. Yoshida1, T. Azuma1

1Division Of Gastroenterology, Department Of Internal Medicine, Kobe University Graduate School Of Medicine, Kobe/Japan

2Institute For Advanced Biosciences, Keio University, Yamagata/Japan

Contact E-mail Address: eiichiroyasutomi@yahoo.co.jp

Introduction: Proton pump inhibitors (PPIs) have become one of the most com-

monly prescribed medical drug due to their strong effects of suppressing gastric acid and high curative effects for acid related diseases. On the other hand, their side effects have been attracting more attention. One of them is the increased inci-
dence of infectious intestinal diseases. Those are mostly reported by clinical

publications, and the exact mechanism has not been clarified. To investigate whether PPIs can increase the susceptibility to peroral enteropathogenic bacterial infection, we used Citrobacter rodentium (C. rodentium), a well-known attaching-effacing-associated pathogen, which is used for the model of human enterohemorrhagic Escherichia coli (EHEC) and enteropathogenic Escherichia coli (EPEC) infection: the major causes of food poisoning.

Aims & Methods: To investigate whether LAZ can influence the steady-state intestinal environment, C57BL/6J mice were divided into two groups, and 8 mg/kg-day of lansoprazole (LAZ group) or saline (control group) were adminis-
terated intraperitoneally for two weeks. The ileal contents and feces were col-

lected before and after LAZ administration. Genomic DNA of the gut microflora

was analyzed by 16S ribosomal RNA (16S rRNA) gene sequencing, and the metabolites were analyzed by a CE-TOFMS platform. To examine the changes of immune cell distribution by LAZ, hematopoietic cells in the lamina propria

were analyzed by flow cytometry. The changes of gene expressions of the ileum

were comprehensively analyzed by microarray. Finally, mice were orally inocu-
lated with C. rodentium after LAZ administration, and the establishment of enteritis was evaluated by body weight loss, histology and inflammatory cytokine

expression examined by real-time PCR.

Results: At steady-state, no prominent change of metabolites and gut microflora

were observed in the feces of LAZ group. On the other hand, the concentrations

of short chain fatty acids, such as butyrate and propionate, were decreased in the

ileum of LAZ group. The result of 16S rRNA analysis also showed that the composition of ileal microflora were different between LAZ and control group. However, it did not show the change of the immune cell distribution in the intestine. The gene expression levels in the ileum were not altered either. Interestingly, the ileal microflora of LAZ group became similar to that of the feces. As mice have a habit of coprophagia, it was assumed that perorally invaded bacteria could sur-

vive and pass through the stomach due to suppression of gastric acid by LAZ.

Accordingly, in the LAZ group, infectious inflammation was established by less

numbers of C. rodentium inoculation, indicating that PPIs could raise the sus-

cceptibility to peroral enteropathogenic bacterial infection.

Conclusion: Our data showed that administration of PPIs could alter the intesti-

nal environment such as microflora and luminal metabolites. However, neither the gene expressions nor distribution of immune cells in the intestinal tissue were affected. It was assumed that the increased risk of peroral enteropathogenic bacterial infection was not because of the immunological modification by PPIs, but it was mainly because of the increased number of pathogenic bacteria passing through the stomach.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1265 EXPRESSION OF AMINO ACID TRANSPORTERS IN AN ANTITUMOR AGENT-INDUCED GASTROINTESTINAL MUCOSAL INJURIES

M. Kodo1, R. Kawashima2, W. Koizumi2, T. Ichikawa2

1Gastroenterology, Graduate school of Medical Sciences, Kitasato University,

Sagamihara/Japan

2Laboratory, WBF Biochemistry, Graduate school of Medical Sciences, Kitasato

University, Sagamihara/Japan

3Gastroenterology, Institute University of Science, Sagamihara/Japan

Contact E-mail Address: m.ss.r.t.m.m.f@gmail.com

Introduction: Because recent studies have demonstrated that amino acid transporters, which transport amino acids into cells, are correlated to various cancers and are major transporters that supply essential amino acids to tumor cells, these transporters are considered as novel biological tumor markers. On the other hand, because anticanicancer agents are frequently used clinically, the number of patients suffering from anticanicancer agent-induced intestinal mucosal injuries is increasing; hence, it is important to take appropriate measures for reducing these side effects. Because the L-type amino acid transporter (LAT) transports a wide range of nonselective amino acids, including essential amino acids, it is considered to be an intestinal transporter that is important for nutrient absorption. Furthermore, the involvement of other amino acid transporters in inflammation has been reported by some researchers.

Aims & Methods: We aimed to clarify the pathophysiological role of an amino acid transporter in gastrointestinal tract inflammation caused by an antitumor agent in this study. The antitumor agent fluorouracil (5-FU) was orally adminis-
tered to mice. The severity of mucositis was assessed based on the length, villus

height, mucus production, cell infiltration, and immune response of the intestinal tract. We measured the mRNA expressions of LATs in the tissues of the small intestines. In addition, we measured the protein expressions among the small intestines using anti-LAT antibodies.

Results: After the administration of 5-FU, the body weight, food intake, water

consumption, and fecal volume decreased; thus, a systemic influence was observed. The length and villus height of the intestinal tract decreased because of the administration of 5-FU, and mucosal damage with histological change was observed. The number of PAS-positive cells decreased in the small intestinal mucosa, and it was assumed that the defense function of the epithelial cells had decreased. In addition, an increase in the mRNA expression of IL-1β, IL-6, and TNF-α in the Peyer’s patch along with an increase in the cell infiltration after the administration of 5-FU significantly enhanced the immune response associ-
ated with the inflammatory cytokine production. Furthermore, on investigating the mRNA and protein expressions of LAT1 and LAT2 in the tissues of the small intestines, we observed that LAT1 expression significantly increased and LAT2 expression decreased after the administration of 5-FU.

Conclusion: It was considered that the uptake capacity of amino acids, such as Gly, Ala, Ser, Thr, Cys, Asn, and Gin, that transported through LAT may be decreased in case of small intestinal mucosal injuries. On the other hand, LAT1 expression associated with the production of inflammatory cytokines suggested that LAT1 is a gastrointestinal inflammatory marker.

Disclosure of Interest: All authors have declared no conflicts of interest.
PI1266 A MUCOUS DEPENDENT MECHANISM OF ACETYLATED SACILYLCACID-INDUCED SMALL INTESTINAL MUCOSAL INJURY IN RATS

Y. Sayama1, O. Handa1, S. Takayama1, R. Mukui1, A. Majima2, Y. Onozawa1, A. Fuku1, T. Okayama1, K. Kamada1, K. Katada1, U. Chiyama1, T. Ishikawa1, T. Takagi2, Y. Naito1, Y. Itoh1

1. Molecular Gastroenterology And Hepatology, Kyoto Prefectural University of Medicine, Kyoto/Japan
2. Kyoto Prefectural University of Medicine Molecular Gastroenterology and Hepatology, Kyoto/Japan

Contact E-mail Address: yosuke-sij@koto.kpu.ac.jp

Introduction: Acetylsalicylic acid (ASA) has been used for the secondary prevention of cardiovascular diseases. Especially, the enteric coated ASA is widely used to prevent ASA-induced gastric mucosal injury. Recent technology such as video capsule endoscopy and balloon endoscopy enabled us to look inside the small intestine in more detail. Consequently, not a few cases of ASA-induced small intestinal mucosal injury have been reported. However, the effective prophylaxis and treatment is not clear yet. Previously, we reported direct detrimental effect of ASA on small intestinal epithelial cells using an in vitro model [1]. However, there are thick mucus layer between intestinal lumen and epithelial cells. The mucus has been reported to prevent foreign objects such as bacteria, medicine and food from epithelial cells.

Aims & Methods: This study was conducted to clarify the role of mucus on ASA-induced small intestinal mucosal injury using a rat model. Male Sprague-Dawley rats, 9 weeks old was used. These rats were divided into four groups; group 1: sham (carboxy methyl cellulose: CMC alone), group 2: polysorbate-80 (P80) alone, group 3: ASA alone, and group 4: P80 plus ASA. CMC and/or 50-200 mg/kg ASA was injected into the proximal duodenum of rats. P80, an emulsifier, which has been reported to reduce mucus thickness [2], was administered drinking water for 2 weeks before ASA treatment. Indeed, P80 also reduced the thickness of mucous layer in our analyses. One hour after ASA administration, blue was injected into a vein of rats to visualize small intestinal lesions. Ninety minutes after ASA treatment, the entire small intestine was removed for histological examination. To further investigate the importance of mucus, rebamipide (Reb, 300 mg/kg) or saline were orally administered for one week prior to P80 and ASA treatment. Reb is a gastric muco-protective drug widely used for the treatment of gastric ulcer, and increases mucous secretion by small intestinal goblet cell.

Results: Evans blue method suggested that high-dose ASA (200 mg/kg) induced severe intestinal damage, which was further confirmed by the histological examination. Although lower doses of ASA (50 and 100 mg/kg) did not cause mucosal damage, P80 significantly induced Evans blue exudate and severe mucosal lesions in jejnum at these concentrations, suggesting the pivotal role of mucus in these lesions. Moreover, pre-administered Reb significantly suppressed reducing small intestinal mucus and the exacerbation of ASA-induced mucosal lesions by P80, indicating that mucous is inevitable in the protection of ASA-induced small intestinal mucosal injury.

Conclusions: Preventing mucosal injury might be a useful improvement for the prevention of ASA-induced small intestinal mucosal injury.

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References

PI1268 PREBIOTIC EFFECTS ON HEALTHY AND CHEMOTHERAPY-INDUCED SMALL BOWEL INJURY IN RATS

R. Yazebeck1, R. J. Lindsay2, M. S. Geier3, R. N. Butler4, S. Jaensch5, G. S. Howarth6

1 Flinders Centre for Innovation in Cancer, Adelaide/Australia
2 School Of Animal And Veterinary Science, University of Adelaide, Adelaide/Australia
3 Surgery, Flinders University, Adelaide/Australia

Contact E-mail Address: roger.yazebeck@flinders.edu.au

Aim: A mucosal injury is a severe side-effect of chemotherapy with current deficiency in effective treatments.

Aims & Methods: This study investigated three prebiotics, galacto-oligosaccharide (GOS), mannan-oligosaccharide (MOS) and fructo-oligosaccharide (FOS) for their potential to reduce the severity of 5-Fluorouracil (5-FU)-induced intestinal mucositis in rats. Female Dark Agouti rats (n = 8/group) were orally gavaged with either 5% FOS, GOS, MOS or water (controls) for 16 days, and received an intraperitoneal injection of 5-Fluorouracil (5-FU; 150 mg/kg) or saline (controls), on day 13. Rats were housed in metabolic cages for the duration of the study, and metabolic data was recorded daily. Rats were killed on day 16 and visceral organ weights and lengths were analyzed post mortem. Cytokine detection, villus height and histological severity scores were quantified in haematoxylin & eosin stained sections. Sucrase and myeloperoxidase activity were quantified by biochemical assay. White and red blood cell types were quantified by whole blood analysis. Fecal volatile fatty acids were also measured. Statistical analysis was by one-way ANOVA or Kruskal Wallis and Mann Whitney U test, where p < 0.05 was considered statistically significant. Data are expressed as mean ± standard error of the mean.

Results: %Bodyweight loss was significantly decreased in all treatment groups following 5-FU injection, compared with FOS or pre and post 5-FU compared to saline treated controls (p < 0.05). Ileal villus height was significantly higher in GOS treated rats pre 5-FU (284.6 ± 11.95 μm) compared to respective water controls (240.0 ± 8.33 μm; p < 0.05). Ileal villus height and crypt depth was significantly decreased in all treatment groups after 5-FU injection (p < 0.05) and prebiotic treatment did not significantly modify this parameter. Similarly, jejunal and ileal sucrase activity was decreased in all groups after 5-FU injection (p < 0.05), correlating with histological measurements. Tissue MPO activity was significantly increased post 5-FU injection, reflecting increased neutrophil activation, and was unchanged by prebiotic treatment. Interestingly, MOS and GOS both lowered %circulating neutrophils pre 5-FU compared to water controls (p < 0.05). Pre 5-FU treatment with GOS significantly increased the fecal VFAs acetic acid (16.76 ± 1.22 mM/L) and propionic acid (4.60 ± 0.99 mM/L) compared to saline treated controls (7.73 ± 0.92 mM/L and 3.05 ± 0.28 mM/L respectively; p < 0.05). MOS and GOS treatment also significantly increased fecal acetic and propionic acid post 5-FU compared to water control (p < 0.05).

Conclusion: Our study has found that prebiotics, MOS, GOS and FOS modified both alone and in combination, during the repair phase of intestinal mucositis, their potential to reduce the severity of 5-FU-induced intestinal mucositis in rats. Female Dark Agouti rats (n = 8/group) were orally gavaged with either 5% FOS, GOS, MOS or water (controls) for 16 days, and received an intraperitoneal injection of 5-Fluorouracil (5-FU; 150 mg/kg) or saline (controls), on day 13. Rats were housed in metabolic cages for the duration of the study, and metabolic data was recorded daily. Rats were killed on day 16 and visceral organ weights and lengths were analyzed post mortem. Cytokine detection, villus height and histological severity scores were quantified in haematoxylin & eosin stained sections. Sucrase and myeloperoxidase activity were quantified by biochemical assay. White and red blood cell types were quantified by whole blood analysis. Fecal volatile fatty acids were also measured. Statistical analysis was by one-way ANOVA or Kruskal Wallis and Mann Whitney U test, where p < 0.05 was considered statistically significant. Data are expressed as mean ± standard error of the mean.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
[1] Flinders Centre for Innovation in Cancer, Adelaide/Australia
[2] School Of Animal And Veterinary Science, University of Adelaide, Adelaide/Australia
[3] Surgery, Flinders University, Adelaide/Australia

P1269 THE RELATION OF CHEMOKINE RECEPTOR CXCR3 AND GUT-LYMPHOCYTE GUT-HOMING MARKERS IN CROHN’S DISEASE PATIENTS

A. T. Do1, A. Shah, E. Shanahan2, P. Gashemi2, T. Hansen2, N. Koloski2, S. Keely2, N.J. Talley1, G. Holmman2
1Faculty Of Medicine, The University Of Queensland, Woolloongabba/Australia
2Princess Alexandra Hospital, Department Of Gastro and Hepatology, Woolloongabba/Australia/QLD

Introduction: Crohn’s disease has been thought to be caused by abnormal immune responses affecting many parts of digestive tract in which T1 cells act. The recruitment of T1 cells is regulated by interaction of their expression of chemokine receptor CXCR3 and its ligands. There have been many IBD murine models showing the increase of CXCR3 expression and its roles on the disease promotion. However, there are limited evidences in the roles of CXCR3 in human IBD. In fact, a small study in large bowel in a cohort of 10 Crohn’s disease patients showed lower expression of CXCR3 on T lymphocytes, compared to colon cancer patients. In terms of inhibition of T-lymphocyte migration into intestine in IBD patients, anti α4β7 (Vedolizumab) therapy is currently shown to be effective.

Aims & Methods: Our study aimed to assess expression of CXCR3 by different subsets of small intestinal lamina propria T-cells and its association with a4 and b7 integrins expression (CD) patients. Total of 56 duodenal biopsies were obtained from CD (n = 15), functional dyspepsia (FD)/irritable bowel syndrome (IBS) (n = 24) or iron deficiency patients (n = 17) with ethical approval. Lamina propria (LP) cells were isolated from biopsies using EDTA, collagenase and granzyme B centrifugation with Ficol. Expression of CXCR3, a4 and b7 on isolated T-lymphocytes was examined by flow cytometry. Statistical significance was assessed using T-test or Spearman correlation.

Results: The expression of CXCR3 on CD4 lymphocytes was significantly lower (75.8%) compared to 61.6% in control group (FD/IBS deficiency). Although the expression of CXCR3 on CD8 lymphocytes was higher than CD4 lymphocytes, it was different between CD and other group (75.8% in CD patients vs 82.2% in controls). Similar observation was obtained on the double positive CD4 and CD8 lymphocytes. Interestingly, only expression of CXCR3 on CD4 lymphocytes positively correlated with expression of the gut-homing integrins, a4 and b7.

Conclusion: These observations showed significant expression of CXCR3 across different subsets of immune cells which is unrelated disease activity. The consistently higher expression seen in CD8⁺ lymphocytes compared to CD4 lymphocytes. An unexpected reduction of CXCR3 expression was seen in small intestinal of CD patients, which associated with gut-homing integrins. This result showed CXCR3 expression may play a role in migration of CD4 lymphocytes but not CD8 lymphocytes into duodenum in relation with integrins, a4 and b7. However, CXCR3 expression on CD4 lymphocytes in CD patients’ small intestine may have protective role. This propose further study to clarify.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1271 METHODOLOGICAL QUALITY OF CLINICAL PRACTICE GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN USING THE APPRAISAL OF GUIDELINES FOR INTEGRATIV

A. Maru Saito1, J.C. Herrera Rodriguez1, R. Rojas Galarza1
1Dept. Of Pediatrics, U Peruana Cayetano Heredia, Lima/Peru

Contact E-Mail Address: aldo.maruy@gmail.com

Introduction: Acute Gastroenteritis (AGE) is one of the diseases that most frequently affects paediatric population. Successful treatment in AGE has been shown either in vivo or in vitro. There is a need to investigate the role of probiotics in prevention and treatment of its complications; every day, we find more publications on the use of probiotics to decrease its duration. Probiotics have gained greater importance because some of them report benefits. We look for Clinical Practice Guidelines (CPG) that recommend their use in AGE. The AGREE II instrument was developed to address the issue of variability in guideline quality, so it is a tool that assesses the methodological rigour and transparency in which a guideline is developed.

Aims & Methods: To assess the methodological quality of clinical practice guidelines (CPG) on the use of probiotics in infant diarrhoea. The search was conducted in December 2016, of CPG based on the evidence, the last 10 years and as contaminants in drinking water, has become a public health problem. Most of these substances are considered as endocrine disruptors and their daily consumption is likely to be severe and irreversible consequences. Indeed, preliminary studies have shown that chronic exposure to low doses of chlorpyrifos (CPF) causes intestinal imbalance (dysbiosis) in vitro.

Aims & Methods: The objective of this study is to evaluate the preventive potential of a probiotic (mulin) in co-exposure with the CPF on the intestinal dysbiosis, the bacterial translocation and the integrity of the intestinal mucosa. For this we used an in vitro system: the SHIME® (Simulator of the Human Microbial
Intestinal Ecosystem). The SHIME® consists of series of fermenters, mimicking the gut environment from the stomach to the colon. The SHIME® was exposed to a daily dose of 3.5 mg of CPF, combined with 10 g of inulin for 30 days. The samples were collected at day 0 (baseline, without CPF or inulin), D15 and D30 to determine the profile and microbial metabolism.

Results: Contrary to the previous results with CPF alone showing dysbiosis, prebiotic supplementation seems to reestablish CPF-induced imbalance, particularly in the potentially pathogenic microflora (Staphylococcus), which an increase in short term (D15: p < 0.001), and a recovery at D30. (difference vs D15: p < 0.001; p < 0.05). Inulin also benefitted the fermentation profile, with higher production of volatile fatty acids (VFA), especially propionic acid and butyric acid. Conclusion: The CPF/inulin co-exposure therefore had a positive impact on bacterial profile and metabolism, suggesting that prebiotic supplementation could reduce some intestinal damages caused by an exposure to CPF.

Perspective: In a second step, the Caco-2/TC7 cell line, which mimics a functional human intestinal epithelium, will be exposed to samples from the colic fermenters associated with CPF and inulin. The study will aim to determine the impact on the epithelial barrier.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1273 THE DIET FEATURES OF DIARRHEA PREDOMINANT IRRITABLE BOWEL SYNDROME PATIENTS WITH SMALL INTESTINAL BOWEL OVERGROWTH

W. Hei, Z. Liu, K. Wang, W. Zheng, L. Duan
Gastroenterology, Peking University Third Hospital, Beijing/China

Contact E-mail Address: weihui2012@bjmu.edu.cn

Introduction: Lactulose methane and hydrogen breath test (LMHBT) is now widely used in assessing small bowel bacterial overgrowth (SIBO) and irritable bowel syndrome (IBS). SIBO and IBS have similar clinical symptoms such as flatulence, bloating, abdominal pain. Although there is no clear relationship between IBS and SIBO yet, they are both in relationship with dysbiosis. Diet is associated with disease closely, especially for gastrointestinal diseases. Different dietary structures have different effects on the structure, metabolism and function of gut microbiota. Reduce fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAPs) diet can release parts of IBS symptoms obviously. There were rare reports for the effects of diet on LMHBT, especially for high-fat diet. Whether diet manipulation can influence the diet on intestinal microbiota profiles in IBS-D or SIBO patients. High fat diet may change the intestinal microbiota profiles and SIBO can be reported in the past researches, most of which were animal experiments, lacking of effects on the clinical manifestations and intestinal microbiota profiles in patients with IBS-D, especially for high-fat diet.

Aims & Methods: We aimed to analyze the characteristics of diet and lactulose methane and hydrogen breath test (LMHBT) in patients of diarrhea predominant irritable bowel syndrome (IBS-D) who may understand small bacterial overgrowth (SIBO), and comparing with health controls. IBS-D patients (18–65 years old), who met Rome III criteria were enrolled in Gastrointestinal outpatient clinic of Peking University Third Hospital from June 2017 to May 2018. Health volunteers were enrolled as control group. All subjects underwent colonoscopy to exclude colonic organic disorders. All subjects completed the case report form (CRF), IBS symptom severity scale (IBS-SSS), the MOS item short form health survey (SF-36). The patients were divided into IBS-D with SIBO (IBS-S) group and IBS-D without SIBO (IBS-N) group according to the LMHBT. Diet information was collected by food frequency questionnaire (FFQ) and three days recalls. The high fat diet is defined as the daily total calories supplying from fat is more than 50%.

Statistical analysis were performed by SPSS 20.0 software, P < 0.05 was considered statistically significant.

Results: Eighty-eight IBS-D patients and 32 HC were enrolled. The positive rate of LMHBT in IBS-D was significantly higher than that of HC [39.8% (35/88) vs. 12.5% (4/28), P = 0.005]. The 28 HC with negative LMHBT were enrolled in the following analysis. There were no significant differences in age and gender ratio among IBS-P, IBS-N and HC. The BMI of IBS-P was significantly lower than that of IBS-N [21.57 ± 0.54 vs. (23.30 ± 0.53)kg/m², P = 0.032]. High fat diet IBS-D patients and along with IBS-P had higher abdominal pain scores. The proportion of dietary protein and carbohydrate in IBS-D was significantly higher than that of HC (14.39% vs.12.22%, P = 0.001; 53.94% vs. 46.25%, P = 0.003, respectively), while the intake of fiber was a little lower than HC [(16.85 ± 1.54) vs. (21.29 ± 3.07)g/d, P = 0.169]. The proportion of diet fat was significantly higher in IBS-P than IBS-N [47.19 ± 2.62% vs. (40.74 ± 1.66%), P = 0.013]. IBS-D patients had more high fat diet individuals than IBS-N [37.1% (13/35) vs. 20.8% (11/53), P = 0.088]. (3) The positive rate of LMHBT in IBS-D was significantly higher than that of HC [39.8% vs. 12.5%, P = 0.005]. IBS-D patients with high fat diet had higher LMHBT positive rate than that of non-high fat diet patients [54.2% (13/24) vs. 17.2% (11/64), P = 0.001]. The baseline of breath methane in IBS-P was significantly higher than that of in IBS-N [8.69 ± 0.39] vs. (6.39 ± 0.47)ppm, P = 0.002]. Breath methane peak value was positively related with the fat proportion of diet (r = 0.413, P = 0.022).

Conclusion: High fat diet might be one of the risk factors for IBS with SIBO.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1274 IS THERE AN ASSOCIATION BETWEEN ENTERIC METHANE (CH4) PRODUCTION AND SYMPTOMS IN PATIENTS WITH UNEXPLAINED GI SYMPTOMS

A. Shah1, P. Ghasemi2, E. Shanahan1, G. Macdonald1, L. Fletcher3, M. Morrison1, M.P. P. Jones1, G. Holtmann1
1Department Of Gastroenterology & Hepatology, University of Queensland, Faculty of Medicine and Biomedical Sciences, Australia & Metro South Health Service & Translational Research Institute, Brisbane/Australia
2Department Of Gastroenterology And Hepatology, Princess Alexandra Hospital, Queensland Health, Brisbane/Australia
3University of Queensland, Diamantina Institute, Microbial Biology and Metagenomics, Brisbane/Australia
4Psychology, Macquarie University Psychology, North Ryde/Australia

Contact E-mail Address: ayesha17@gmail.com

Introduction: Alterations to the gut microbiota and bacterial translocation have been implicated as relevant factors for the progression of chronic liver disease (CLD). While the sequence of events leading to translocation remains unclear, deficiencies in local host immune defences, increased permeability of the intestinal mucosal barrier and dysbiosis of the gut microbiota are suggested to play a role. Small intestinal bacterial overgrowth (SIBO), in which an excessive and/or abnormal type of bacteria is present in the small bowel has been implicated as a potential factor in translocation. However, systematic assessments of the extent of SIBO in CLD remain limited. We therefore aimed to compare the prevalence of small intestinal bacterial overgrowth (SIBO) in patients with chronic liver disease (CLD) and controls.

Aims & Methods: Using the search terms ‘small intestinal bacterial overgrowth (SIBO)’ and ‘chronic liver disease (CLD)’ or ‘small intestinal bacterial overgrowth (SIBO)’ and ‘cirrhosis’, 19 case-control studies that met inclusion criteria were identified. Data were extracted to calculate prevalence rates and 95% confidence intervals (CI).

Results: The final dataset included 1,000 adult patients with CLD and 488 controls. Nine studies employed glucose breath tests (GBT), four lactulose breath tests (LBT) and 10 methane and hydrogen breath test (LMHBT). Across all testing methods, the prevalence of SIBO in patients with CLD was 38.9% (95% CI 36.9–40.9) compared to 9.8% (95% CI 7.5–12.8) in controls. The prevalence of SIBO in CLD was increased as compared to controls (RR = 7.15, 95% CI 4.9–10.4). In patients with cirrhosis the prevalence of SIBO was 40.1% (95% CI 36.4–43.8) compared to 7.3% (95% CI 4.9–10.8) in controls. Nine studies performed PCR. Across all testing methods, the prevalence of SIBO in CLD remained limited. We therefore aimed to compare the prevalence of small intestinal bacterial overgrowth (SIBO) in patients with chronic liver disease (CLD) and controls.

Conclusion: Regardless of the diagnostic modality, prevalence of SIBO is significantly increased in patients with CLD when compared to controls. It is notable that culture-based detection leads to a higher prevalence in CLD, suggesting breath tests are more sensitive. Given the levels of SIBO detected, further studies need to explore the role of intestinal dysbiosis for the progression of CLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
**Introduction:** In humans, enteric methane (CH₄) production is highly variable and related to the gastrointestinal microbiome and diet. Previous work suggests that CH₄ production is more common in patients with ‘constipating’ conditions such as encopresis and diverticulosis. We aimed to explore the link between gastrointestinal symptoms breath CH₄ exhalation in patients with unexplained GI symptoms.

**Aims & Methods:** Consecutive patients (n = 100) with unexplained GI symptoms underwent a combined H₂/CH₄ breath test after ingestion of 75 g of glucose. H₂ and CH₄ were measured by Breathex microlyser (Quintron, USA). Gastrointestinal symptoms were assessed utilising the (Structured Assessment of Gastrointestinal Symptoms Instrument (SAGIS). The association between methane exhalation and symptoms during the 2 weeks prior the test were evaluated using non parametric test.

**Results:** 100 consecutive patients (55%), aged 52.2 ± 15.7 years (mean ± SD) were included. Of these, 14 with positive GBT and 19 without SAGIS data were excluded, resulting in 67 data-sets available for analysis. Methane peak and methane baseline values were highly correlated (r = 0.96, p < 0.001). Methane peak (and baseline) were inversely correlated with the SAGIS diarrhoea score (r = 0.35, p < 0.01, Figure 1). Contrary to current opinion, CH₄ exhalation was not associated with constipation (r = 0.1, P > 0.4). In addition, excessive belching and acid eructation were significantly associated with the baseline and peak CH₄ exhalation (r all <0.3, p all <0.04).

**Conclusion:** There is an inverse association between CH₄ exhalation and diarrhoea symptoms. At the same time, CH₄ is associated with bloating and acid eructation. These data suggest that CH₄ or metabolic products from CH₄ producing microbes modulate human gut function.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

**P1275 CELIAC DISEASE AND POSITIVE IGA TISSUE TRANSGLUTAMINASE IN PATIENTS WITH DISTAL RADIUS AND ANKLE FRACTURE: A CASE-CONTROL STUDY**

A. M. Hjelle1, P. F. Mielenk1, G. S. Tell1, K.E.A. Lundin2, R. M. Nilsen3, E. Apalset1

1Department Of Rheumatology, District General Hospital of Forde, FORDE/Norway
2Department Of Global Public Health And Primary Care, University of Bergen, Bergen/Norway
3Gastroenterology, Oslo University Hospital, Oslo/Norway
4Department Of Health And Social Sciences, Western Norway University of Applied Sciences, Bergen/Norway
5Department Of Rheumatology, Haukeland University Hospital, Bergen/Norway

**Contact E-mail Address:** myhreanja@hotmail.com

**Introduction:** The prevalence of osteoporosis is higher among patients suffering a distal radius fracture than in healthy controls [1]. Celiac disease (CD) is associated with low bone mineral density [2], and overall findings indicate an increased risk of fracture in CD patients [3, 4]. This study is to our knowledge the first case control study investigating whether there is a higher prevalence of CD in adult patients suffering a peripheral fracture (distal radius or ankle) than in healthy age- and sex matched controls.

**Aims & Methods:** Main objective was to investigate if patients with a recent fracture of the distal radius or ankle have a higher risk of having CD than healthy controls. 400 consecutive patients over the age of 40 with acute distal radius fracture (n = 293) or ankle fracture (n = 107) were included in a case control study by referral from the orthopedic department at Forde General Hospital, Norway. The controls were 197 age- and sex- matched subjects from Sogn and Fjordane County identified from the National Population Registry, with no previous fracture history. BMD of the hips and spine was measured and history of previous fractures, comorbidities, medication, life-style factors, body mass index (BMI) and nutritional factors were registered. Serum analysis to detect presence of osteoporosis including IGA tissue transglutaminase was performed.

**Results:** See table.

**Conclusion:** The prevalence of celiac disease was in preliminary analyses not significantly higher among patients suffering a distal fracture (3.5%) than among healthy age- and sex- matched controls (2.8%). Osteoporosis and low Vitamin D levels are significant risk factors for distal radius fracture, but this is not the case with ankle fractures.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

**P1276 INTERLEUKIN IBETA, CLAUDIN AND OCCLUDIN CONCENTRATIONS IN SERUM AND AUTONOMIC NERVOUS SYSTEM ACTIVITY AMONG NEUROLOGICAL ASYMPTOMATIC CELIAC DISEASE PATIENTS–PILOT STUDY**

M. Zvolinska-Wcislo1, M. Przybylska-Felci1, A. Furgała1, B. Brzozowski1, O. Kaczmareczyk2, K. Gil3, T. Mach4

1Department of Clinical Dietetics, Chair of Gastroenterology, Hepatology and Infectious Diseases, Jagiellonian University Medical College, Krakow, Poland, Krakow/Poland
2University Hospital in Krakow, Poland, Krakow/Poland

**Contact E-mail Address:** mzwcislo@su.krakow.pl

**Introduction:** Celiac disease (CeD) is an immune disorder, triggered by gluten intolerance in genetically susceptible patients. Clinical outcome includes severe gastrointestinal manifestations, including neurologic complications in about 10% of patients. Previous studies confirmed the subclinical changes of an abnormal nervous system (ANS) activity resulting to impaired gastric myoelectric activity. In CdE disturbances of parasympathetic-sympathetic balance of the ANS activity with sympathetic dominance is observed. Tight junctions impairment is one of postulated pathomechanism in CeD and its complications. Transmembrane proteins of tight junctions include claudin and occludin. There is lack of publications referring to soluble claudin and occludin concentrations in CeD. Interleukin-1 beta (IL-1beta) is an important mediator of the, and there are no data concerning on its influence on gastric myoelectric activity and ANS activity in CeD.

**Aims & Methods:** The study was aimed to evaluate occludin, claudin and IL-1beta concentrations in serum in neurologically asymptomatic patients with CeD and its correlation with selected parameters of ANS activity markers (heart rate variability, electogastrography HRV) and gastric myoelectric activity (EGG). Thirty four patients with CeD (70% females, mean age 34 years, 41.2±16.6) without neurological symptoms tested for occludin, claudin, IL-1beta concentrations in serum using ELISA, and HRV and EGG.

**Results:** Biochemical parameters. Patients with CeD presented with lower average level of occludin (1.41(0-2.9) ng/ml) than healthy subjects (1.68(0.39-4.8) ng/ml) (P = 0.07, the Mann-Whitney test (2)). No significant impact of CeD on the average results of IL-1 beta concentrations was observed (P = 0.44, the Mann-Whitney test). The rest HRV. In the celiac group the assessment of HRV revealed a negative significant correlation of claudin concentration and very low frequencies (VLF-RRI; Spearman’s rank correlation coefficient: r=-0.51, P = 0.018) as well as positive correlation between IL-1beta and LF/HF was demonstrated (r=0.51, P = 0.032). Statistically significant, negative and strong correlation of IL-1 beta concentration and DP (Dominant Power of EGG) (r = -0.58, P = 0.038) was shown.

**Conclusion:** ANS activity measured by EGG and HRV seems to be correlated to presence of IL-1beta. In celiac group the serum concentration of claudin and occludin do not correlate to ANS activity. Due to former research on autonomic imbalance in CeD with sympathetic overdrive, the hypothesis of influence of IL-1beta on ANS activity should be considered.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

**P1277 WIDE HETEROGENEITY AND HIGH MORTALITY IN UNDEFINED AND NON-COELIAC REFRACTORY SPRUE: A RETROSPECTIVE EVALUATION OF 7 CASES**

A. Schiappatti, F. Biagi, M. Zuffada, G. Maieron, G.R. Corazza

University of Pavia, Pavia/Italy

**Contact E-mail Address:** salimana@hotmail.it

**Introduction:** Small bowel villous atrophy (VA) is mainly related to coeliac disease (CD) that develops in HLA DQ2/DQ8 positive patients and improves on a gluten-free diet. Other forms of VA unrelated to CD are common variable immune-deficiency, autoimmune enteropathy, small bowel malignancies, medication-related enteropathies, HIV, tropical sprue, and giardiasis [1–3]. However, there are also forms of VA in which CD can be neither confirmed nor excluded and there are forms of VA in which, although CD is excluded, a definitive diagnosis cannot be made. Some years ago, we coined the terms undefined sprue (US) and non-coeliac refractory sprue (NCRS) to define these two
conditions [4]. Although other Authors described similar patients [2,3], it is still uncertain whether CRS are two independent conditions or whether they are two faces of the same coin. Alternatively, they could be umbrella terms covering one or more atrophic enteropathies still awaiting to be identified, as was the case of olmsertan-associated enteropathy until a few years ago. Aim was to clarify the nature of these forms of VA.

Results: 7 patients (2F, age at diagnosis of VA 46±26 years, all with severe malabsorption) were identified, 3 were DQ2 positive and so were diagnosed as UC: case 1 (F, 32 years) died of ulcerative jejunitis 8 years later; case 2 (M, 38) died of pulmonary embolism complicating systemic candidiasis 1 year later and case 3 (M, 71) died of intestinal lymphoma after 4.5 years. The remaining 4 patients were HLA DQ2/DQ8 negative, so a diagnosis of NCRS was made. 3 were DQ3 negative: 4 case, (F, 61) died of EATL type 2 after 4.5 years; case 5 (M, 38) died after 2 years after diagnosis of VA, and in good general conditions; case 6 (M, 69) is still alive but could be affected by a form of enteropathy due to celiacata. He is in good clinical condition and has been refusing follow-up. The last patient, case 7 (M, 29) is DQ3+7 positive. He is still alive 11 years after the diagnosis of VA, although complains of diarrhoea.

Conclusion: We described 7 patients with VA unrelated to CD or other known enteropathies. Although overall mortality among them is very high (57%) and mainly due to lymphoproliferative disorders (5/7) the 4 DQ2/DQ8 negative patients are alive many years after the diagnosis of VA with no evidence of malignancy. This suggest that these 7 patients are not affected by the same condition. We speculate that DQ2 positive patients who died of lymphoma could be affected by a form of CD who escaped diagnosis if get complicated. However, we feel that the D3Q2/8 negative patients with long survival are affected by a still unidentified form of VA.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1278 EVERYDAY LIFE RESTRICTIONS CAUSED BY LONG-TERM TREATED CELIAC DISEASE: PREVALENCE AND ASSOCIATED FACTORS

L. Kivelä1, S. Alin2, S. Kröger1, K. Kaukinen1, K. Kurppa3
1Tampere Center For Child Health Research, University of Tampere, University of Tampere/Finland
2School Of Medicine, University of Tampere, Tampere/Finland

Contact E-mail Address: laura.kivela@fimnet.fi

Introduction: Strict gluten-free diet (GFD) in celiac disease is burdensome and difficult to maintain, which might predispose to poor dietary adherence and impaired quality of life. We aimed to evaluate adult patients’ experience of living with celiac disease diagnosed in childhood, and identify factors associated with possible life restrictions caused by the disease.

Aims & Methods: 232 adults (women 69%, median age 27.0 yr) with a childhood diagnosis of celiac disease fulfilled a questionnaire evaluating their experiences about general health and lifestyle, possible co-morbidities, adherence and attitudes towards GFD and long-term follow-up of celiac disease. In addition, they covered one or more atrophic enteropathies still awaiting to be identified, as was the case of olmsertan-associated enteropathy until a few years ago. The intergroup comparison among HS patients showed that BMI (OR 3.8; p=0.001) and waist circumference (OR 6.9; p=0.001) were the only independent factors for the development of HS (OR 1.97; p=0.01 for G carriers and OR 6.9; p=0.001) at diagnosis, whereas the groups did not differ in age, gender or other clinical and histological presentation. Current age (OR 1.2; p=0.215) and time since diagnosis (18.6 vs 17.9 yr; p=0.468) were also comparable, as well as were self-experienced general health and concern about health, presence of co-morbidities and complications, smoking, physical exercise, socioeconomic status, membership of celiac society and presence of celiac disease in relatives. There was also no difference in specific gastrointestinal symptoms as assessed by GRSRS scores, but patients considering the disease restrictive reported more overall symptoms possibly related to celiac disease than those without restrictions (32% vs 17%; p=0.007). Furthermore, dietary adherence (strict GFD in 82%, p=0.770) and experienced adhering to the diet more challenging (somewhat difficult 33% vs 7%, p<0.001) and had significantly lower PGWB vitality scores (median 17 vs 18, p=0.023).

Conclusion: Almost half of the patients diagnosed in childhood experienced celiac disease to cause marked restrictions in adulthood. This was associated with current symptoms, lower vitality scores and difficulties to maintain GFD. Patients with severe symptoms and anemia at diagnosis might require special attention and tailored follow-up in these circumstances.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1279 SYSTEMATIC REVIEW OF THE ECONOMIC BURDEN OF COELIAC DISEASE

N. Belanger1, A. J. Taylor2, D. A. Leffer3, E. S. Mearns4, M. Gerber5
1IBM Watson Health, Boston/United States of America/MA
2Takeda, London/United Kingdom
3Takeda, Cambridge/United States of America/MA

Contact E-mail Address: aliki.taylor@takeda.com

Introduction: The prevalence of diagnosed coeliac disease (CD) has rapidly increased in recently developed countries in the last 30 years. The economic burden of diagnosing, managing, and monitoring CD can be substantial but is poorly understood. To assess the economic burden of CD, we systematically reviewed current evidence quantifying economic costs and health resource utilization (HRU) for CD in North America and Europe.

Aims & Methods: Searches of Medline, Embase, EconLit, the Cochrane Library, and conference abstracts systematically identified literature published in English during the last 10 years assessing direct and indirect costs, cost-effectiveness studies and economic evaluations of screening and diagnostic tests for CD. We updated this search in March 2019.

Results: Of 33 studies meeting criteria for inclusion, most (20) were from Europe, and most (18) reported or modeled costs associated with screening and diagnosis. Cost per positive CD report of screening patients already undergoing upper gastrointestinal biopsy for other indications, such as anaemia or irritable bowel syndrome, ranged from approximately $1,300 in Canada to more than $44,000 in the Netherlands (costing year not reported). In these populations, screening was judged to be cost-effective with various strategies combining diagnostic modalities, including serology then biopsy, compared to no screening.

Discussion: Strategies using both endoscopy/biopsy or serology alone were not considered cost-effective. Direct annual excess costs to a US payer per diagnosed CD patient ranged from $600 to $8,800 (SUS 2007) to more than a person without CD, chiefly due to outpatient care, with higher costs among patients with poor disease control. High use of outpatient care is also reflected in studies of HRU, although hospitalization, emergency visits and medication use are also more common in individuals with CD than in controls. After initiation of a gluten-free (GF) diet, patients visit primary care providers less often, but use more medications. Patients often pay out of pocket for gluten-free (GF) foods, which cost 240–518% more than gluten-containing equivalents. Three studies on abstention from Scandinavia found fewer days missed from school and work following diagnosis and initiation of a GF diet.

Conclusion: Most economic studies of CD have focused on the cost of screening and diagnosis, especially in Europe. Methods of screening generally are considered cost-effective when they combine diagnostic modalities, such as serology then biopsy, in people being evaluated for symptoms. Much of the cost to a payer of managing CD derives from outpatient care, especially for patients with poorly controlled disease. Patients on a GF diet lose fewer days from work or school but pay higher costs for GF foods.

Disclosure of Interest: A.J. Taylor: Aliki Taylor is employed by Takeda Development Centre Europe, London, UK. D.A. Leffer: Daniel Leffer is employed by Takeda Pharmaceuticals International Co, Cambridge, USA. M. Gerber: Michele Gerber is employed by Takeda Pharmaceuticals International Co, Cambridge, USA. All authors have declared no conflicts of interest.

References

P1280 PNPLA3 R573S/H4092A POLYMORPHISM PREDICTS THE DEVELOPMENT AND THE SEVERITY OF HEPATIC STEATOSIS, BUT NOT METABOLIC SYNDROME, IN PATIENTS WITH CELIAC DISEASE

N. Imperatore1, R. Tortora2, A. Rispo1, A. Alisi2, A. Crudele3, F. Ferretti3, V. Nobili4, L. Miele5, N. Gerbino5, V. Di Martino5, N. Caporaso5, F. Morisco5
1Gastroenterology, Department of Clinical Medicine and Surgery, School of Medicine Federico II of Naples, Naples/Italy
2Liver Research Unit - Bambino Gesù Children’s Hospital, IRCCS, Rome, Rome/Italy
3Hepato-metabolic Unit - Bambino Gesù Children’s Hospital, IRCCS, Rome, Rome/Italy
4Catholic University, Rome, Rome/Italy

Contact E-mail Address: nicola.imperatore@alice.it

Introduction: Metabolic syndrome (MS) and hepatic steatosis (HS) are frequent in patients with celiac disease (CD) after commencing gluten-free diet (GFD), but data about predictive factors for such a condition are still scarce.

Aims & Methods: We aimed to evaluate the role of PNPLA3 rs738409 in the development of MS and HS in CD patients after starting GFD. From June 2014 to September 2016 we consecutively enrolled all patients referred to academic gastroenterological centre, suffering from CD, with our without HS. All patients underwent anthropometrics and serological investigations, ultrasonography (US) evaluation to assess the degree and severity of HS and genotyping of PNPLA3 rs738409 polymorphism.

Results: Finally, 370 subjects were enrolled (136 with HS and 234 without HS). Mean age (years) was 51 (18–82) in 194 subjects (52.4%), CD genotype was in 138 subjects (37.3%), while 38 individuals (10.2%) showed the GG genotype. At binary logistic regression, only G and GG alleles were predictive for the development of HS (OR 1.97; p=0.01 for G carriers and OR 6.9; p<0.001 for GG carriers), while BMI (OR 3.8; p=0.001) and waist circumference (OR 2.8; p=0.03) at CD diagnosis were the only independent factors for the development of MS. The intergroup comparison among HS patients showed that
the severe grade of HS was more frequently observed in GG than in CC carriers (p = 0.001, OR 21.8). In each of the last 3 clinic reviews 83% (n = 133) of patients that had osteoporosis, 4 patients were under 50 years old (57%). Of the 81 patients who did not warrant a DEXA scan, 77 results were available: normal in 48% (n = 37), osteopenia in 43% (n = 33) and osteoporosis in 9% (n = 7). Of the 7 patients that had osteoporosis, 4 patients were under 50 years old (57%). Of the appropriate DEXA requests, 25% (n = 7) were normal, 39% (n = 11) had osteopenia and 36% (n = 10) had osteoporosis.

Conclusion: Most CD patients require very little clinical input at their routine appointments. Annual blood checks and adherence to a gluten-free diet are standard enquiries. However, there is a cohort of patients who are not getting their regular blood tests: 33% for bone profile and 25% for haematins. Clinicians tend to order a DEXA in most CD patients because it is easier than attempting to judge an individual’s risk in the setting of conflicting guidelines. The pick-up rate of osteoporosis in 36% of appropriately screened patients (vs 9% in inappropriate scan requests) suggests that targeted screening allows for a more rational and cost-effective use of a limited resource. We hope that the guidelines can now be updated with more clarity for the practitioners who request DEXA scans in CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1243 MONITORING PATIENTS WITH COELIAC DISEASE: WHO ACTUALLY NEEDS A DEXA SCAN?
M. Yalchin, R. Eckersley, T. Coysh, S. Mann
Gastroenterology, Barnet Hospital, DJ/United Kingdom

Contact E-mail Address: m.yalchin@nhs.net

Introduction: Patients with coeliac disease (CD) should be seen annually for a clinical review, blood tests and a DEXA scan if needed1,2. The indication for a DEXA scan is unclear due to conflicting recommendations in current guidelines1–3. The aim of our study was to audit our practice, with a focus on requests for DEXA scans.

Aims & Methods: This was a single-centre, retrospective study of CD patients under the care of 3 clinicians. We accessed the electronic records to identify if haematological and biochemical profiles were being monitored. We also identified when patients had their first DEXA scans and whether or not they were indicated.

Results: Data were collected on 160 patients (Female = 107[67%]). Annual checks of FBC occurred in 94% of patients, vitamin B12 in 74%, folate in 77%, calcium in 85% and vitamin D in 69%. DEXA scans occurred in 74% of patients (n = 119), including 66% (n = 77) who were screened around the time of diagnosis. However, only 24% (n = 28) actually warranted the scan according to guidelines1–3, and 68% (n = 81) did not fulfil criteria for a DEXA. In 8% of patients (n = 10), there was inadequate data. Of the 81 patients who did not warrant a DEXA scan, 77 results were available: normal in 48% (n = 37), osteopenia in 43% (n = 33) and osteoporosis in 9% (n = 7). Of the 7 patients that had osteoporosis, 4 patients were under 50 years old (57%). Of the appropriate DEXA requests, 25% (n = 7) were normal, 39% (n = 11) had osteopenia and 36% (n = 10) had osteoporosis.

Conclusion: Most CD patients require very little clinical input at their routine appointments. Annual blood checks and adherence to a gluten-free diet are standard enquiries. However, there is a cohort of patients who are not getting their regular blood tests: 33% for bone profile and 25% for haematins. Clinicians tend to order a DEXA in most CD patients because it is easier than attempting to judge an individual’s risk in the setting of conflicting guidelines. The pick-up rate of osteoporosis in 36% of appropriately screened patients (vs 9% in inappropriate scan requests) suggests that targeted screening allows for a more rational and cost-effective use of a limited resource. We hope that the guidelines can now be updated with more clarity for the practitioners who request DEXA scans in CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Contact E-mail Address: federica.branchi@gmail.com

Introduction: A life-long gluten-free diet (GFD) is the only available treatment for patients with celiac disease (CD). Adherence to the GFD is associated with symptoms remission, reversal of mucosal atrophy and, possibly, prevention of CD-related complications. However, data on the long-term effects of a good or poor adherence to the GFD are limited.

Aims & Methods: The aim of this study was to assess the rate and accuracy of compliance to a strict GFD in patients with a CD history of more than 30 years and to compare endpoints such as complications, symptoms and histology between patients following a strict GFD and patients not compliant to the diet.

Between 2015 and 2016, data from all patients diagnosed with CD at the Fondazione IRCCS Ca’ Granda before 1985 were retrieved. Patients not undergoing regular follow-up at the clinic were contacted in order to collect recent clinical data. The study was funded by Shire International GmbH, Zug, Switzerland.

Results: Clinical data from 196 patients were collected and analyzed. Patients were divided into 3 groups according to their adherence to GFD: 133 patients reporting a lifelong strict GFD, 29 patients on GFD at the time of follow-up but with a history of at least 5 years of gluten-containing diet (GCD), and 35 patients who reported to be on a GCD. No significant differences were found between groups regarding symptoms and histology at diagnosis, onset of associated autoimmune disorders, family history of CD and compliance to follow up. The onset of complications at follow-up did not significantly differ in the three groups as well. Follow-up histology was available in 63 patients (32.1%). Persistence of villous atrophy was as expected more frequent in patients on GCD as on GFD (46% vs. 73%), however 20% patients had normal histology during long-term GCD. The questionnaire was returned by 90 patients and 66 parents: a slightly better knowledge about the GFD and its behavioral rules was found between patients on lifelong GFD and patients with ongoing or past GCD (p = 0.03).

Conclusion: Poor adherence to the GFD is reported by almost one-third of patients with a long-term history of CD, confirming the high rate of poor compliance to such a strict diet among patients. Poor adherence to the GFD could be due to a major predictor of persistence of villous atrophy, but this does not necessarily imply the development of CD complications. Moreover, results from follow up biopsies showed that a GCD does not imply recurrence of villous atrophy in all patients, attesting the possibility that some CD patients may have a latent tolerance over time.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1285 PATIENTS WITH SHORT BOWEL SYNDROME STRATIFIED BY BASELINE PARENTERAL SUPPORT VOLUME: POST HOCH ANALYSIS OF THE CLINICAL EFFECT OF TEGULUTIDE

P.B. Jeppesen1, S. M. Gabe2, L. D. Seidner3, H. Lee4, C. Olivier5
1Righospitalet, Copenhagen/Denmark
2St Mark’s Hospital, Northwick Park, London/United Kingdom
3Vanderbilt University Medical Center, Nashville/United States of America/TN
4Shire Human Genetic Therapies, Inc, Lexington/United States of America/MA
5Shire International GmbH, Zug/Switzerland

Contact E-mail Address: Palle.Bekker.Jeppesen@regionh.dk

Introduction: Parenteral support (PS) volume needs vary depending on disease severity in patients with intestinal failure associated with short bowel syndrome (SBS-IF). Patient classification has focused on the diagnosis that led to resection and the remnant bowel anatomy.

Aims & Methods: Recently, the idea that grading severity of SBS-IF is based on magnitude of PS volume needs led to this clinical trial data post hoc analysis of patients with SBS-IF based on their baseline PS volume. STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of teguldulide (TED) 0.05 mg/kg/day in patients with intestinal failure associated with short bowel syndrome (SBS-IF). STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of TED 0.05 mg/kg/day in patients with SBS-IF. Plasma citrulline levels at baseline were significantly correlated with remnant small bowel length (R2 = 0.39; p = 0.02) and not with baseline PS volume (R2 = 0.03; p = 0.30; n = 39). The correlation between baseline plasma citrulline and plasma citrulline change at Week 24 was significant (R2 = 0.80; p < 0.0001; n = 39). No correlation was found between change in plasma citrulline levels and change in PS volume at Week 24 with TED (R2 = 0.05; p = 0.16; n = 39). When patients were analysed by bowel anatomy subgroups, significant increases in plasma citrulline were seen with TED but not placebo (Table).

Table: Mean (SD) Change From Baseline at Week 24 in PS Volume and Plasma Citrulline Stratified by Bowel Anatomy

<table>
<thead>
<tr>
<th>No Colon, Stoma Present, Colon-in-Continuity</th>
<th>≥50% Colon, No Stoma, Colon-in-Continuity</th>
<th>Other Bowel Anomalies</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Colon, Stoma Present, Colon-in-Continuity</td>
<td>≥50% Colon, No Stoma, Colon-in-Continuity</td>
<td>Other Bowel Anomalies</td>
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<th>Other Bowel Anomalies</th>
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volume reductions with TED. Plasma citrulline changes with TED may reflect a reduction in urea production with TED.

P1287 LACTULOSE, LACTOSE AND FRUCTOSE INGESTION INDUCES SPECIFIC PATTERNS OF GASTROINTESTINAL SYMPTOMS IN CHINESE SUBJECTS WITH FUNCTIONAL DYSPEPSIA AND IRRITABLE BOWEL SYMPTOMS

V. Tan1, N. H. S. Chu1, C. K. Yao1, P. R. Gibson2
1The University of Hong Kong, Hong Kong/Hong Kong PRC
2Dept. Of Gastroenterology, Alfred Hospital Dept. of Gastroenterology, Melbourne/Australia

Contact E-mail Address: vpetyan@hku.hk

Introduction: Prevalence rates of Functional Dyspepsia (FD) in East Asia are three times higher than Irritable Bowel Syndrome (IBS) rates. Many researchers have suggested that IBS subjects in the region experience their pain and discomfort in the upper abdomen, leading to misdiagnosis as FD.

Aims & Methods: We aimed to compare patterns of gastrointestinal (GI) symptoms in the Chinese population with FD or IBS during provocative hydrogen breath testing (HBT) with lactulose, lactose and fructose. Subjects fulfilling the Rome III classification of FD and IBS, and control subjects with no known GI disorder/symptoms were recruited. All subjects underwent HBT with lactulose (10ml), lactose (25g) and fructose (25g). Subsequent breath tests were performed after a washout period of at least one week. Breath tests were performed after an overnight fast, with the patient sedentary. Breath samples taken every 15 minutes for 3 hours. GI symptoms were recorded during these 3 hours and telephone follow-up 24 hours later.

Results: A total of 353 subjects completed at least one breath test examination and 373 subjects completed all three breath tests. 16%, 55% and 29% were control, FD and IBS subjects. All study subjects were ethnic Chinese. The median age was 53 (Range: 18-76) and 27% [95% CI: 23-32%] were male. 85% [95% CI: 82-89%] of subjects were women. Symptoms induced in a relatively low proportion of healthy controls. Both FD and IBS subjects experienced similar proportions of epigastric pain on consumption of lactulose, lactose and fructose. See Table 3. Subjects with FD experience more belching than subjects with IBS when lactulose (58 vs. 42%, p = 0.011) and lactose (62 vs. 46%, p = 0.014) were ingested, respectively. Subjects with IBS experience significantly more “lower GI” symptoms of abdinal pain and discomfort of loose stools when lactulose was ingested when compared with subjects with FD. In general subjects with IBS experienced both epigastric pain and abdominal pain when any of the three carbohydrate solutions were ingested. Healthy controls experienced minimal symptoms.

Conclusion: Chinese subjects commonly co-produced hydrogen and methane. Ingestion of poorly absorbed sugars induces symptom patterns in patients with FD in similar proportions. Chinese IBS subjects commonly experienced epigastric pain and abdominal pain when any of the three carbohydrate solutions were ingested. Subjects with FD experience more belching than subjects with IBS when lactulose and lactose were ingested.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1288 PATIENTS WITH SHORT BOWEL SYNDROME STRATIFIED BY DIAGNOSIS: POST HOC ANALYSIS OF TEDUGLUTIDE ON FLUID COMPOSITE EFFECT

1Rigshospitalet, Copenhagen/Denmark
2St Mark’s Hospital, Northwick Park, London/United Kingdom
3Mount Sinai Medical Center, New York/New York/States of America/NY
4Charité University Medicine, Berlin/Germany
5Vanderbilt University Medical Center, Nashville/New York/States of America/ TN
6Shire Human Genetic Therapies, Inc., Lexington/United States of America/MA
7Shire International GmbH, Zug/Switzerland

Contact E-mail Address: Pall.Pekker.Jeppesen@regiondh.dk

Introduction: Inflammatory bowel disease (IBD) and mesenteric vascular (Vasc) disease are underlying conditions for intestinal failure associated with short bowel syndrome (SBS-IF). Fluid balance, urine production, and parenteral support (PS) volume are variable among patients with SBS-IF.

Aims & Methods: This is a post hoc analysis of the impact of teduglutide (TED) on fluid composite effect (FCE = sum of urine output volume increase, oral fluid intake reduction, and PS volume reduction) in patients stratified by diagnosis. STEPS (NCT00798967; EudraCT2008-006195-13) was a 24-week, placebo-controlled study of TED 0.05 mg/kg/day in patients with SBS-IF. Three groups were evaluated: SBS-IBD, SBS-Vasc, and Other.

Results: The SBS-IBD group included more patients with stoma (95%; SBS-IBD, 19%; Other, 41%) and fewer with colitis-in-continuity (11%; SBS-Vasc, 78%; Other, 62%). At Week 24 (Table), PS volume reductions were significantly higher in SBS-IBD patients treated with TED vs placebo (P = 0.02) and vs SBS-Vasc patients in the SBS-IBD (P = 0.04) and Other (P = 0.02) groups. Change in FCE was greater in SBS-IBD patients treated with TED vs placebo (P < 0.02) and vs TED patients in the SBS-Vasc (P < 0.01) and Other (P < 0.05) groups.

Table: Components of Fluid Composite Effect at Baseline and Week 24 and Fluid Composite Effect at Week 24 by Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>SBS-IBD</th>
<th>SBS-Vasc</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD), ml/day</td>
<td>TED</td>
<td>PRO</td>
<td>TED</td>
</tr>
<tr>
<td>Baseline</td>
<td>2268 (1480)</td>
<td>3088 (1156)</td>
<td>1827 (982)</td>
</tr>
<tr>
<td>Oral fluid intake</td>
<td>2456 (1176)</td>
<td>1521 (532)</td>
<td>1780 (761)</td>
</tr>
<tr>
<td>Urine output</td>
<td>1160 (160)</td>
<td>191 (57)</td>
<td>191 (57)</td>
</tr>
<tr>
<td>Change at Week 24</td>
<td>202 (38)</td>
<td>246 (80)</td>
<td>168 (51)</td>
</tr>
</tbody>
</table>

Conclusion: TED had the largest absolute effect on FCE in the SBS-IBD group; TED effect on FCE was not as marked in SBS-Vasc or Other patients at Week 24. This research was funded by Shire International GmbH, Zug, Switzerland.

Disclosure of Interest: P.B. Jeppesen: I have served as a consultant and on the speaker bureau for Shire.

S.M. Gabe: I have served as a consultant for Shire. K. Iyer: I have served as a consultant for Shire. U. Pape: I have received grant/research support from and served as a consultant for and on the speaker bureau for Shire.

D.L. Seidner: I have served as a consultant for Shire. H. Lee: I am an employee for Shire. C. Olivier: I am an employee for Shire.

P1289 RESULTS OF A POST HOC ANALYSIS OF BASELINE CHARACTERISTICS AND CLINICAL RESPONSE TO TEDUGLUTIDE IN PATIENTS WITH SHORT BOWEL SYNDROME BASED ON RESIDUAL BOWEL ANATOMY

P.B. Jeppesen1, S. M. Gabe2, D. L. Seidner2, H. Lee3, C. Olivier4
1Rigshospitalet, Copenhagen/Denmark
2St Mark’s Hospital, Northwick Park, London/United Kingdom
3Vanderbilt University Medical Center, Nashville/New York/States of America/ TN
4Shire Human Genetic Therapies, Inc., Lexington/United States of America/MA
5Shire International GmbH, Zug/Switzerland

Contact E-mail Address: Pall.Pekker.Jeppesen@regiondh.dk

Introduction: Intestinal resection resulting in short bowel syndrome (SBS) can lead to intestinal failure (SBS-IF). SBS-IF arises from different aetiologies, including vascular catastrophes and inflammatory bowel disease, resulting in a heterogeneous population.

Aims & Methods: This post hoc analysis reports baseline characteristics and clinical response to teduglutide (TED) in patients based on residual bowel anatomy. STEPS (NCT00798967; EudraCT2008-006195-13) was a 24-week, placebo-controlled study of TED 0.05 mg/kg/day in patients with SBS-IF. Three groups
were evaluated: Group 1 (no colon/stoma present/no colon-in-continuity), Group 2 (≥50% colon/stoma to colon-in-continuity), and Group 3 (other bowel anastomosis). Clinical response was defined as ≥20% reduction from baseline in weekly parenteral support (PS) volume at Weeks 20–24. Data presented as mean (SD).

**Results:** The predominant diagnosis in Group 1 was Crohn’s disease, whereas the predominant diagnosis in Group 2 was vascular complications (Table). Group 1 patients required the highest baseline PS volumes compared with Group 2 or Group 3. TED-induced PS volume reduction (change in L/week) took longer to be realised in Group 2 (Week 12 – 9.9 [1.2]; Week 24 – 2.5 [1.2]) compared with Group 1 (Week 12 – 5.5 [3.8]; Week 24 – 6.4 [4.5]) or Group 3 (Week 12 – 2.7 [1.2]; Week 24 – 5.1 [3.7]). Response rates were higher with TED versus placebo in all groups, but the difference was significant only in Group 1 (76% vs 19%, P < 0.001; Group 2, 56% vs 40%, P = 0.36; Group 3, 57% vs 29%, P = 0.035). Adverse events were reported by 94%, 72%, and 86% of Group 1, Group 2, and Group 3 patients receiving TED, respectively.

**Table: Baseline Patient Characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group 1: No Colon, Stoma Present, No Colon-in-Continuity</th>
<th>Group 2: ≥50% Colon, No Stoma, Colon-in-Continuity</th>
<th>Group 3: Other Bowel Anastomoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>TED (n = 17)</td>
<td>PBO (n = 16)</td>
<td>TED (n = 18)</td>
<td>PBO (n = 20)</td>
</tr>
<tr>
<td>Mean (SD) PS L/week</td>
<td>7.1 (6.7)</td>
<td>5.1 (3.3)</td>
<td>6.2 (6.5)</td>
</tr>
<tr>
<td>Mean (SD) age, year</td>
<td>45.9 (9.7)</td>
<td>42.8 (8.8)</td>
<td>44.0 (10.5)</td>
</tr>
</tbody>
</table>

**Conclusion:** Patients with SBS–IF in Group 1 had the highest baseline PS volume and responded most favorably to TED with PS volume reductions, compared with patients in Group 2 or Group 3. This research was funded by Shire International GmbH, Zug, Switzerland.

**Disclosure of Interest:** P.B. Jeppesen: I have served as a consultant and on the speaker's bureau for Shire. S.M. Gabe: I have served as a consultant and on the speaker bureau for Shire. D.L. Seidner: I have served as a consultant for Shire. T. Kurokami: I have served as a consultant and on the speaker bureau for Shire.

Introduction: Sporadic non-ampullary duodenal epithelial tumors (SNADETs) are rare, accounting for less than 1% of gastrointestinal neoplasms, and thus the mechanism behind the pathogenesis and carcinogenesis of these neoplasms is still poorly understood. However, with the overall increase of small bowel cancer in recent years, there is an increasing need to clarify the morphology of SNADETs. This study was conducted with the objective of identifying genetic markers and pathways specific to superficial SNADETs through gene-expression analysis.

**Aims & Methods:** This was a prospective pilot study on patients with a diagnosis of superficial SNADETs who were treated at the Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo Hospital, Tokyo, Japan. All patients underwent complete endoscopic evaluation to preclude ampullary lesions, and had a preoperative histologic diagnosis of either adenoma or adenocarcinoma. Patients with familial polyposis were excluded. Immediately before resection of the target lesions, a single biopsy sample from the duodenal tumor and a paired sample from the surrounding normal duodenal mucosa were endoscopically obtained from each patient, followed by RNA extraction. Gene expression profiling with an oligonucleotide microarray was performed in a training set of 4 matched tumor-normal superficial SNADETs pairs. Genes and pathways with differences between pairs were identified, followed by a set-level gene enrichment analysis with a pre-validated cutaneous gene set. Results were confirmed with rt-PCR in all other independent SNADETs pairs.

**Results:** From Nov 2014 to Jan 2016, a total of 12 consecutive patients were enrolled in this study. One patient was excluded due to a post-treatment diagnosis of familial polyposis. In a training set of 4 tumor-mucosa pairs, 626 probes (168 up-regulated, 458 down-regulated) which consistently demonstrated over a 2-fold expression difference between tumor and normal mucosa in all matched pairs were identified. RT-PCR of genes most highly differentially expressed between the tumors and normal mucosa was performed in the 4 pairs in the training set as well as 7 independent pairs. Consistent gene expression patterns concurrent with microarray results were demonstrated in all pairs, confirming the results of this study. Gene set enrichment analysis of the training set using a curated data set demonstrated a strong association between SNADETs and colorectal adenomas (p < 0.0001) and APC down-regulation (p < 0.00001). No other significant associations were demonstrated.

**Conclusion:** Superficial SNADETs demonstrate gene expression characteristics congruent with those resembling colorectal adenomas. Gene expression characterization of these lesions has also demonstrated the significant role of APC down-regulation in the pathogenesis of SNADETs, suggesting that an adenoma-carcinoma sequence similar to colorectal adenomas may be seen in SNADETs. Further analysis of genes which may play a key role in the carcinogenesis of these neoplasms is required.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1292 USE OF 3D COMPUTED TOMOGRAPHIC ENTEROCLYSIS TO OBTAIN INFORMATION ON THE LENGTH OF THE SMALL INTESTINE AND ON THE SIZE, SHAPE, LOCATION OF INTESTINAL NEOPLASIAS**

T. Yoikawa, K. Ohno, T. Kurokami
Dept. Of Gastroenterology, Shizuoka General Hospital, Shizuoka/Japan

**Contact Email Address:** t-yoshi@med.nagoya-u.ac.jp

**Introduction:** We established a new imaging technique, 3D computed tomographic enteroclysis, to evaluate the small bowel (1). In our hospital, this examination is performed routinely to detect gross lesions in the small intestine. In our study, we analysed the clinical performance of 3D CT enteroclysis to evaluate its safety, feasibility, and usefulness for small intestinal neoplasias.

**Aims & Methods:** Data on 3D CT enteroclysis performed in our hospital from January 2010 to March 2017 were reviewed. In 3D CT enteroclysis, the small bowel was inflated with air using a nasoduodenal tube. CT images were taken, and the images’ overall, endoscopic, and virtual dissection views were generated using a virtual colonoscopy system. Total volume of injected air, intraintestinal pressure, and length of the depicted small bowel were recorded. The images of small intestinal neoplasias were collected and compared with the patients’ CT images.

**Results:** One-hundred thirty 3D CT enteroclysis were performed for 93 males and 46 females. The mean age was 49.2 (17–92) years. Examinations were performed for definitive/suspected Crohn’s disease in 35, intestinal obstruction in 34, and 3 cases of small intestinal neoplasias in 25 and others in 5 patients. Consistent gene expression patterns concurrent with microarray results were demonstrated in 10 and 5 patients, respectively, but no additional treatments were necessary. The volume of air and intraintestinal pressure were recorded in 77 examinations for patients without previous resection of the small bowel. The mean total volume of injected air was 1872 ± 656 mL, the mean maximal intraintestinal pressure was 2.7 ± 0.8 kPa, the mean length of the depicted small bowel was 517 ± 102 cm, and whole small bowel tracing was achieved in 71.4% of these 77 examinations. Twenty small intestinal neoplasias were depicted in 4 cases of submucosal tumors, 3 cases of gastrointestinal stromal tumors (GISTs), in 3 cases of neuroendocrine tumors, in 2 cases of cancers, in 2 cases of lipomas, in 2 cases of malignant lymphomas, in 1 case of metastatic cancer, 1 case of Peutz-Jeghers syndrome, 1 case of Peutz-Jeghers type polyps, and 1 case of pyogenic granuloma. Surgery was performed for 12 cases, the total length of the small intestine and estimated location of the lesion by 3D CT enteroclysis were comparable to intraoperative findings in 9 cases (no measurement in 3 cases). In a case of multiple GISTs, some of the lesions of 6–8 mm in size were missed and no lesion smaller than 4 mm was depicted.

**Conclusion:** 3D CT enteroclysis can be performed safely, and the whole small bowel could be examined in most cases. 3D CT enteroclysis can depict stenosis and lesions bigger than 1 cm, measure the length of the small intestine, measure...
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1293 INK TATTOOING FOR BALLOON-ASSISTED ENTEROSCOPY–TIME WELL SPENT?

C. Rimmele1, A. Ebigbo1, H. Messmann1, S. Gölder1
1Department Of Internal Medicine IIi, Klinikum Augsburg, Augsburg/Germany

Contact E-mail Address: christoph.roemmele@klinikum-augsburg.de

Introduction: Balloon-assisted enteroscopy is a well-established tool in the diagnosis and therapy of small bowel diseases. Ink tattooing of the small bowel is used in some centers to mark pathologic lesions or the depth of small bowel insertion.

Aims & Methods: The purpose of this study was to determine the safety, the detection rate within a surgical operation or video capsule endoscopy and the clinical relevance of ink tattooing during balloon-assisted enteroscopy (BAE).

Methods: Between 2011-2015 229 BAE were performed in 156 patients (pts) at the endoscopy unit of Klinikum Augsburg. We performed a retrospective analysis of all 81 (52%) patients who received an ink tattooing during BAE.

Results: Main indications for BAE were known angiodysplasia (37 pts), suspected bleeding of the small intestine (32 pts) and anemia (19 pts). Other indications were known or suspected tumor of the small intestine (17 pts) and Crohn’s disease (3 pts). In 27 patients no pathologic findings were found. In 41 patients an active bleeding, angiodysplasia or hemorrhangioma were found and further therapeutic interventions were performed. Tumor/polyps (11 pts), inflammatory lesions (7 pts) and ulcerative diverticula (1 pt) were other findings. In all 81 patients ink tattooing of the small intestine was performed with no complications. 46 (57%) of 81 patients received a follow-up mainly due to re-bleeding. 5 patients underwent surgery directly after endoscopy with ink-tattooing and therefore received no follow-up. In total 26 (32%) patients received a capsule endoscopy after BAE at our hospital. The ink tattooing could be detected via capsule endoscopy in 19 of these 26 patients (73%). All patients received a video capsule endoscopy with ink-tattooing and therefore received no follow-up. In 30 (26%) 26 patients received a capsule endoscopy after BAE at our hospital. The ink tattooing could be detected via capsule endoscopy in 19 of these 26 patients (73%). The ink tattooing of the patient could be detected via an intraoperative double balloon enteroscopy (DBE) in 2 of 11 (18%) patients. Nine patients received a second ink-tattooing of the small intestine within these examinations without any complications. Ink tattooing had no clinical relevance or therapeutic consequence in 62 of the 81 (72%) patients within the observation period. 5 of these 62 Patients received no further diagnostic or therapeutic steps due to their clinical situation. In 9 patients ink tattooing influenced the choice of approach (antegrade versus retrograde) for re-enterscopy after a video capsule endoscopy. In 7 patients the ink tattooing was used for intraoperative localization and in 3 patients for intraoperative localization as well as for enteroscopy. The intraoperative detection rate of the ink tattooing was 100%.

Conclusion: Ink tattooing of the small intestine is a minimally invasive and safe endoscopic procedure to mark the depth of scope insertion or a pathologic lesion during balloon-assisted enteroscopy. It is a useful tool to avoid unnecessary examinations and aids the intraoperative localization of pathologic lesions. A complete enteral enteroscopy via BAE from retrograde and antegrade BAE is achieved routinely in our setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1294 THE ROLE OF CAPSULE ENDOSTYPE IN THE DETECTION OF SMALL BOWEL TUMOURS IN A LOW-RISK POPULATION; A SINGLE CENTRE EXPERIENCE

M. Hussey1, G. Hölleran2, T. Nuzum3, S. Crowther1, D. Meireima1
1Gastroenterology, Tallaght Hospital, Dublin/Ireland
2Trinity Academic Gastroenterology Group, Trinity College, Dublin/Ireland
3Pathology, Tallaght Hospital, Dublin/Ireland

Contact E-mail Address: husseyma@tcd.ie

Introduction: Small bowel tumours (SBT) are very rare and generally grow insidiously. Diagnosis of SBCE, laboratory work-up and histological diagnosis. Therefore, 3D CT enteroclysis is a powerful new tool for diagnosis, pre-surgical evaluation, and follow-up for small intestinal neoplasias.

Aims & Methods: The first aim of this study was to determine the frequency of small bowel tumours diagnosed by SBCE, laboratory work-up and histological diagnosis. Therefore, 3D CT enteroclysis is a powerful new tool for diagnosis, pre-surgical evaluation, and follow-up for small intestinal neoplasias.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1295 VITAMIN D PREVENTS HEPATIC STEATOSIS AND CARDIOVASCULAR DAMAGE IN A RAT MODEL OF FATTY WESTERN DIET

G. Mazzone1, C. Morisco2, V. Lembó1, G. D’Argenio1, M. D’Armentino2, A. Rossi1, C. Del Giudice2, N. Caporaso1, F. Morisco1
1Department Of Clinical Medicine And Surgery, University of Naples Federico II, Napoli/Italy
2Department Of Advanced Biomedical Sciences, University of Naples Federico II, Napoli/Italy

Contact E-mail Address: v.lembo@hotmail.it

Introduction: The western diet (WD) high in fat and fructose is considered one of the most relevant cause of metabolic disorders and cardiovascular diseases (CVD). The aim of this study was to evaluate whether vitamin D supplementation is able to modulate hepatic steatosis, restore insulin resistance and the metabolic alterations contributing to CVD and hearth failure (HF) caused by a westernized diet, in a rat model without specific vitamin D deficiency.

Aims & Methods: Eighteen adult male Wistar rats were divided into three groups, each of 6 rats, fed with: Group 1: Standard Diet, 3.3kcal/g (SD); Group 2: Western Diet, 5.6kcal/g (WD containing 131U/day/rat of vitamin D3); Group 3: Western Diet+Vitamin D (WD Vit D) containing 25JU/day/rat of vitamin D3.

The experiment was conducted for 6 months. Standardized tail-cuff blood pressure (BP) measurements of conscious rats and transthoracic echocardiography were performed in basal condition (Time 0), and after 3 and 6 months of diet. Hepatic steatosis and collagen myocardial fibrosis were assessed using standard macroscopy, trichrome and Sirius red assays. Vitamin D (25(OH)D3) concentrations were determined using rat-specific ELISA kits. Insulin resistance was determined according to the Homeostasis Model of Assessment (HOMA-IR) method.

Results: In WD rats the percentage of hepatocytes with steatotic vacuoles was 61%, while in WDVitD group was only 27%. WD group HOMAIR was significantly higher than in SD (41.9±8.9 vs 6.17±1.3, p < 0.001) and it was reduced by vitamin D supplementation in WDVitD group (41.9±8.9 vs 19.4±5.2, p < 0.05). At baseline, no differences in systolic blood pressure (SBP) were detected among the three groups showing normal systolic blood pressure. SD did not increase SBP, significantly, during the study period. On the contrary, WD, enhanced SBP by 27±12% p < 0.001 at 3 months, and by 47±11%, p < 0.001 at 6 months. At the end of the study, SBP resulted to be higher in WD group compared to both SD (117±3 mmHg, p < 0.001) and with WDVit.D (101±4 mmHg, p < 0.01). During the study period, WD group showed a significant increase of left ventricular mass (LVM) (52±25% at 3 months p < 0.05, and 123±43% at 6 months p < 0.001), vs basal conditions. Supplementation of VD abolished the WD-induced increase of LVM (25±19% at 3 months, and 34±20% at 6 months, p < 0.05 vs baseline respectively). At the end of the study LVM resulted to be higher in the WD group in comparison to both SD and WDVitD groups, while...
no difference was detected between SD and WDVit.D. However, some collagen staining resulted still present in WDVitD rats. No difference was detected between SD and WDVit.D. However, some collagen staining resulted still present in WDVitD rats. No difference was detected between SD and WDVit.D. However, some collagen staining resulted still present in WDVitD rats.

Conclusion: These results suggest that a daily supplementation of vitamin D3 can reduce hepatic steatosis and prevent cardiac alterations such as the increase of systolic blood pressure and left ventricular hypertrophy in WD rats. We measured the utilization of the nutrition department services according to the actual consultations. Results: We included data from 461 patients (50% males, aged 67±19 yrs). MUST evaluation for malnutrition was not available in any of the reviewed charts. We therefore calculated the MUST score using the available data in the charts. There were 73 (15.8%) overweight-obese and 85 (18.4%) at high risk of malnutrition patients admitted at the internal medicine (n = 127) and surgery (n = 31) sections of the hospital. Nutritional consultation was requested in 4 (3.1%) and 1 (3.2%) internal medicine and surgery patients, respectively by the treating physician during hospitalization. Among the 383 patients discharged at the end of our observation, there were 72 (18.8%) overweight-obese and 46 (12%) at high risk of malnutrition patients. Nutritional consultation was recommended in 24 (6 obese, 13 undernourished and 3 patients with low MUST score) of them.

Conclusion: MUST -a simple screening tool for malnutrition- is not used by the medical staff and nutritional support services are significantly underutilized in a tertiary Greek hospital.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Roman S, Napoleon B, Mion F et al. Intragastric balloons (IGB) are an emerging option for overweight and obese patients with a body mass index (BMI) greater than 31 kg/m2 and they provide greater efficacy with lower risks than do conventional surgical procedures. The balloon treatment is based on gastric space-occupying effects that increase the feeling of satiety and may also effect gut neuroendocrine signaling. However, widespread use of current generation IGBs has been limited by several factors: placement and removal endoscopies require sedation, special training and equipment; patients lost to follow-up are susceptible to IGB deflation and unplanned passage into the gastrointestinal tract. The ElipseTM is the world’s first gastric balloon device that not require endoscopy or anesthesia.

Aims & Methods: We conducted a study to prospectively analyze the safety and effectiveness of IGB ELIPSE in overweight adults. Six patients, 1 male and 5 females (average age 40, mean BMI 40 kg/m2), were included in this study. Each patient swallowed ElipseTM balloon intended to remain in the stomach for 16 weeks. Each balloon was filled with 560 mL of filling fluid. Patients returned every 2 weeks for abdominal ultrasound which documented the correct positioning of the device. All patients were followed up by a nutritionist with a specific screening tool for weight loss.

Results: All 6 patients successfully swallowed the device. There were no major adverse effects. All 6 patients had a significant weight loss (about 16 Kg). In all of the patients, the balloon remained full throughout 16 weeks, self-emptied, and the patients were passed spontaneously without needing endoscopic removal. All 6 patients successfully swallowed the device. There were no major adverse effects. All 6 patients had a significant weight loss (about 16 Kg). In all of the patients, the balloon remained full throughout 16 weeks, self-emptied, and the patients were passed spontaneously without needing endoscopic removal.

Conclusion: This study demonstrates the efficiency, security and simplicity of the ElipseTM system. Moreover, we highlighted the non necessity of deep sedation or anesthesia. Aims & Methods: We conducted a study to prospectively analyze the safety and effectiveness of IGB ELIPSE in overweight adults. Six patients, 1 male and 5 females (average age 40, mean BMI 40 kg/m2), were included in this study. Each patient swallowed ElipseTM balloon intended to remain in the stomach for 16 weeks. Each balloon was filled with 560 mL of filling fluid. Patients returned every 2 weeks for abdominal ultrasound which documented the correct positioning of the device. All patients were followed up by a nutritionist with a specific screening tool for weight loss.

Discussion of Interest: All authors have declared no conflicts of interest.

Table 1: Characteristics of study population one year after bariatric surgery

<table>
<thead>
<tr>
<th></th>
<th>LSG</th>
<th>MGB</th>
<th>RYGB</th>
<th>DBSG</th>
<th>OVER ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>15</td>
<td>24</td>
<td>5</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td>Age, years</td>
<td>34.7 (7.4)</td>
<td>37.4 (11.7)</td>
<td>41.4 (14.1)</td>
<td>44 (10)</td>
<td>37.8 (10.5)</td>
</tr>
<tr>
<td>Sex(M:F)</td>
<td>7.8</td>
<td>5:19</td>
<td>23</td>
<td>3:4</td>
<td>17:33</td>
</tr>
<tr>
<td>BMI(kg/m²)</td>
<td>29.8(4.7)</td>
<td>27.6(4.4)</td>
<td>27.9(2.9)</td>
<td>24(2.4)</td>
<td></td>
</tr>
<tr>
<td>WC(cm)</td>
<td>96(3.0)</td>
<td>90.9(3)</td>
<td>9(0.4)</td>
<td>9(3.04)</td>
<td>9.5(0.4)</td>
</tr>
<tr>
<td>PTH-I(pg/mL)</td>
<td>63.8(21.3)</td>
<td>70.4(25.9)</td>
<td>73.1(4.2)</td>
<td>50(14)</td>
<td>62.29(4)</td>
</tr>
<tr>
<td>VIT.D (ng/ml)</td>
<td>19.4(7.7)</td>
<td>14.6(9.2)</td>
<td>12.8(6.5)</td>
<td>16.9(5.3)</td>
<td>15.7(5.7)</td>
</tr>
<tr>
<td>VIT.D deficiency</td>
<td>&lt;0.16 mg/dl</td>
<td>0.14 mg/dl</td>
<td>0.14 mg/dl</td>
<td>0.16 mg/dl</td>
<td>0.14 mg/dl</td>
</tr>
</tbody>
</table>

One year after bariatric surgery, the prevalence of osteoporosis and osteopenia was low. The serum Vitamin D level increased significantly but no significant change of BMD was noted. Further longitudinal studies are warranted to clarify the long-term effect of bariatric surgery on BMD in Chinese population.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

M. Han, W. Lee1,2
1Internal Medicine, Min-Sheng General Hospital, Taoyuan/Taiwan
2Surgery, Min-Sheng General Hospital, Taoyuan/Taiwan

Contact E-mail Address: minghun@ms18.hinet.net

Introduction: Bariatric surgery is an effective treatment for morbid obesity. In Taiwan, the numbers of patients who received bariatric surgery increased gradually. However, for long-term follow-up, nutritional deficiency may develop in post-bariatric (metabolic) surgery patients, especially in patients who received mal-absorptive or combination procedure. Deficiency of nutrition may cause anemia, peripheral neuropathy, secondary parathyroidism and osteoporosis. Follow-up of the nutritional status for patients after bariatric surgery is an important issue.

Aims & Methods: The aim of our study is to evaluate the change of Vitamin D and bone Mineral Density after bariatric surgery in Chinese population. This prospective cohort study included 50 patients (ranged from 20 to 65 years old) who received bariatric surgery at one teaching hospital in Taoyuan, Taiwan. Patient with osteoporosis before surgery were excluded in this study. Baseline (2012-2014) and one year after bariatric surgery (2013-2015), venous blood was collected from each patients for assessment of the Calcium, Vitamin D and parathyroid hormone (PTH) levels. BMD (g/cm2) was also measured at lumbar spine (L2-L4) by dual energy x-ray absorptiometry (DEXA).

Results: Among 50 patients, 15 patients received laparoscopic sleeve gastrectomy, 24 patients received laparoscopic mini-gastric bypass (MGB), 5 patients received laparoscopic Roux-en-Y gastric bypass (RYGB) and 6 patients received laparoscopic duodenal-jejunal bypass with sleeve gastrectomy (DBSG). The characteristic of the study population was shown as table 1. The differences of mean for calcium, vitamin D, PTH and BMD after bariatric surgery were = 0.16 mg/dl (P < 0.001), 0.14 mg/dl (P < 0.05) and 0.04 g/cm2 (P = 0.14) respectively.
P1300 INTRAGASTRIC BALLOON: A LARGE BRAZILIAN MULTICENTRIC STUDY OVER 10,000 CASES AND 20 YEARS OF EXPERIENCE

1Dept Of Bariatric Endoscopy, Sander Medical Center, Belo Horizonte/Brazil
2Clinica ObesoGastro, Curitiba/Brazil
3Clinic Dr. Giorgio Baretta, Curitiba/Brazil
4Clinica Dr. Gabriel Cairo Nunes, São Paulo/Brazil
5Bariatric Endoscopy, Scarpa Scopia, São Paulo/Brazil
6Bariatric Endoscopy, Faculdade de Medicina do ABC - Hospital Mário Covas, São Paulo/Brazil
7Florida International University, Miami/United States of America/FL

Contact E-mail Address: brunosander@hotmail.com

Introduction: The intragastric balloon has been used for more than 20 years in Brazil. As a novel, non-invasive device for assisting weight loss, and some intercurrences were observed during more than 10,000 procedures performed. With the assistance of a multidisciplinary team the results have been satisfactory.

Aims & Methods: To assess the efficacy and complications of the weight loss with IGB in patients seen at the 07 private centers. A total of 10,255 patients with IGB implanted from 1997 to 2017 were analyzed from a prospective fed database. A liquid filled IGB with a volume in between 620 to 700 ml was used. Initial BMI started at 27 kg/m2 (as approved by Brazilian health authorities) and were followed up by a multidisciplinary team during implant. IGB maximum implant period was 09 months. Statistical analysis was performed according to sex and degree of excess weight (overweight and grade I, II and III). Data were analyzed using student t-test, and Tukey post-test. The level of significance was set at p < 0.05.

Results: 492 patients (4.8%) were excluded from the final analysis associated with weight loss: 226 (2.2%) due to early removal. These were analyzed in relation to the other 99%, and 5186/492/3764 patients were included. These patients were analyzed in relation to follow-up with nutritionist and psychological evaluation before the procedure, 158 (1.54%) due fail on weight intake and 588 (6.0%) did not undergo nutritional monitoring during the use of IGB, 108 (0.4%) had no follow-up complete data. There were also spontaneous hyperinflation on 0.99% (n = 101) and balloon spontaneous deflation or leakage in 0.82% (n = 84). Incidence of complications not leading to removal were 6.65% (n = 376).

Complications other occurred as fungal contamination in 7.9% (n = 810); Wound dehiscence in 0.03% (n = 2), pregnancy during implant period was 1.2% (n = 123) and Dieulafoy lesion 0.00% (n = 1). The incidence of complications with IGB removal was 0.05% (n = 0); gastric perforation. On the 9,763 remaining patients, 7,615 (78%) were women and 2,148 (22%) were men. Mean age was 43±5 years. 37% of patients showed a significant weight loss, with a significantly lower final BMI (27.16 ± 4.82 kg/m2; range: 15.71-31.74) than the initial BMI (33.42 ± 6.62 kg/m2; range: 27.79-39.35). The mean Weight Loss was −16.98 kg (−16.85 kg). Percent EW L was higher in the overweight group (41.33%) sequentially. A total of 5.2% (66/1,268) of the patients followed up for 18 months after withdrawal of the IGB were submitted to bariatric surgery.

Conclusion: The intragastric balloon has been established as an valid endoscopic tool for treatment of overweight, especially in patients with overweight and obesity grades I and II and multidisciplinary team follow-up is mandatory for successful treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1301 WEIGHT REGAIN AFTER BARIATRIC SURGERY - ARGON PLASMA COAGULATION FOR GASTROJEUNAL ANASTOMOSIS DECREASE

B. Q. Sander1, D. S. Paiva2, M. P. Sander3, M. Galvao Neto4, G. Baretta5, E. Greccko6, T. F. Souza7, J. I.B. Scarparo5
1Dept Of Bariatric Endoscopy, Sander Medical Center, Belo Horizonte/Brazil
2Florida International University, Miami/United States of America/FL
3Clinica Dr. Giorgio Baretta, Curitiba/Brazil
4Bariatric Endoscopy, Scarpa Scopia, São Paulo/Brazil
5Bariatric Endoscopy, Faculdade de Medicina do ABC - Hospital Mário Covas, São Paulo/Brazil
6Bariatric Endoscopy, Scarpa Scopia, São Paulo/Brazil

Contact E-mail Address: brunosander@hotmail.com

Introduction: The weight regained has been a described growing problem in patients after bariatric surgery. This weight regained is multifactorial and is associated to dilation of GJ with the gastroenteric anastomosis (GJ). For the patients with significant weight regain some revisional procedures had been attempted and more recently endoscopic revisional procedures had been described.

Aims & Methods: To evaluate the safety and effectiveness of argon plasma coagulation (APC) decreasing the diameter of the gastroenteric anastomosis in patients who have undergone RYGB for morbidity obesity and regained weight associated to dilation of the GJ. From Jan-2014 to April-2017 554 RYGB subjects with weight regain a dilated anastomosis (>18 mm) and at least 2 procedures were submitted APC application. In relation to the anastomotic diameter, the majority of studies use a diameter of more than 20 mm to define anastomotic dilation, although some studies use smaller diameters such as 12 mm. In relation to that created mainly in the gastrojejunal anastomosis using a 36 Fr Fouchet bougie. In the patients in the present study, the minimum cross-section diameter was 18 mm and the maximum measured in the first session 40 mm. This anastomotic dilation was measured using a 33-mm long articulated device and an endoscope between an anastomotic dilation and its diameter with a maximum of 03 applications. APC set was at 2-3L with 65–85W. GJ diameter target was 8–12 mm estimated with pre-measured grasper. At first APC session, pre-op weight and BMI, post-op weight nadir, actual weight and BMI and estimated diameter of GJ were the variables collected. Complications during treatment were also collected. In the present study, psychological and nutritional evaluations were performed before APC and during treatment and physical activity was strongly recommended. Data were analyzed with descriptive statistics, student’s t test and Spearman correlation.

Results: Of the 554 patients, 79.06% were women and 20.94% were men. Average time between bariatric surgery and the first APC was 96.35 months (± 54.4). The mean and average weight loss in this interval was 22.08 kg (± 11.05). The mean diameter of the anastomosis was 24.78 mm (± 6.04) and the average number of APC sessions was 1.78 times (±0.61). The average reduction of anastomotic diameter was 14.86 mm (±7.24) and the final average diameter was 10.22 mm (±3.89). The mean weight loss between the first and last APC was 13.37 kg (±7.82) and the average decrease of BMI was 4.59 kg/m2 (±2.78). 122 patients (22.02%) did not achieve the target GJ diameter and 05 patient (0.9%) did not lose weight even with the desired GJ diameter. From the 146 (26.56%) patients followed up for 12 months the weight regained was less than 10% of the weight of. Of the 554 patients APC, 51 (9.2%) required dilatation balloon due to symptomatic stenosis at least once. No further complications were reported.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro enteric anastomosis in patients undergoing bariatric surgery who have regained weight with dilation of the anastomosis. The reintroduction of the patient to the multidisciplinary team is mandatory in cases of weight regain and loss to postoperative follow-up. A psychological and/or psychiatric evaluation is mandatory, as well as nutritional therapy and encouragement of physical activity. The monitoring of food intake and body weight, closer follow-up of the operated patients, appropriate choice of technique according to the patient and the experience of the surgeon, and a good learning curve are all factors that can reduce the failure rate of bariatric surgery. The reintroduction of the patient to the multidisciplinary team is mandatory if better results and sustainable weight loss and comorbidity control are to be obtained.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1302 EXCESS WEIGHT IN THE ELDERLY: A BRAZILIAN EXPERIENCE WITH THE INTRAGASTRIC BALLOON TREATMENT

R.J.F. Fernandez1, E. Usuy2, M. Galvao Neto3, C.F. Diestel4, S. Barrichello1, A. F. Teixeira5

1Bariatric Endoscopy, Usy Clinic, Rio de Janeiro/Brazil
2Bariatric Endoscopy, Usy Clinic, Rio de Janeiro/Brazil
3Bariatric Endoscopy, Gastro Obeso Center, São Paulo/Brazil

Contact E-mail Address: ric5tiddi@prodigy.net.br

Introduction: With the aging of the population, the incidence of obesity has also increased among the elderly. However, there is a higher incidence of severe comorbidities in this population comparing to adults, which often makes bariatric surgery unfeasible. In this segment, treatment with the intragastric balloon (IGB) may be an interesting option.

Aims & Methods: We aimed to assess the efficacy and complications of obesity treatment in the elderly using a non adjustable IGB. A total of 77 patients were analyzed. The minimal initial body mass index (BMI) was 28 kg/m². The level of significance was set at p < 0.05.

Results: 58 patients were women (75.3%). Mean age was 64.26 (60–80) years. Ten patients had no comorbidities, 32 had hypertension, 45 had dyslipidemia, 32 had insulin resistance, 12 had type II diabetes, and 10 had ischemic heart disease. There were no major complications. Results are shown on table 1. The treatment success rates according to the following criteria: ≥10% total body weight loss (TBWL) and ≥25% excess weight loss (EWL) were 96.11% (74 patients) and
Disclosure of Interest: gluten provocation and placebo, indicating no specific effect of gluten in a group between the diagnosed and the not-diagnosed group, or between symptoms after gluten diagnosed four patients with NCGS according to the Salerno criteria.

Conclusion: This randomized, double-blind placebo-controlled challenge with gluten showed more severe symptoms with placebo. The not-diagnosed group showed more severe symptoms with placebo than with gluten (p = 0.0001). The BA concentrations in feces were similar in both groups. There was no group-specific pattern in the fecal microbiota. A subgroup of 17 patients, one month of statin therapy increased the serum BA concentration from 0.68 ± 0.08 to 1.37 ± 0.213 μmol/l (P = 0.01).

Conclusion: There was no specific microbiota signature associated with CAD. However, the decreased serum BA concentration was a strong predictor of 6-month survival in humans. With respect to the powerful anti-atherosclerotic effect of BA in animal models, and their role in human lipid metabolism and diabetes, this study unraveled the existence of a new metabolic disturbance associated with CAD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1305 LOW FODMAP DIET: REINTRODUCTION PHASE DOES NOT MODIFY EFFICACY, BUT BEWARE OF REAL TRIGGER FOODS!

M. Bellini1, A. Rossi2, D. Gambaccini1, D. Mencuccia3, L. Bazzichi4, B. Fanni3, R. Sellitti3, M.G. Mumolo5, N. De Bortoli6, L. Ceccherelli5, M. Mosca5, S. Murchi7

1Ospedale Di Cisanello Pisa, Pisa/Italy
2U.O. Reumatologia, Ospedale Di Cisanello Pisa, Pisa/Italy
3Department Of Translational Research And Of New Surgical And Medical Technologies, University of Pisa, Pisa/Italy
4U.O. Gastroenterology, Ospedale Di Cisanello Pisa, Pisa/Italy

Contact E-mail Address: mbellini@med.unipi.it

Introduction: The low-FODMAP diet (LFD) is used to treat patients with irritable bowel syndrome (IBS) even if some nutritional concerns have been raised. It starts with an elimination phase and is followed by a reintroduction phase to clearly detect the “symptom trigger” foods in order to suggest a definitive and less restrictive diet tailored to the patient's needs.

Aims & Methods: The aims of this study were to evaluate: 1) the effects of FODMAP reintroduction on a) body composition and nutritional status, using Bioelectrical Impedance Vector Analyses (BIVA), b) abdominal symptoms, c) quality of life, d) anxiety/depression, e) sleep quality, 2) if the patients' perception of the “trigger” foods was accurate.

Results: 66 IBS patients (54F, 12 M; 44±3±13.0 yrs.) started (T0) a LF D for 8 weeks (T1) and followed a 9–14 week reintroduction period (T2). They underwent blood tests at T0 and T1. BIVA, anthropometric data, IBS-Symptom Severity Score, Bristol Stool Chart (BSC), SF36, Hospital Anxiety and Depression Scale and Pittsburgh Sleep Quality Index were performed at T0, T1 and T2. The patients were monitored by a nutritionist to verify their compliance.

Aims & Methods: Neither change of blood tests at T1 nor variations of anthropometric data and BIVA were reported at T1 and T2 in comparison with T0. A significant improvement in abdominal symptoms (IBS-SSS), anxiety and quality of life, was recorded at T1, this remaining unchanged also at T2 (p < 0.0001). Depression improved at T2 (p < 0.01 vs. T0). Sleep quality improved at T1 (p < 0.05 vs. T0) and at T2 (p < 0.001 vs. T0).

Conclusion: All authors have declared no conflicts of interest.
both at T1 (8.4±1.6) and T2 (8.2±1.7). When starting, LFD patients considered an average 32 foods low-carbohydrate diet (57%), fructose (27%), fructose (17%), galacto-oligosaccharides (10%) and polysaccharides (3%); the reintroduction phase (T2) enabled us to detect lactose in 70%, fructose in 30%, fructose in 30%, GOS in 33% and polysaccharides in 27%, as real triggers. The agreement (Cohen’s kappa) was moderate for lactose (k: 0.50), fair for fructose (k: 0.39) and fructose (k: 0.32) and poor for polysaccharides (k: 0.01).}

Conclusion: Not only did reintroduction not affect the improved achievements during the elimination phase, but it also precisely identified the foods responsible for the effects and symptoms. This enabled us to suggest a personalized diet for the patients. The real role played by FODMAPs in generating symptoms was abundantly underestimated and misunderstood by our patients. This underscores the fact that LFD has to be administered and carried out under the guidance of an expert nutritionist.

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P1306 EXPRESSION OF THE FRUCTOSE TRANSPORTER GLUT5 IN PATIENTS WITH FRUCTOSE MALABSORPTION

P. Staubach1, S. Kräger1, A. K. Koch2, J. Langhornicht1, C. Rücken1, U. Helwig4
1Department Of Pathology, University of Kiel, Kiel/Germany
2Department Of Integrative Gastroenterology, University of Duisburg-Essen, Essen/Germany
3Department For Internal And Integrative Medicine, Klinikum Essen-Mitte Integrative Gastroenterologie, Essen/Germany
4Medical Practice For Internal Medicine Oldenburg, University of Kiel, Oldenburg/Germany

Contact E-mail Address: piastaubach@gmx.de

Abstract: Fructose malabsorption (FM) is a frequent finding in patients with abnormal glucose-tolerance to high levels of fructose in Western diets. The role of monosaccharide transporter dysfunction in the small intestine is incompletely understood. The aim of this study was to investigate the histoanatomical distribution of the main fructose transporter GLUT5.

Aims & Methods: The study included 257 patients with FM diagnosed by hydrogen breath test and grouped according to the response to a fructose-free diet. 42 healthy individuals and 31 patients with coeliac disease (CD) served as controls. The fructose breath test was done with 50 g fructose. Fructose malabsorption was defined as an increase of 20 ppm of endogenous hydrogen. Formalin-fixed and paraffin-embedded duodenal biopsy specimens were obtained in all cases. Histology was assessed using hematoxylin and eosin stained tissue sections. Expression of GLUT5 was studied by immunohistochemistry. Expression pattern of GLUT5 was correlated with clinical and pathological patient characteristics.

Results: The expression of GLUT5 did not differ significantly between patients with FM complete diet responders (n = 183) and healthy controls (n = 42). Also patients with FM responding to a fructose free diet did not differ in GLUT5 expression or in max. H2 increase and AUC measured in fructose breath testing from patients not responding to the diet (n = 40). However, in patients with CD (n = 29) significant differences in GLUT5 expression were found compared to patients with FM and healthy controls (p = 0.009). The severity of CD assessed by the Marsh score significantly correlated with the GLUT5 expression (r = 0.563, p = 0.001).

Conclusion: Changes in GLUT5 expression may not cause symptoms in adult patients with FM. The symptoms induced by FM could be associated with mechanisms known to the pathophysiology of the fructose bowel syndrome. However, in secondary malabsorption decreased GLUT5 expression was detected. Further investigation is needed to understand the essential factors in FM and the influence on functional gastrointestinal disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1307 BETTER RESPONSE TO LOW FODMAP DIET IN JH NEGATIVE PATIENTS WITH DISORDERS OF GUT-BRAIN INTERACTION

V. Schindler1, A. Zweig2, A. Becker2, J. Jazet1, D. Runngaldier1, M. Fried3, D. Pohl2
1Gastroenterology And Hepatology, University of Zurich, University Hospital Zurich, Zürich/Switzerland
2Universitätsspital Zürich, Zürich/Switzerland
3Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States of America/MN

Contact E-mail Address: valeria.schindler@usz.ch

Introduction: Previous studies have shown a reduction of gastrointestinal symptoms in patients with disorders of gut-brain interaction (FGID) when following a diet low in FODMAPs. However, the influence of JH on host serotonergic pathway may represent a further step towards pathophysiological features in FGIDs and might help to select patients for individually appropriate therapies.

Aims & Methods: Data of patients presenting with FGID at the tertiary ambulatory functional bowel clinic between January 2015 and July 2016 were analyzed. FGIDs were diagnosed according to Rome III criteria. JH was assessed by physicians using Brighton score and rated positive for scores ≥4/9 points. Patients received professional nutritional counseling on a diet low in FODMAPs. A global symptom response was assessed by a professional nutritionist after 4 to 6 weeks following a low FODMAP diet.

Results: Of all 84 patients screened for JH, 62 (73.8%) were female and 22 (26.2%) male. Median age was 37 years (range 18-73). JH positive patients were more likely to exhibit JH compared to males (38.62 [61.3%] vs. 6/22 [27.3%]; p = 0.006). Global symptom response rate to a diet low in FODMAPs was 64/84 (76.2%). Our data showed significantly better response to a low FODMAP diet in JH negative patients than in JH positive patients (36/40 [90.0%] vs. 28/44 [63.6%], p = 0.005, ITT). Response of 7 patients was unknown because of early therapy discontinuation before nutritional re-counseling. When excluding 7 patients with therapy discontinuation from our calculations, the difference in diet response between JH negative and JH positive patients remained significant (36/39 [92.3%] vs. 28/38 [73.7%]; p = 0.036).

Conclusion: Our data indicate an association between global symptom response to a diet low in FODMAPs and joint hypermobility status in FGID patients. An underlying structural pathological feature (JH) might represent a further step towards pathophysiological features of FGIDs and intestinal permeability) causing gastrointestinal symptoms in JH positive patients and limiting response to low FODMAP diet should be considered. Our findings represent a further step towards pathophysiological features in FGIDs and might help to select patients for individually appropriate therapies.

Disclosure of Interest: M. Fried: Allergan, MSD, Astra, Vyfor, Abbvie, UCBD. P. Pohl: Allergan, Vyfor, Astra, Permed. All other authors have declared no conflicts of interest.

P1308 CHANGES IN GASTROINTESTINAL SYMPTOMS, SMALL INTESTINAL BACTERIA, AND DUODENAL PHYSIOLOGY FOLLOWING A LOW-FIBER, HIGH-SUGAR DIET

G. Saffouri1, B. Schmidt1, E. J. Battaglia1, Y. Bhattachar1, J. Choi2, H. Lekatz3, J. Saffouri4, G. Farrugia5
1Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States of America/MN
2Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States of America/MN

Contact E-mail Address: saffouri.george@mayo.edu

Introduction: Gastrointestinal symptoms are often associated with dietary intolerances and are common in the developed world consuming a western diet low in fiber. Aims & Methods: To determine the effect of a high-sugar, low-fiber diet on GI symptoms, small intestinal bacteria, and duodenal physiology. This is a prospective single-center study. Healthy adults with baseline fiber intake ≥14 g/1000 calories/day; <10% daily calories from added sugar; ≥5 servings of fruits and vegetables/day; and ≤15% daily calories from saturated fat were recruited. Exclusion criteria included known GI disease or symptoms, antibiotic/probiotic use within 4 weeks of the study, pregnancy, and vulnerable adults. At baseline visit, participants completed a symptom and demographic questionnaire and underwent esophagogastroduodenoscopy (EGDY) with duodenal biopsies and aspirates. Symptoms associated with constipation, straining, incomplete evacuation, hard stools, abdominal pain associated with bowel movements, diarrhea, bloating, nausea/vomiting, heartburn, fatigue, and appetite. All participants consumed a 7-day standardized diet with typical United States diet with ≥10% of calories from 20% carbohydrate diet (≥35% fat, ≥15% protein). The diet was low in fiber (<10 g/1000 calories/day) and high in simple sugar (≥50% daily carbohydrates). After dietary intervention, participants filled out four symptom questionnaires and underwent repeat EGDY with duodenal biopsies and aspirates. Before and after the diet, quantitative aerobic and anaerobic cultures were performed on duodenal aspirates. Duodenal biopsies were mounted in an Using chamber. Intestinal permeability was evaluated using transmural electrical resistance (TEER) and FITC flux (4KDa); a measure of paracellular transport. Secretory responses were quantified in voltage clamp mode by measuring baseline short circuit current (Isc) and change in Isc (ΔIsc) in response to increasing concentrations (0.003-300 μM) of serotonin (5-HT) on the submucosal side. These measurements were repeated after the dietary intervention. Data are presented as mean ± SEM. Data were analyzed using paired t-test unless specified and p < 0.05 was considered significant.

Results: A total of 10 participants (5 female; median age 26; 70% Caucasian) were enrolled. Average BMI at baseline was 23.1 ± 2.1 kg/m². At baseline, 10% of the 6 who had no growth initially, 1 developed bacterial overgrowth following intervention. There was no significant difference in TEER (26.45 ± 1.98 vs 26.18 ± 2.45 Ohms/cm²), FITC flux (217 ± 34.72 vs 217 ± 6.25 ng/mL) or baseline Isc (48.27 ± 6.39 vs 51.58 ± 7.34 ng/mL/cm²) before and after dietary intervention. Interestingly there was a significantly lower ΔIsc response to increasing concentrations of 5-HT after dietary intervention (P < 0.05, two-way ANOVA).

Conclusion: A low-fiber, high sugar diet led to gastrointestinal symptoms improving in participants who normally consume a high-fiber diet. This was associated with a significant decrease in 5-HT evoked secretory response in the duodenum, suggesting a potential role for dietary modulation of host serotonergic pathway. There was no correlation with quantitative bacterial cultures and there was no overall significant change in intestinal permeability. Diet may mediate these

Disclosure of Interest: M. Fried: Allergan, MSD, Astra, Vyfor, Abbvie, UCBD. P. Pohl: Allergan, Vyfor, Astra, Permed. All other authors have declared no conflicts of interest.
P1309 STRESS AND STRESS-RELATED PEPTIDE AMPHITROLE THE ANOREXIC ACTIONS OF CHOLECYSTOKININ
Gastroenterology And Hepatology, Saitama medical University, kawagoe/Japan

Contact E-mail Address: yamagouchta81@yahoo.co.jp

Introduction: Recently roles of gut hormones on appetite control have been known. Among them, CCK is well known to suppress appetite and gastric motility. On the other hand, patients of functional dispensisia (FD) have hyper sensitivity to CCK. And releves of CCK inbrad was shown to be high in FD patients. In FD patients, stress have important roles of pathogenesis of the disease.

Aims & Methods: We undertook to clarify whether stress influences the actions of cholecystokinin (CCK) on appetite and gastric emptying. As stress we gave restraint stress, corticosterone-releasing factor (CRF) or urocortin (UCN1) injection intraperitoneally (IP). We also examined the effects of CCK and restraint stress on c-Fos expression in the neurons of appetite center of the brain. In the gastric emptying study, SD rats were fasted overnight. The amounts of the mixture (food and glass beads) left in the stomach were measured at 2 hours after the perorally injection of mixed food, and gastric emptying rate was calculated. In the study on appetite, CCK was IP injected and the amounts of food was measured at 1 and 2 hours after the injection. In some experiments, CRF or UCN1 was IP injected and the interaction with CCK on food intake was examined. In another study, restraint stress was given to rats and the interaction with CCK was evaluated. To study the involvement of brain in the interaction between CCK and stress, c-Fos expression in the neurons was examined and evaluated.

Results: CCK dose-dependently inhibited gastric emptying. CCK dose-dependently inhibited food intake during 1 hr and 2 hr. CRF (10ng/kg rat) significantly inhibited food intake. However, there was no interactive action between CCK and CRF on food intake. UCN1 (3 nmol/kg rat) inhibited food intake at 1 and 2 hours. There was an synergistic action between CCK and UCN1 on food intake. Restraint stress amplified suppressive effect of CCK on gastric emptying and food intake. C-Fos expression of the neurons in the nucleus of solitary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) by CCK was amplified by the addition of restraint stress.

Conclusion: The result suggests that stress might amplify anorexic effects of CCK through the activation of satiety center of the brain that might be the possible pathogenesis for postprandial distress syndromes of FD.

DisclosuRE of Interest: All authors have declared no conflicts of interest.

P1310 PEPTIDE TYROSINE-TYROSINE (PY) ENHANCES EFFECTS OF CHOLECYSTOKININ (CCK) ON GASTRIC MOTILITY AND FOOD INAKE INT HE RATS
Gastroenterology And Hepatology, Saitama medical University, Kawagoe/Japan

Contact E-mail Address: hosomi@saitama-med.ac.jp

Introduction: Cholecystokinin (CCK) and peptide tyrosine-tyrosine (PY) have been known to suppress appetite and gastric emptying. Both peptides are released in blood by feeding, and maintain high levels simultaneously for 1–2 hours. Therefore there might be possible to cause interactive actions between two peptides, inducing satiation to finish food intake.

Aims & Methods: In this study, we undertook to elucidate whether CCK and PY have the interaction to decrease food intake. Study on gastric emptying. Male SD rats were fasted overnight, and 1 mL of mixture of food and glass beads was given into the stomach and then PY or CCK or CCK followed by PY was given. Food left in the stomach 1 hr after the injection was measured and gastric emptying rate was calculated. Study on appetite. PY or CCK was IP injected to the rats just before setting food to eat. The amounts of food were measured at 1 and 2 hours after the injection. To clarify the involvement of the brain in the interaction between CCK and PY, c-Fos expression was examined.

Results: CCK (0.5–10 nmol/kg) dose-dependently inhibited gastric emptying (p < 0.001). CCK 10 nmol/kg maximally inhibited food intake (p < 0.01). PY 25–250 pmol/kg significantly inhibited gastric emptying for 1 or 2 hrs after the injection (p < 0.01). PY 250 pmol/kg significantly inhibited food intake for 1 hr after the injection (p < 0.01). The combination of CCK 10 nmol/kg and PY 250 pmol/kg inhibited gastric emptying more than CCK alone (p < 0.01) or PY alone (not significant). PY and CCK additively inhibited food intake when PY was injected 20 minutes later from CCK injection. PY significantly amplified c-Fos expression induced by CCK in the nucleus of solitary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) in the brain.

Conclusion: The combination of PY with CCK amplified the suppression of gastric emptying of food and food intake. The result suggests that the sequence secretion of CCK and PY might strengthen the inhibition of food intake through the activation of satiety center in the brain, that is important for terminating food intake and adjusting energy intake.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1311 REGULATION OF MICRONORNAS BY P53 FAMILY MEMBERS IN HEPATOCELLULAR CARCINOMA
R. Hermelin1, M. Bender2, L. Kasel1, E. Aschenbrenner3, K. Pollinger1, C. Kunst1, M. Müller-Schilling1
1Department Of Internal Medicine I, University Hospital Regensburg, Regensburg/Germany
2Department Of Internal Medicine IV, Hepatology And Gastroenterology, University Hospital Heidelberg, Heidelberg/Germany

Contact E-mail Address: rafael.hermelin@web.de

Introduction: Transcriptions factors belonging to the p53 family (p53, p63, p73) respond to cellular stress signals by inducing an accurately defined set of genes. In a number of tumors, also in hepatocellular carcinoma (HCC), p53 proteins can exert cancerogenic or tumoursuppressing functions. MicroRNAs are small, non-coding RNA molecules which play an important role in gene regulation. It is known that expression patterns of microRNAs can be controlled by the p53 family. Depending on disease and cellular origin different sets of p53-induced microRNAs have been identified.

Aims & Methods: Little is known about p53-dependent microRNA signatures in HCC. The aim of the study was therefore to identify p53-family-regulated microRNAs in HCC. Hep3B cells were transfected with rAd-p53 and -p73. Microarray analyses were performed to identify p53- and p73-regulated microRNAs. Verification of p53- and p73-dependent microRNA expression was performed by qPCR.

Results: Overexpression of p53 and p73 induced a rash of microRNAs. p53 induced miR-34a by 2.4-fold, miR-145 by 2.7-fold and led to a slight reduction of miR-149. In the presence of p73 miR-34a was induced by 5.4-fold, miR-145 by 3.2-fold, and miR-149 by 5.5-fold. p53-dependent expression of miR-34a was further increased in the presence of Doxorubicin (5.7-fold), Regerofambin (2.5-fold) and Tivantinib (1.9-fold) compared to controls. Moreover, incubation with Regerofambin resulted in an up to 3.4-fold increase of p53-dependent expression of miR-149 and miR-192.

Conclusion: p53 proteins affect the microRNA signature in HCC. Beside the already known induction of miR-34a we demonstrate for the first time a regulation of miR-145 and –149 by p53 and p73. We hypothesize that regulation of tumoursuppressive microRNAs represents an effector mechanism by which p53 family members exert their role in tumor development and treatment response. The observed synergetic effect of p53 and HCC-relevant therapeutics on microRNA expression might provide new options for the development of therapeautic and prognostic measures in HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1312 IGF2BP2 IS REGULATED BY THE P53 FAMILY OF TRANSCRIPTION FACTORS IN HEPATOCELLULAR CARCINOMA
D. Gschwind1, M. Lohse1, E. Aschenbrenner2, K. Pollinger1, S. Schlosser1, C. Kunst1, M. Bender2, L. Kaser1
1Department For Internal Medicine I, University Hospital Regensburg, Regensburg/Germany
2Department Of Internal Medicine IV, Hepatology And Gastroenterology, University Hospital Regensburg, Regensburg/Germany

Contact E-mail Address: dana.gschwind@stud.uni-regensburg.de

Introduction: p53 transcription factors (p53, p63, p73) respond to cellular stress by transcriptional regulation of specific sets of genes. In hepatocellular carcinoma (HCC) and other tumors p53 family members exert cancerogenic or tumor suppressive effects. Depending on their splice variants – with transactivation (TA)/dominant negative (DN) – and the characteristics of the particular binding site (BS) p53 proteins activate or inhibit specific target genes. We previously identified the IGF2BP2 gene (Insulin-Like Growth Factor Binding Protein 2) as one out of 7 putative target genes for p53 proteins with prognostic relevance in HCC.

Aims & Methods: The aim of this study was to characterize the so far unknown transcriptional regulation of IGF2BP2 gene by p53 family members in HCC. Hep3B cells were transfected with rAd-p53 and -p73 and transcriptional regulation of IGF2BP2 was determined by qPCR. Intra- and extracellular IGF2BP2 protein levels were analyzed by Western Blot and ELISA. Transfaced database analyses were performed to identify potential BS for p53 and p73. These sequences were cloned, mutated and analyzed for p53 family binding in luciferase reporter assays. Binding of p53 and p73 to the identified BS was confirmed by CHIP experiments.

Results: TaP73 transfection increased IGF2BP2 expression by up to 60-fold and revealed three elevated intra- and extracellular IGF2BP2 proteins. Intracellular IGF2BP2 protein was not detected in controls. p53 transfection induced IGF2BP2 expression by up to 7-fold. Two potential p53 and p73 BS are located in the promoter region, another 5 potential p73 and one p53 BS were identified in intron 1 of the IGF2BP2 gene. Intron 1-dependent luciferase activity was increased by up to 110-fold after TaP73 transfection and up to 20-fold after p53 transfection. Mutation and deletion of the identified p53 BS in intron 1 resulted in a reduction of luciferase activity by up to 85%. Deletion of one
P1313 HOW TO IMPROVE THE RELIABILITY OF LIVER FIBROSIS EVALUATION USING 2D-SWE

F. Bende, I. Speroe, R. Sirlé, M. Danila, S.A. Popescu
Gastroenterology And Hepatology, University of Medicine and Pharmacy "Victor Babes" Timisoara, Timisoara/Romania

Contact E-mail Address: bendefelix@gmail.com

Introduction: Liver stiffness (LS) evaluation as a marker of fibrosis is usually considered reliable when it fulfills some quality criteria. Classic criteria used for Transient Elastography (TE) are: ≥10 valid measurements, ≥60% success rate, and interquartile range/median ratio (IQR/M) < 0.30 [1]. However, new quality criteria were proposed using the IQR/M ratio, therefore the LS measurements can be classified into three categories: very reliable (IQR/M < 0.10), reliable (0.10 < IQR/M < 0.30), poorly reliable (IQR/M > 0.30) [2].

Aims & Methods: The aim of this study was to assess the impact of using quality criteria (LS) evaluation by means of 2D Shear Wave Elastography from General Electrics (2D-SWE.GE), while using Transient Elastography (TE) as the reference. We included 226 subjects in our study, with or without chronic liver disease, in whom LS was assessed using 2D-SWE.GE (LOGIQ E9, GE Healthcare) and TE (FibroScan, EchoSens). Reliable LS measurements were defined for TE as the median value of 10 measurements with a success rate of ≥60% and an interquartile range (IQR) <30% of the median LS values. For 2D-SWE.GE 10 LS measurements were acquired in a homogenous area and the IQR and the IQR/M were calculated in each case. We divided our subjects into 3 groups according to the 2D-SWE.GE IQR/M: IQR/M = < 0.10: 41 (18.1%) cases; 0.10 < IQR/M < 0.30: 155 (68.6%) cases; IQR/M > 0.30: 30 (13.3%) cases. We calculated the correlation coefficient between TE and 2D-SWE.GE in each group.

Results: All 226 (100%) subjects included had 10 valid measurements by means of 2D-SWE.GE and reliable results by TE. A strong positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M < 0.10 group (r = 0.84, p < 0.0001). A weak positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M > 0.30 groups. None of the correlations were significantly different between the LS values obtained by means of 2D-SWE.GE and TE in the R < 0.10 group (r = 0.80, p = 0.0001). A weak positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the R > 0.30 groups as compared to the R < 0.30 group (both p > 0.001). Statistical differences were found between the correlations in the IQR/M < 0.10 and 0.10 < IQR/M ≤ 0.30 groups (p = 0.043).

Conclusion: Using the IQR/M < 0.30 as quality criteria significantly increase the reliability of LS measurements by means of 2D-SWE.GE. Using IQR/M < 0.10 criteria does only slightly improve the reliability of 2D-SWE.GE LS measurements as compared to 0.10 < IQR/M ≤ 0.30 criteria. Contact E-mail Address: akskris@mail.ru

References:

P1314 MONITORING OF LIVER FUNCTION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE IN COMBINATION WITH METABOLIC SYNDROME

K. Akseenytschuk, E. Sklyarov, N. Kuryla, A. Bochor
Therapy #1 And Medical Diagnostics, LNMU by Danylo Galytskyi Dept. of Therapy, Lviv/Ukraine

Contact E-mail Address: akskris@mail.ru

Introduction: 13C-methacetin breath test (13C-MBT) is used to specify the detoxification function of the liver by determination its metabolic capacity and degree of hepatocytes recovery.

Aims & Methods: The study involved 113 patients with MS aged from 37 to 82 years. The criteria for liver stiffness (LS) evaluation by means of 2D-SWE.GE and reliable results by TE. A strong positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M < 0.30 groups as compared to the IQR/M > 0.30 group (both p > 0.001). No statistical differences were found between the correlations in the IQR/M < 0.10 and 0.10 < IQR/M ≤ 0.30 groups (p = 0.043).

Conclusion: Using the IQR/M < 0.30 as quality criteria significantly increase the reliability of LS measurements by means of 2D-SWE.GE. Using IQR/M < 0.10 criteria does only slightly improve the reliability of 2D-SWE.GE LS measurements as compared to 0.10 < IQR/M ≤ 0.30 criteria. Contact E-mail Address: akskris@mail.ru

References:

P1315 IDENTIFICATION OF P73 AS A NOVEL TRANSACTIVATOR OF IGFBP4 GENE EXPRESSION IN HEPATOCELULAR CARCINOMA

A. Chacón, S. Heckel1, E. Aschenbrenner1, K. Pollinger1, S. Schlösser1, C. Kunz1, M. Müller-Schilling2
1Department For Internal Medicine I, University Hospital Regensburg, Regensburg/Germany

Contact E-mail Address: sebastian-heckel@outlook.de

Introduction: Members of the p53-family, including p53, p63 and p73, are known for their involvement in the regulation of cell cycle, cell senescence and apoptosis. In their role as transcription factors and depending on their splice variants—with transactivation domain (TA) or dominant negative (DN) - p53 and its siblings are capable of activating or inhibiting the transcription of specific target genes. We previously identified the gene for Insulin-like Growth Factor Protein 4 (IGFBP4) as a potential p53-family target gene with prognostic relevance in hepatocellular carcinoma (HCC). In contrast to p53, the IGF system takes part in tissue growth and cell survival. IGFBP4 acts as inhibitor limiting IGF effects suggesting a possible interaction with p53 affairs. Aims & Methods: The aim of this study was to characterize the regulatory influence of p53 family members on the IGFBP4 gene. Hep3B cells were transfected with p53-transfected cells. Induction of intracellular IGFBP4 protein was detected by luciferase reporter assays to evaluate binding of p53-family members.

Results: IGFBP4 expression was increased by more than 30-fold in TA73-transfected Hep3B cells, by more than 15-fold in DNp63- and by 3-fold in p73-transfected cells. Induction of intracellular IGFBP4 protein was detected in all transfected Hep3B cells, whereas extracellular IGFBP4 levels were only measurable after TA73 and DNp63 transfection. Database analysis identified 2 putative p73 binding sites within intron 1 of the IGFBP4 gene. Intron 1-dependent luciferase activity was increased by up to 20-fold in TA73-transfected cells. This induction was reduced by up to 70% when one of the putative binding sites was deleted.

Conclusion: These results identify the IGF inhibitor IGFBP4 as novel target gene of p73. Further analyses on the role of p53-family members may shed light on the mechanisms of IGFBP4 expression and contribute to the understanding of p53-family network and IGF signaling. Since in an independent study we identified IGFBP4 as novel target gene, these results highlight the link between p53-family-mediated transcriptional activation and IGF-signaling pathways which may have therapeutic relevance in the treatment of HCC. Contact E-mail Address: akskris@mail.ru

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
P1316 NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH 2 TYPE DIABETES MELLITUS AND CORONARY HEART DISEASE AGAINST THE BACKGROUND OF METABOLIC SYNDROME. HOW TO DIAGNOSE?

K. Aksentiychuk, E. Sklyarov, N. Kurylak, A. Bochar

Therapy #1 And Medical Diagnostics, LNMU by Danylo Galiskyi Dept. of Therapy, Lviv/Ukraine

Contact E-mail Address: akskris@mail.ru

Introduction: It is known that to determine nonalcoholic fatty liver disease (NAFLD), which develops in progress of body mass index (BMI) from 19% to 35%, using instrumental and laboratory methods, which include an ultrasound, the determination of the transmamline levels, steatostest, 13C-methacetin test. However, these research methods do not allow to clearly differentiate steatosis from the steatohepatitis, that reduces their credibility.

Aims & Methods: 163 patients (75 men, 88 women) with 2 type diabetes mellitus and coronary heart disease with metabolic syndrome, were examined. The average age age was 55.82 years, $\bar{S} = 15.04$. 25 patients were diagnosed as steatosis, 66 - steatohepatitis group. In 25 patients laboratory pathology was not found, which identified as a control group.

For verification of steatosis and steatohepatitis diagnosis the level of ALT, diameter of the portal vein, the degree of CHD and the metabolic rate of methacetin and the cumulative dose $^{13}$CO$_2$ in 120 minute has decreased in patients with steatohepatitis. We found that in ALT and the diameter of the portal vein negatively correlated with cumulative dose of $^{13}$CO$_2$ on 120 minute in patients with steatohepatitis.

Conclusion: There was found that in ALT and the portal vein diameter negatively correlated with cumulative dose of $^{13}$CO$_2$ on 120 minute in patients with steatohepatitis. Therefore, a decrease in the metabolic capacity from 15 to 10% accompanied by an increase in ALT levels (more 0.68 mmol/l) and the diameter of the portal vein (13 mm).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1318 LIVER TRANSIENT ELASTOGRAPHY IN NON-ALCOHOLIC FATTY LIVER DISEASE: IS THERE ANY PREDICTIVE ROLE IN THE DEVELOPMENT OF COLORECTAL POLYPS?

M. Gravito-Soares$^1$, E. Gravito-Soares$^2$, D. Gomes$^1$, A. Simão$^1$, L. Tome$^2$

$^1$Centro Hospitalar e Universitário Coimbra, Coimbra, Portugal, Coimbra/Portugal
$^2$Gastroenterology, Centro Hospitalar e Universitário Coimbra, Coimbra, Portugal, Coimbra/Portugal

Contact E-mail Address: ms18498@gmail.com

Introduction: Recent studies have demonstrated an association between decreased glucose tolerance, dyslipidemia and metabolic syndrome; and increased risk of colorectal polyps. Patients with non-alcoholic fatty liver disease (NAFLD) often have these risk factors. The association between NAFLD and colorectal polyps has been poorly studied.

Aims & Methods: We aimed to evaluate the prevalence and risk factors of colorectal polyps in patients with NAFLD. This was a retrospective observational study. Liver TTE was free of complications. The patients underwent breath test for methacetin, breath test for methacetin using 13C was performed, breath test for methacetin using 13C was performed.

Conclusion: It was found that the prevalence of colorectal polyps is 28.2% (n=29). The age group was 28.2% (n=29). The age group was 28.2% (n=29). The age group was 28.2% (n=29). The age group was 28.2% (n=29). The age group was 28.2% (n=29).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1317 BMP1–3 IN LIVER FIBROSIS

I. Grgurević$^1$, L. Grgurević$^1$, S. Vučković$^2$, I. Erjavec$^2$, I. Dumić Cuček$^3$

$^1$Graduate School, Zagreb/Croatia
$^2$Medical School University of Zagreb, Zagreb/Croatia

Contact E-mail Address: lgrgurevic@mef.hr

Introduction: Liver fibrosis (LF) is a progressive pathological process resulting in accumulation of excess extracellular matrix proteins. A metalloprotease BMP1–3 is involved in the liver fibrosis. We have recently discovered that BMP1–3 isoform circulates in the plasma and its neutralization reduces the accumulation of excess extracellular matrix proteins. A metalloprotease BMP1 which is involved in the liver fibrosis.

Aims & Methods: We used the models of CCl4-induced LF in rats. Animals were treated with BMP1–3 antibody at two different concentrations (20 and 50 μg/kg) for 3 and 8 weeks. Extent of LF was assessed by histology, morphometric analysis, shear wave elastography and hydroxyproline (HP) content measurement. BMP1 protein (50 μg/kg) was used as a comparative therapy.

Results: In our experiments the presence of BMP1–3 was immunohistochemically demonstrated in both healthy and cirrhotic liver suggesting that at least a part of circulating BMP1–3 is produced in the liver. Administration of BMP1–3 Ab resulted in inhibition of the progression of liver fibrosis. Administration of BMP1–3 Ab at a dose 20 μg/kg and 50 μg/kg exerted antifibrotic activity comparable to that of BMP1. Apart from blocking the BMP1–3 activity, it is important for collagen maturation, administration of BMP1–3 Ab was accompanied by the decrease in expression of collagen type I and II. BMP1 treatment decreases expression of Decorin mRNA was enhanced. Decorin has evident anti-fibrotic activity in the liver after injury with CCL4 and silencing caused an increased activation of HSCs both in vivo and in vitro. Rats treated with both BMP1–3 antibody concentration had significantly lower amount of collagen type I when compared to the CCL4-treated group. Direct proportionality was found between the degree of fibrosis and liver stiffness. We showed for the first time a distinct correlation between the HP level in liver, morphometric analysis and elastography of the liver.

Conclusion: Our results suggest that neutralization of BMP1–3 is a promising therapeutic approach in preventing the liver fibrosis progression.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1319 “SUBTRACTED ADULTHOOD MASS INDEX” (SAMI)- A NEW INDEX TO PREDICT NAFLD RISK IN NON-OBESE INDIVIDUALS

A. Kıyak$^1$, S. Elbol$^1$, M. Saruc$^2$, O. Saygılı$^1$, N. Tözün$^2$

$^1$School Of Medicine, Acibadem University, Istanbul/Turkey
$^2$Radiology, Acibadem University Faculty of Medicine Acibadem Baküko Hospital, Istanbul/Turkey

Contact E-mail Address: atakiyak@gmail.com

Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common clinicopathological condition which may progress from simple steatosis to NASH, cirrhosis and hepatocellular carcinoma (HCC). Although obesity is accepted as the main risk factor for NAFLD, non-obese individuals are often diagnosed with NAFLD suggesting that high BMI may not be a sine qua non for the presence of NAFLD. Recent studies suggested that there might be a correlation between weight gain and metabolic diseases.

Aims & Methods: In our research; the relationship between NAFLD in non-obese individuals and the amount of weight gain during adulthood was investigated and a new index that is different from BMI was proposed. 362 individuals were included in the survey. The subjects were selected among patients who had abdominal ultrasonography (USG) in our clinic, during the last 6 months. A 5% increase in echogenicity detected in the USG was defined as the diagnostic

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Results: Among 362 participants 169(46.7%) were men with an average age of 44.8±10.73. 78 (21.6%) participants were non-obese, the average age of the group being 46.78±9.12. Out of 78 obese individuals 73 (93.5%) were NAFLD(+). The average age of the 284(78.4%) non-obese subjects was 44±11.05. Among non-obese people 106(39.5%) were NAFLD(+) and average age was 48.07±10.13 while amongst NAFLD(+) people was 38±7.29. Non-obese NAFLD(+) patients reported they had gained significant amount of weight during their adulthood. This information led us to create, a new index named “Subtracted Adulthood Mass Index” (SAMI) to estimate the risk of NAFLD development in non-obese individuals. SAMI is calculated by dividing the difference between the subject’s current weight and his/her weight at the age of 20 years to his/her height squared (kg/m2). SAMI values for non-obese attendants were calculated. When the cut-off value was set as SAMI 4 kg/m2, sensitivity was 76.3%, specificity was 79.1, positive predictive value (PPV) was 84.3% and negative predictive value (NPV) was 69.4%. At a cut-off of SAMI 3 kg/m2 sensitivity was 85.2%, specificity was 66.9%, PPV was 79.1%, NPV was 75.4%. Conclusion: In this pilot study, we found that weight gain in adulthood is an important predictor of NAFLD development in non-obese individuals. The new index named SAMI can correctly identify non-obese people under the risk of developing NAFLD. Cut-off value of SAMI has been set as 3 kg/m2. We also observed that NAFLD prevalence increases as SAMI value goes up. We propose that SAMI is appropriate for clinical use to estimate the risk of NAFLD in on-obese individuals.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1321 AUTOMATED RAPID DETECTION SYSTEM USING THE QUENCHING PROBE METHOD FOR DETECTING rs738049 POLYMORPHISM IN PNPLA3 IN NONALCOHOLIC FATTY LIVER DISEASE

Y. Kawaguchi1, A. Nakamura2, K. Shibayama1, F. Koga3, S. Nakashita1, D. Morisaki1
1Department Of Hepatology And Pancreatology, Saga-Ken Medical Centre Koseikan, Saga, Japan
2Department Of Clinical Laboratory, Saga-ken Medical Centre Koseikan, Saga, Japan
3Department Of Nursing, Saga-ken Medical Centre Koseikan, Saga, Japan

Contact E-mail Address: kawaguy222@gmail.com

Introduction: Recent studies have shown that the single nucleotide polymorphism (SNP) rs738049 in the PNPLA3 gene is strongly associated with severity of nonalcoholic fatty liver disease (NAFLD).1,2 However, the traditional direct sequencing (DS) method is time-consuming and labor-intensive. The i-density™ (ARKRAY, Inc.), which is based on the quenching probe (QP) method, automatically detects target genes in blood samples by fluorescence quenching within 90 min.3 Aims & Methods: The current study compared the QP and DS methods for detecting SNPs in the PNPLA3 gene, and established the impact of the genotype on prognosis of NAFLD. We enrolled 107 patients with fatty liver irrespective of etiology. We used the i-density fully automated genotyping system with QP. The requisite number of tips, reaction tubes, reagent packs and blood samples were set in their designated places. The forward and reverse polymerase chain reaction (PCR) primers and guanine QP were 5'-cttctctctcctttgctttcacag-3', 5'-gtgtgagca-

References

Conclusion: We suggest that ATP7B does not seem to be involved in cp resistance, at least in hepatic cells. OCT3 represents a novel marker of cp resistance. OCT3 expression could be a valuable tool for improved prognosis of cirrhosis therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1322 EFFECT OF ORLISTAT ON TOTAL LIVER FAT QUANTITATION USING NOVEL MAGNETIC RESONANCE IMAGING IN OBSESE PATIENTS WITH NON-ALCOHOLIC STEATOHEPATITIS: INTERIM ANALYSIS OF A PROSPECTIVE, RANDOMIZED, SINGLE-CENTER, OPEN-LABEL TRIAL.

J. Ye, W. Yanqin, H. Xuan, Z. Bihui
Gastroenterology, The First Affiliated Hospital Of Sun Yat-sen University, Guangzhou/China

Contact E-mail Address: sophiazhang@hotmail.com

Introduction: Orlistat is an effective pharmacologic weight loss treatment by inhibiting intestinal lipase to reduce dietary fat absorption. Previous studies have suggested that it lowers liver fat by ultrasound or semi quantitative histological scoring in nonalcoholic fatty liver disease (NAFLD).

Aims & Methods: We aimed to examine the efficacy of orlistat versus placebo in reducing liver fat content by the magnetic resonance imaging (MRI) based on chemical shift imaging. A total of 51 NAFLD patients diagnosed by MRI were randomly assigned to receive tricedaily 120mg oral Orlistat or placebo for 6 months, among them 30 (14 in the Orlistat group and 16 in the placebo group) were included in the interim analysis. Both groups received. Clinical parameters, laboratory tests and liver fat content were measured at baseline and 6 months including body mass index (BMI), waist hip ratio (VHR), liver enzymes, haemoglobin A1c, total cholesterol (CHOL), serum triglycerides (TG), fasting plasma insulin (FPI), homeostasis model assessment IR (HOMA-IR). The primary outcome was a change in liver fat quantified by MRI which is based on Dixon technique with two-point chemical shift-based fat-water separation method. The chi-squared test and paired t test were used to compare mean differences between fat fractions between two groups.

Results: Although both groups were comparable in demographics (31.38 ± 3.19) than that of the placebo group (26.78 ± 3.02, p < 0.001), while the other baseline characteristics including liver fat fraction and the proportion of hypertension, hyperlipidaemia, diabetes mellitus type 2, and hyperlipidaemia were similar. Compared to baseline, end-of-treatment liver fat content was significantly lower in the Orlistat arm (19.38% ± 9.52% to 11.56% ± 7.49%, change was 7.72 ± 6.39%; P = 0.001) but not in the placebo (16.05% ± 8.7% to 14.17% ± 9.58%, change was 1.43% ± 9.54%; P = 0.640) arm. Change of BMI was the only independent factors correlated with reduction of liver fat content (β = 0.522, p = 0.006).

Conclusion: Orlistat did significantly decrease liver fat in NAFLD patients via its effect of lowering weight.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1323 LONG-TERM COPPER EXPOSURE OF HEPATIC CELLS LACKING FUNCTIONAL ATP7B

Transplantationsklinik, Universitätsklinikum Münster, Münster/Germany

Contact E-mail Address: guttmann.sarah@ukmuenster.de

Introduction: Copper transporter ATP7B is essential for hepatic Cu homeostasis and loss of its function is involved in the inherited autosomal recessive disorder Wilson Disease (WD). Symptoms of WD are i.e. elevated Cu accumulation in liver and brain. Understanding of molecular mechanisms involved in Cu homeostasis is essential to improve therapeutic options. The molecular impact following long-term elevated Cu in hepatic cells lacking functional ATP7B has not been explored.

Aims & Methods: HepG2 cells lacking functional ATP7B (KO) were used for generation of a copper resistant subline (CuR). Cell growth, cell viability (MTT), cell proliferation (XTT), cell death (TUNEL) and copper transporting activity of MT1 and CTR1 were measured. Additional measurements of Cu handling were performed by siRNA and drug activation (verapamil). Notably, cell viability and copper transporting activity were significantly affected such that reduction indicated that MDR1 is involved in Cu homeostasis. In addition, hepatic cells derived from a WD patient and from the rat animal model confirmed our observations.

Conclusion: Our analysis of long-term Cu exposure presents new insights in copper biology and suggests a new role of MDR1 in the pathogenesis of Wilson disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1324 THE NONALCOHOLIC FAT LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBSESE PATIENTS BEFORE BARIATIC SURGERY: THE NONALCOHOLIC FAT LIVER DISEASE FIBROSIS SCORE IN PREDICTING FIBROSIS IN MORBIDLY OBSESE PATIENTS BEFORE BARIATIC SURGERY

R. G. Silva Junior1, T.F.A. Cavakantê1, W. Freitas Junior2, A. Vieira2, A. G. Silva Junior1
1 Medicine Department, Santa Casa School of Medical Sciences, São Paulo/Brazil
2 Surgery Department, Santa Casa School of Medical Sciences, São Paulo/Brazil

Contact E-mail Address: thiciani@hotmail.com

Introduction: Non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) are increasingly common cause of chronic liver diseases worldwide. Most patients with severe obesity who undergo bariatric surgery have NAFLD, which is associated insulin resistance, type 2 diabetes mellitus, hypertension, and obesity-related dyslipidemia. Identifying significant fibrosis in patients is crucial to evaluating prognosis and possible therapeutic indications. Currently, liver biopsy is the gold standard for diagnosis of liver fibrosis.

Aims & Methods: We aimed to evaluate the NAFLD fibrosis score for the assessment of significant fibrosis in patients with morbid obesity before undergoing bariatric surgery. A total of 69 NAFLD patients (median BMI 47 kg/m²) were prospectively enrolled from June 2015 to November 2016 at one Brazilian university hospital. All patients were evaluated with routine laboratory before bariatric surgery. Age, body mass index, hyperglycemia, platelet count, albumin and AST/ALT ratio were applied to the score formula. Biopsies were interpreted by a single experienced pathologist. NAFLD and fibrosis were classified according to the NASH Clinical Research Network NAFLD activity score. A comparison of the receiver operating characteristic curve (AUROC) was calculated for the diagnostic test.

Results: On liver biopsy, 29 patients (42%) had some degree of fibrosis, with 14 patients (20%) having significant fibrosis (F3–4). With standard thresholds for the specificity of the NAFLD fibrosis score for identification of significant fibrosis was 58.9%. Using modified thresholds, the specificity could increase. For predicting significant fibrosis, for a cut-off of 1.05, the score had 46.15% sensitivity and 96.43% specificity with AUROC of 0.74. Conclusion: The nonalcoholic fat liver disease fibrosis score has good accuracy to identify and significant fibrosis in morbidly obese patients subjected to bariatric surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1325 COMPARISON OF FIBROSCAN® AND FATTY LIVER INDEX (FLI) TO SCREEN FOR FATTY LIVER DISEASE IN A LARGE COHORT OF EMPLOYEES: WHERE IS THE OPTIMAL CUT OFF?

M. Teufelhart1, C. Rabisch, B. Mehl, R. Winker, B. Meyer, T. Scherzer
Health And Prevention Center, Sanatorium Hera, Vienna/Austria

Contact E-mail Address: manuela.teufelhart@hera.co.at

Introduction: FLI was developed as an alternative to steatosis (Bedogni et al.,2006) and a cut-off value ≥60 ruled in (positive likelihood ratio [LR+] 4.3) steatosis in Italians diagnosed with ultrasound. Fibroscan®CAP is more sensitive for the diagnosis of steatosis than ultrasound. Aim of this study is to evaluate the use of Fibroscan® in comparison with FLI to screen for fatty liver disease in Austrian bank employees and to recalculate optimal FLI cut-off values. Beside weight reduction and diet EASL guidelines recommend physical activity >150 min per week for prevention and treatment of steatosis.

Aims & Methods: More than 1000 Austrian bank employees will be screened for liver diseases with Fibroscan®. A kPa value ≥7.9 (M-probe) and ≥7.2 (XL-probe) is categorized as fibrosis. Additionally Fibroscan®CAP with a cut-off value ≥248 dB/m is defined as steatosis, ≥300 dB/m as high-grade steatosis. Heavy drinkers and patients with steatosis are identified with AUDIT and SIAC questionnaires. Weekly physical activity is classified into “none”, “<150 min” and “≥150 min”.

Results: To date 482 employees [age 45.9 ± 8.7 (mean ± SD); m:207; BMI 25.4 ± 4.4] have been included in this analysis. 1448 (29.3%) employees had signs of liver fibrosis and received further investigations. Fibroscan®CAP values ≥248 dB/m are shown in 156/482 (32.4%) employees (m:91 [58%], f:65 [42%]), 56/482 (11.6%) had CAP values ≥300 dB/m. Furthermore 15/156 (9.6%) patients with steatosis are heavy drinkers. FLI significantly predicts fibrosis. FLI cut-off values (adj. R² = 0.25; 55.0 CAP values [adj. R² = 0.29]; 28.1 M-probe and 32.2 XL-probe) which indicates a large effect size. For this study population, a FLI cut-off value ≥40 (CAP ≥248 dB/m) and ≥50 (CAP ≥300 dB/m) rules in fatty liver disease with a LR+ of 4.7 (SN:84%; SP:75%); and 4.8 (SN:83%; SP:83%), respectively. An additional consideration of physical activity level in the current cohort revealed that inactivity increases the LR+ of FLI values to predict NAFLD (trendwise significant, p = 0.051), indicating lower cut-off values.
Conclusion: We conclude that Fibroscan® represents an eligible tool to diagnose liver diseases in Austrian bank employees. Compared to the previous work of Bedogni et al. FLI predicts fatty liver at a lower cut-off level, at least for the examined population. This difference might be due to the fact that FibroScan® CAP is more sensitive than ultrasound.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1326 METABOLOMICS IDENTIFIES PROGRESSIVE NAFLD
D. Crisan1, M. Grigorescu1, A. Suzu2, H. Stefanescu2, F. Romanicec1, C. Socaciu1, L. Avram1, V. Doncu1, C. Radu2
1University of Medicine and Pharmacy Cluj-Napoca, Cluj-Napoca/Romania
2Hepatology, Cluj-Napoca University of Medicine and Pharmacy 3rd Medical Clinic, Cluj-Napoca/Romania
3Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, cluj-napoca/Romania
4Research and Development Centre BIODIATECH for Applied Biotechnology in Diagnostic and Molecular Therapy, Cluj-Napoca/Romania
5Clinical Municipal Hospital Cluj-Napoca, Cluj-Napoca/Romania

Contact Email Address: crisandc@gmail.com

Introduction: Nonalcoholic fatty liver disease (NAFLD) is an affection with increasingly prevalence worldwide, having an important impact on morbidity and mortality, especially when it associated severe fibrosis. Aims & Methods: We aimed to assess the metabolites that are associated with fibrosis stages in NAFLD, using metabolic method. A total of 40 patients were included in the study, 30 diagnosed with nonalcoholic fatty liver disease (NAFLD) and 10 controls. Steatosis and fibrosis were assessed using Fibromax elaborated by Biopredictive (R) (Paris, France). New metabolomic techniques (high performance liquid chromatography coupled with mass spectrometry (HPLC-MS) and principal component analysis (PCA)) were used to identify final products of various metabolic pathways correlated with liver fibrosis.

Results: Of the 30 patients with NAFLD included in the study, 6 patients (20%) had severe fibrosis. The metabolic profile identified four metabolites that are associated with severe fibrosis: 1.25(OH)2vitamin D (p = 0.03), isosolphatidyl- letanolamine LPE 0:22:6 (p = 0.05), Lyso-phosphatidylcholine LPC 18:2 (p = 0.003), and high levels of butylen carnitine (p = 0.04). Of these, LPE was the strongest predictor of severe fibrosis (AUROC=0.795, Sensitivity (Se)=88.33%, specificity (Sp)=78.79%), but the others molecules were also significantly associated with severe fibrosis: vitamin D (AUROC = 0.776), butylen carnitine (AUROC = 0.737), LPC 18:2 (AUROC = 0.768). As the metabolomics permits the evaluation of all these molecules the same time, we can use them combined in order to increase the diagnostic accuracy. In our case, the combined use of the four metabolites determined an AUROC of 0.839, with Se of 100% and Sp of 68.5%.

Conclusion: In our metabolomics, we can identify patients with fatty liver and severe fibrosis who are significantly exposed to a progressive disease and a higher mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1327 CHRONIC RENAL FAILURE IS ASSOCIATED WITH THE DEVELOPMENT OF NAFLD/NASH
S. Gehring1, P. Di Fazio2, T.M. Gress1, T.T. Wisnioski1
1Gastroenterology, Philipps University, Marburg/Germany
2Department Of Visceral Thoracic And Vascular Surgery, Philipps University Marburg, Marburg/Germany
3Klinik Für Gastroenterologie, Endokrinologie, Stoffwechsel Und Infektiologie, Philipps Universität Marburg, Marburg/Germany

Contact Email Address: sonjagehring@gmx.de

Introduction: Chronic renal failure (CRF) is frequently associated bone metabolism disorders. Interestingly end stage renal failure (chronic hemodialysis) was significantly correlated with the development of NAFLD/NASH with significantly higher levels of AST/ALT and gGT. Hyperparathyroidism and hyperphosphatemia Transaminases were significantly lower if Vitamin D was supplemented.

Conclusion: Vitamin D deficiency is often present in patients with kidney diseases such as chronic renal failure. Vitamin D levels are correlated to age and sex of the patient. Patients suffering from renal failure are on high risk developing NAFLD/NASH if diminished vitamin D levels are present. Supplement of Vitamin D saves from NAFLD/NASH The correlation of hyperparathyroidism and NAFLD/NASH has to be further investigated in larger patient groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1328 NONINVASIVE DIAGNOSTICS OF NONALCOHOLIC FATTY LIVER IN PATIENTS WITH TYPE 2 DIABETES MELLITUS
K. Aksemiychok1, E. Sklyarun2, A. Bochar1
1Therapy #1 And Medical Diagnostics, LNMU by Danylo Galytskyi Dept. of Therapy, Lviv/Ukraine
2Lviv National Medical University, Lviv/Ukraine

Contact Email Address: akskris@mail.ru

Introduction: Usually for the determination of nonalcoholic fatty liver disease (NAFLD) there are instrumental and laboratory techniques, including ultrasound diagnosis, determination of amino transferases, steatotest, 13C-methacetin breath test (13C-MBT). These methods in the diagnosis of NAFLD clinical forms is not specific and do not allow make difference between steatosis and steatohepatitis. The determination of NAFLD clinical forms is a priority in the prediction of further disease and choice of treatment. Steatohepatitis is the active form of NAFLD and progresses to fibrosis often with subsequent liver parenchyma degeneration into cirrhosis. Simultaneously, steatosis could be possibly treated in the early stages of disease.

Aims & Methods: The study involved 65 patients with type 2 diabetes and coronary heart disease with metabolic syndrome, aged 37 to 82 years (mean age 53.82 ± 3.46), 29 men, 36 women. According to the ultrasound, the stage of fatty infiltration were differentiated by such criteria for steatosis as diffuse liver par- enchyma degeneration into cirrhosis. Simultaneously, steatosis could be possibly treated in the early stages of disease.

Results: For steatosis and steatohepatitis determination the ALT monitoring was used, where the level exceeding 0.68 mmol/l to steatosis, and below 0.68 mmol/l to steatohepatitis. Portal vein diameter measurement above 13 mm was considered as liver enlargement. Liver volumes were measured by 13C-methacetin breath test (13C-MBT). These methods in the diagnosis of NAFLD clinical forms is not specific and do not allow make difference between steatosis and steatohepatitis.

Conclusion: Differentiation between steatosis and steatohepatitis should be perform by the cumulative dose 13C02 on 120 minute evaluation and ALT levels and portal vein diameter assessment.

Disclosure of Interest: All authors have declared no conflicts of interest.

176 patients, admitted to the department of nephrology of the University Hospital Marburg for renal disorders whose plasma vitamin D concentration, phosphate and parathormone levels and liver enzyme levels had been quantified beforehand, were enrolled and a retrospective investigation of laboratory para- meters (including electrolytes, hormones, and vitamins) and pre-existing medical conditions (including high blood pressure, diabetes, hyperlipoproteinaemia, and more) followed. Appropriate statistical tests were used to characterise the cohort (ANOVA; MANN-Whitney-U; FISHER-EXACT) using SPSS™. Other hepato- pathies were excluded. Steatosis was assessed by ultrasonography.

Results: Patients were divided into 4 groups according to plasma vitamin D levels (normal >25 ng/ml; low <25 ng/ml) and transaminase levels (AST/ALT >/G7 >30 U/l; normal: AST/ALT >/G7 <30 U/l). Low 1,25-hydroxivitamin D levels correlated significantly with high kreatinine, urea, and LDL levels, while low 25-hydroxivitamin D levels correlated with high cholesterol and triglyceride levels, suggesting a relationship between low vitamin D levels and fat metabolism disorders. Interestingly end stage renal failure (chronic hemodialysis) was significantly correlated with the development of NAFLD/NASH with significantly higher levels of AST/ALT and gGT. Hyperparathyroidism and hyperphosphatemia Transaminases were significantly lower if Vitamin D was supplemented.

Conclusion: Vitamin D deficiency is often present in patients with kidney diseases such as chronic renal failure. Vitamin D levels are correlated to age and sex of the patient. Patients suffering from renal failure are on high risk developing NAFLD/NASH if diminished vitamin D levels are present. Supplement of Vitamin D saves from NAFLD/NASH The correlation of hyperparathyroidism and NAFLD/NASH has to be further investigated in larger patient groups.
who underwent voluntary hepatobiliary ultrasound. NAFLD was diagnosed unifying the ground and absence of chronic liver diseases such as autoimmune hepatitis, hepatitis B or C viruses induced hepatitis, hepatobili-pillary cancers, Wilson’s disease, >10 g/day alcohol consumption, and receiving some specific medications known to cause hepatic steatosis (like amiodarone, valporic acid, etc). Lean individuals were defined as those with body mass index (BMI) <25 kg/m². Student’s-t test was used for comparisons of continuous variables and Chi-square test was used for comparison of categorical variables. Receiver operating characteristics (ROC) curve analysis using area under curve (AUC) was used for analysis of optimal cutoff values for BMI and waist circumference in association with lean NAFLD.

Results: 1343 individuals were included. 165 individuals (12.3%) was diagnosed to have NAFLD. 129 individuals (9.6%) had mild NAFLD and 36 individuals (2.7%) had moderate NAFLD. None of the participants had severe NAFLD. In univariate analysis, history of diabetes mellitus (DM) (OR = 2.25; 95% CI: 1.15–4.40, P = 0.015) and metabolic syndrome (OR = 2.80; 95% CI: 1.74–4.48, P < 0.001) were associated with NAFLD. Higher BMI and waist circumference, higher systolic and diastolic blood pressure, higher serum triglyceride, cholesterol, fasting glucose (FG), and alanine aminotransferase (ALT) were associated with NAFLD (P < 0.05). In multivariate regression analysis, higher BMI and waist circumference, higher serum ALT, FPG and cholesterol were independent predictors of NAFLD in our study population (Table). A cutoff value of 22.3 kg/m² for BMI was predictor of NAFLD (sensitivity = 72%; specificity = 60%; AUC = 0.728, P < 0.001). A cutoff value of 79.5 cm for waist circumference was predictor of NAFLD in our study population (sensitivity = 80%; specificity = 68%; AUC = 0.753, P < 0.001). Table: Multivariate regression analysis showing independent risk factors for lean NAFLD.

Conclusion: Lean NAFLD was prevalent in our study population and was associated with metabolic risk factors. BMI and waist circumference can be used for predicting this type of NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1331 ASSESSING BAVENO VI CRITERIA WITH A NEW POINT-SHEAR WAVE ELASTOGRAPHY TECHNIQUE: THE BAVELASTPQ STUDY

1Internal Medicine, Gastroenterology And Hepatology, Catholic University of Sacred Heart - Policlinico "A.Gemelli", Rome/Italy
2Catholic University of Sacred Heart - Policlinico "A.Gemelli", Rome/Italy

Contact E-mail Address: matteogacciochi@yahoo.it

Introduction: While some studies have evaluated the ability of new “real-time” elastography devices such as 2-D Shear Wave Elastography (SWE) and Virtual Touch Quantification (ARTIF) in predicting the presence of high-risk gastroesophageal varices, no study has explored the potential role of another point-SWE technique, ElasPQ, in the assessment of clinically significant portal hypertension.

Aims & Methods: The aim of our study was to identify a liver stiffness cut-off value measured by ElasPQ and/or laboratory parameters that could help identify patients who can safely avoid screening endoscopy, similarly to the recently proposed Baveno VI criteria which recommends a liver stiffness value <20 kPa measured by transient elastography in combination to a platelet count >150,000/µl. Data were collected on 1385 patients who underwent ElasPQ measurement from January 2013 to January 2016 in our Department. Inclusion criteria were a liver stiffness value of ≥7 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of compensated chronic liver disease. We choose this specific liver stiffness cut-off value in order to harmonize with the recently advanced fibrosis and cirrhosis, based on the limited literature available on this specific elastographic technique. Exclusion criteria were history of decompensated liver disease, evidence of porto-spleno-mesenteric vein thrombosis and non-cirrhotic portal hypertension. Varices were graded as low risk (grade <2) or high risk (grade ≥2).

Results: The study included 184 patients (114 [62%] hepatitis C, and 160 [87%] Child-Pugh A). Varices were present in 36% cases, with 10% prevalence of high-risk varices. According to ROC curve analysis liver stiffness measurement and
platelet count were evaluated as predictors of high-risk varices. Overall 74/184 (40%) met the new “BavenoVIII” criteria (that is, liver stiffness <12 kPa and platelet count >150,000/µL). Within this group 11/63 (17%) had any grade of varices and only 1/73 (1%) had high-risk varices. The BavenoVIII criteria gave sensitivity of 0.95, specificity of 0.44, a positive predictive value of 0.61 and a negative predictive value of 0.98. The AUROC for liver stiffness and platelet count was 0.81 and 0.76, respectively.

Conclusion: The BavenoVIII criteria correctly identified 99% of patients with high-risk varices. By applying such criteria we could have potentially avoided 40% surveillance endoscopies in our cohort. To our knowledge this is the first study that evaluated the potential role of a new p-SWE technique such as ElassiPQ in the non-invasive assessment of clinically significant portal hyperten-

Disclosure of Interest: All authors have declared no conflicts of interest.

PI332 PROTON PUMP INHIBITORS INTAKE NOT ASSOCIATED WITH HEPATIC ENCEPHALOPATHY IN CIRRHOTIC PATIENTS

C. Teixeira1, A. Antunes2, E. Danzas1, A. M. Vaz2, P. Queiroz3, A. L. Alves1, B. Peixe4, I. Cremers1, H. Guerreiro1, A. P. Oliveira1
1Gastroenterology, Centro Hospitalar de Setubal, Setubal/Portugal
2Gastroenterology, Centro Hospitalar do Algarve, Faro/Portugal

Contact E-mail Address: ac.corda.teixeira@gmail.com

Introduction: Inhibitors (PPI) are commonly prescribed and predis-
pose to small bowel bacterial overgrowth. Hepatic encephalopathy is a frequent complication of cirrhosis and is associated with intestinal dysbiosis.

Aims & Methods: This study aimed to identify a possible association between PPI intake and hepatic encephalopathy development in cirrhotic patients. Retrospective analysis of consecutive cirrhotic patients hospitalized in two Gastroenterology Departments over 3.5 years. Collection of clinical data, PPI intake was not associated with hepatic encephalopathy maintained association with infection (p = 0.057), gender (p = 0.228) or age (p = 0.352). In multivariate analysis, hepatic encephalopathy was associated with infection (p < 0.001), gastrointestinal bleeding (p < 0.001) and Model for End-Stage Liver Disease (MELD) (p < 0.001).

Conclusion: In our series, PPI intake was not associated with hepatic encephalopathy development in cirrhotic patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

PI333 CLINICAL IMPACT OF MULTIDRUG-RESISTANT BACTERIAL INFECTIONS IN LIVER CIRRHOSIS

A.C. Cunha1, A.G. Antunes1, A.M. Vaz1, P. Queiroz1, T. Gago1, J. Roseira1, A.R. Claia2, M.S. Eusebio1, B. Peixe1, H. Guerreiro1
1Gastroenterology Department, Algarve Hospital Center, Faro/Portugal

Contact E-mail Address: anacdacunha@gmail.com

Introduction: The incidence of bacterial infections in cirrhotic patients is signific-
antly higher than that observed in general population, being one of the most important causes of decompensation. In theory, the final result of an infectious disease depends of three major factors: the antibiotic resistance of the bacteria and the prompt administration of treatment; the intrinsic virulence or pathogeni-

Conclusion: Our aims within this study were to 1) analyze the incidence of MDR bacteria in patients with decompensated cirrhosis at admission (less than 24 hours after hospitalization), 2) to study its impact on 30 and 90-day mortality, and 3) to identify independent risk factors for 30 and 90-day mortality.

Results: A total of 681 hospitalizations were evaluated and 41% had a bacterial infection at admission. The 30 and 90-day mortality rate was 14.7% and 38.1%, respectively. The most common infection was spontaneous bacterial peritonitis (SBP; 40.5%), followed by urinary tract infection (UTI; 25%). About 55.6% of the patients had a microbiological documented infection (MDI). MDR bacteria were identified in 18.6% of all bacterial infections, matching 34.5% of the nosocomial acquired infections and 8.3% of the community-acquired (CA) infec-
tions. 59.1% of the UTI were MDR by a MDR bacteria and 22.1% of the non-MDI bacteria or MDR bacteria as 0.801) and the 90-day (p = 0.525) mortality rate. In the multivariate analysis, elevated BUN and bilirubin, presence of intestinal bacterial infection and lower albumin, sodium and SP02 were independently associated with 30 and 90-day mortality. Higher INR and age were indepen-

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1335 IN HOW MANY PATIENTS WE WILL DIAGNOSE ESOPHAGEAL VARICES BY USING THE BAVENO VI CRITERIA? 
S.A. Popescu1, R. Lupusoru1, R. Sirl1, M. Danila1, L. Gheorghe2, A. Seicean2, A. Trifan2, M. Curescu3, A. Goldis2, L. D. Sandulescu2, C. Cijevschi Prelipcean1, C. Staniciu4, C. Brise4, S. Jacob5, I. Sorea1
1Department Of Gastroenterology And Hepatology, Victor Babes University of Medicine and Pharmacy Timisoara, Timisoara/Romania
2Bristol Meyers Squibb

Introduction: The place of non-invasive techniques for the prediction of presence of portal hypertension in patients with liver cirrhosis is one of the current research topics.

Aims & Methods: The aim of this study was to evaluate the applicability of the Baveno VI criteria in a cohort of known compensated HCV liver cirrhosis patients, to see how often we misclassify the presence of esophageal varices (EV).

Material and method: We did a prospective multicentre study, from September 2015 to December 2016, which included all patients with perfectly compensated HCV liver cirrhosis, diagnosed by means of elastography, ultrasound, endoscopic and biological criteria prior to interferon-free treatment. All patients were evaluated by upper gastrointestinal endoscopy, transient elastography, portal pressure gradient, and blood tests. By using Baveno VI criteria we classified the patients in: probably without EV (LS<20 kPa and thrombocytes >150.000/mm³), probably with EV (LS≥25 KPa) and the “gray zone” in between these criteria.

Results: Out of 403 patients, 127 (30.7%) had LS < 20 kPa, 89 (22%) had LS between 20–25 kPa, 190 (47.3%) had LS > 25 kPa, 120 (29.7%) had thrombocytes >150.000/mm³, while 283 (70.3%) had thrombocytes <150.000/mm³. For the subgroup probably with EV, the Baveno VI criteria had PPV 84.6% (Se 40.7%, Sp 74.6%, NPV 26.8%) for predicting the presence of esophageal varices, while for the subgroup probably without EV had PPV 80% (Se 50.2%, Sp 58.6%, NPV 75.6%). The subgroup that had LS <20 kPa and thrombocytes >150.000/mm³, was composed of 60 patients. Using these criteria 32 patients were classified 80% patients, with a Se 80%, Sp 28.3%, PPV 50%, NPV 61.2%, AUROC 0.70, C1 (68.2–71.3). The best-off value for TE for predicting the presence of EV of any grade in our group was > 23 kPa; AUROC 0.79 (Se 68.8%, Sp 56.9%, PPV 44.7%, NPV 78.4%).

Conclusion: By using the Baveno VI criteria in patients with liver cirrhosis for the prediction of presence of esophageal varices, we can misclassify only 20% of patients.

Disclosure of Interest: S.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva
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All other authors have declared no conflicts of interest.

P1336 COMBINED RADIOLOGIC-BLOOD PARAMETERS AND BLOOD DERIVED NON-INVASIVE FIBROSIS SCORES IN PREDICTING OUTCOMES IN CHRONIC HEPATITIS C
R.B. Thandassery1, H. Wani1, S. Al Kabi1, M. Khanna2
1Gastroenterology, Hamad General Hospital, Doha/Qatar
2Radiodiagnosis, Hamad General Hospital, Doha/Qatar

Contact E-mail Address: doc.ragsh@gmail.com

Introduction: Non-invasive fibrosis scores (NIFS) are increasingly replacing liver biopsy (LB) for estimation of liver fibrosis. Only limited studies have evaluated the role of blood derived non-invasive fibrosis (NIFs) for predicting pre-treatment cirrhosis, development of esophageal varices (EV) and liver decompensation post antiviral treatment (AVT). 1605 patients (Jan 2002 to June 2015) with chronic hepatitis C were included. NIFS were calculated from routine blood tests and abdominal ultrasound (AUROC=0.885) and with FIB-4 score for decompensation (AUROC=0.854).

Aim: To assess the role of these simple scores for predicting the presence of esophageal varices and decompensation post antiviral treatment.

Methods: Aims & Methods: The study was approved by the local ethics committee and all patients provided written informed consent. Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. CLD patients and healthy controls were recruited from outpatients. CLD patients were identified based on clinical and radiological evidence. Written consent was obtained. Exclusion criteria: cognitive impairment from any other cause, colour-blindness or dyslexia. Baseline demographics, level of education and medical history were obtained, and a Child-Pugh score was calculated where relevant. Each patient performed the PHES test and the Stroop test. Outcomes included the time taken to perform each PHES test as well as the total PHES, the Stroop on-off time and time taken to complete 5 correct runs on the Stroop App. Results were analysed using exploratory non-parametric analysis. Results: In 333 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the healthy controls. 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4 (11%) vs. 3/61 (5%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (r = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. Results: In 333 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the healthy controls. 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4 (11%) vs. 3/61 (5%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (r = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. Results: In 333 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the healthy controls. 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4 (11%) vs. 3/61 (5%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (r = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. Results: In 333 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the healthy controls. 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4 (11%) vs. 3/61 (5%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (r = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. Results: In 333 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the healthy controls. 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4 (11%) vs. 3/61 (5%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (r = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES.
All patients 7 89 39 57 0.107

R. Stauber1, P. Fickert1, P. Stiegler3, V. Stadlbauer1

Aims & Methods:

Therefore, we conducted a randomized, double-blind, placebo-controlled study to test the effects of the multispecies probiotic Ecologic Barrier Austria) on microbiome composition, predicted metagenome functions, and tight junction function in cirrhosis patients. A once daily dose of the probiotic mixture Austria) and Omnibiotic Hetox (Allergosan, Graz, Austria) were administered to 58 patients with Child’s A cirrhosis. We analyzed the stool microbiome prior, immediately after the intervention, and six months after the intervention. The dysbiosis and disruption in tight junction function was investigated using student t-test and chi-square test. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation. Kaplan-Meier method was used for analysis of survival.

Results: A community of 37 operational taxonomic units (OTUs) was sufficient to pinpoint characteristic features of the microbiome before and after the intervention. Within this predictive community, three OTUs were found to be differentially abundant: Lactobacillus brevis and Lactococcus lactis increased significantly and Enterococcus durans decreased significantly in the probiotic group. Zonulin normalized in 20% of patients in the probiotic group. Predicted metagenome functions (assessed by PICRUSt) and calprotectin did not show any differences during intervention.

Conclusion: In conclusion, a six months intervention with a multispecies probiotic enriched the microbiome of cirrhotic patients with probiotic bacteria. Additionally, the abundance of Enterococcus durans was reduced and the gut barrier was strengthened.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1338 MULTISPECIES PROBIOTIC ENRICHES THE MICROBIOME WITH LACTOBACILLUS AND LACTOCOCCUS AND REDUCES ENTEROCOCCUS ABUNDANCE IN PATIENTS WITH LIVER CIRRHOSIS: RESULTS OF A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

A. Horvath1, M. Durdevic2, B. Leber1, B. Schmerbeck1, F. Rainer1, P. Dosuechel1, E. Krones1, W. Spindelboeck1, F. Durchein1, G. Zollner1, R. Stauber1, P. Fickert1, P. Stiegler1, V. Stadlbauer1

1Department of Gastroenterology and Hepatology, Medical University of Graz, Graz/Austria
2Centre for Medical Research, Medical University of Graz, Graz/Austria
3Department of Transplantation Surgery, Medical University of Graz, Graz/Austria

Contact E-mail Address: angela.horvath@medunigraz.at

Introduction: Cirrhosis is accompanied by significant changes of the intestinal microbiome including the overgrowth of the intestine with potential pathogens that can translocate through a weakened gut barrier and cause severe infections. We hypothesized that probiotic bacteria repress intestinal pathogen growth and strengthen the gut barrier.

Aims & Methods: Therefore, we conducted a randomized, double-blind, placebo-controlled study to test the effects of the multispecies probiotic Ecologic Barrier (Winccove, Amsterdam, The Netherlands)/Omnibiotic Hetox (Allergosan, Graz, Austria) on microbiome composition, predicted metagenome functions, and tight junction function in cirrhosis patients. A once daily dose of the probiotic mixture (1.5*10^10 CFU) or placebo was administered to 58 patients with Child’s A cirrhosis. We analyzed the stool microbiome prior, immediately after the intervention and six months following end of treatment. Hypervariable region 1–2 of the bacterial 16S rDNA was sequenced and predictive communities were identified using Ada Boost Classifier. Functional predictions were analyzed by Phylogenetic Investigations of Communities by Reconstruction of unobserved States (PICRUSt). Zonulin and calprotectin were assessed in stool as markers for gut permeability and intestinal inflammation, respectively.

Results: A community of 37 operational taxonomic units (OTUs) was sufficient to pinpoint characteristic features of the microbiome before and after the intervention. Within this predictive community, three OTUs were found to be differentially abundant: Lactobacillus brevis and Lactococcus lactis increased significantly and Enterococcus durans decreased significantly in the probiotic group. Zonulin normalized in 20% of patients in the probiotic group. Predicted metagenome functions (assessed by PICRUSt) and calprotectin did not show any differences during intervention.

Conclusion: In conclusion, a six months intervention with a multispecies probiotic enriched the microbiome of cirrhotic patients with probiotic bacteria. Additionally, the abundance of Enterococcus durans was reduced and the gut barrier was strengthened.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1339 THE IMPACT OF DIABETES MELLITUS ON SHORT-TERM AND LONG-TERM OUTCOMES AFTER LIVER TRANSPLANTATION

A. Eshraghian1, S. Nikeghbalian2, M.R. Fattahi3, S. Ali Malek-Hosseini7

1Gastroenterology Research Center, Shiraz University of Medical Sciences, Shiraz/Iran
2Transplant Research Center, Shiraz/Iran
3Endoscopy Ward, Namazi Hospital, Fars/Shiraz/Iran

Contact E-mail Address: eshraghiana@yahoo.com

Introduction: Diabetes mellitus (DM) is a growing disease worldwide. Some previous studies have reported negative impact of DM in patients with chronic liver disease.

Aims & Methods: This study aimed to investigate the prevalence of DM in patients with liver cirrhosis and its impact on post-liver transplant short-term and long-term outcomes. In a cross-sectional study patients with liver cirrhosis on liver transplant waiting list who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Clinical and laboratory data of patients were recorded and patients were followed during post-liver transplant period. DM was diagnosed if the patient had fasting plasma glucose (FPG) ≥ 126 mg/dL or random plasma glucose ≥200 mg/dL in 2 different checkings or receiving anti-diabetic medications. The impact of DM on post-transplant outcomes was investigated using student t-test and chi-square test. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation. Kaplan-Meier method was used for analysis of survival.

Results: 1014 patients were included in the study. 259 patients (25.5%) found to have DM. Prevalence of DM was significantly higher among patients with liver cirrhosis due to non-alcoholic steatohepatitis (NASH) (P < 0.001). Portal vein thrombosis (PVT) was significantly more frequent in cirrhotic patients with DM (OR = 1.79; 95% CI: 1.18–2.70; P = 0.005). Mean model for end stage liver disease (MELD) score, body mass index (BMI) and duration of liver disease were not different in patients with and without DM (P > 0.05). Mean albumin level was 3.61 ± 0.59 g/dL in patients without DM compared to 3.59 ± 0.56 g/dL in patients with DM (P < 0.001). Mean serum creatinine level was 1.46 ± 0.95 mg/dL in patients with DM compared to 1.78 ± 1.02 mg/dL in patients with DM (P = 0.001).
Introduction: Cirrhotic patients very often need to be hospitalized and it is known that they have a higher mortality rate. Aims & Methods: The aim of the study was to assess the factors associated with mortality among cirrhotic patients and to create a new score for predicting mortality. The study was retrospective, and we included all hospitalized patients with cirrhosis admitted to our hospital over a period of 7 years. We divided them into two cohorts, an initial group, which was analysed; and a control group, in which we validated the score. We performed univariate and multivariate analysis in order to determine a prediction model for mortality.

Results: A total of 1163 cirrhotic patients were included. In-hospital mortality rate was 10%. The initial cohort included 899 patients. Regarding cirrhosis etiology: 384/899 (42%) had hepatitis C, 158/899 (17.5%) had hepatitis B, 293/899 (32.5%) were alcoholic, 6/899 (0.6%) were autoimmune, 7/899 (0.7%) were cardiac, 13/899 (1.4%) were premalignant or early-stage cirrhosis and in 5% of cases the etiology was unknown. In univariate analysis, hypernatremia (p < 0.0001), hyperpotasemia (p < 0.0001), hypoalbuminemia (p < 0.0001), high values of bilirubin (p < 0.0001), high values of creatinine (p < 0.0001) were strongly associated with in hospital mortality. In multivariate analysis, the model including albumin, sodium, potassium, creatinine and bilirubin (all p-values < 0.05) had an AUROC = 0.78, CI (0.75–0.81), p < 0.0001. Using this factors as predictors, by multiple regression analysis we obtained in the initial group the following score: ABCPS score = 0.04 + 0.03*Albumin + 0.05 + 0.02*Creatinine + 0.04 + 0.04*Bilirubin - 0.05 + 0.28*Potassium + 0.04*0.07*Sodium.

Conclusion: Prevention and prompt treatment of kidney injury, hypernatremia, hyperpotasemia, can improve survival. ABCPS score can be an useful score to rule out patients with high mortality rate.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb S.A. Popescu: I hereby confirm that I have received financial support (travel grants, speaker fee) from:Philips, General Electric, Abbvie, AstraZeneca, Medtronic, I. Sporea: I hereby confirm that I have received financial support (travel grant or speaker fee) from Philips, Abbvie, Zentiva All other authors have declared no conflicts of interest.


References

Disclosure of Interest: All authors have declared no conflicts of interest.

P1344 LONGITUDINAL MONITORING OF LIVER STIFFNESS BY ACOUSTIC RADIATION FORCE IMPULSE IMAGING IN PATIENTS WITH CHRONIC HEPATITIS B RECEIVING ENTECAVIR

S. Wu,1 H. Ding,1 L. Liu,2 N. Xu,1 W. Jiang1
1Gastroenterology & Hepatology, Zhongshan Hospital, Fudan University, Shanghai/China
2Ultrasound, Zhongshan Hospital, Fudan University, Shanghai/China

Contact E-mail Address: wu.shengdi@zs-hospital.sh.cn

Introduction: Acoustic radiation force impulse (ARFI) imaging measures liver stiffness (LS), which significantly correlates with the stage of liver fibrosis in treatment-naïve patients with chronic hepatitis B (CHB). So far, the use of ARFI elastography to monitor change in liver fibrosis has not been properly evaluated during antiviral therapy in CHB patients.

Aims & Methods: We aimed to prospectively assess the clinical usefulness of ARFI during long-term antiviral therapy in CHB patients. Seventy-one CHB patients were consecutively recruited and received antiviral therapy with entecavir. Paired liver biopsies were performed in 27 patients at baseline and week 78 of entecavir therapy. LS was assessed by ARFI at multiple follow-up sessions.

Results: LS significantly decreased with treatment and continued to decrease after normalization of alanine aminotransaminase. Overall, 97.2% patients achieved improvement of LS, whereas 19.7% patients had more than 30% reduction in LS values between baseline and week 104. Multivariate linear regression analysis showed that the degree of LS reduction significantly correlated with the baseline levels of LS value, platelet, and cholinesterase. In the 27 patients who received paired liver biopsies, LS significantly correlated with stage of fibrosis and inflammatory grade at baseline. LS values decreased more significantly in patients with fibrosis regression than those with static histological fibrosis. Changes in LS value (change threshold = 15%) was significantly correlated with the changes in histological fibrosis staging (r = 0.63, P < 0.001).

Conclusion: In CHB patients, LS assessed by ARFI was significantly reduced with the changes in histological fibrosis staging (r = 0.73, P < 0.001). Multivariate linear regression analysis achieved improvement of LS, whereas 19.7% patients had more than 30% reduction in LS values between baseline and week 104. Multivariate linear regression analysis showed that the degree of LS reduction significantly correlated with the baseline levels of LS value, platelet, and cholinesterase. In the 27 patients who received paired liver biopsies, LS significantly correlated with stage of fibrosis and inflammatory grade at baseline. LS values decreased more significantly in patients with fibrosis regression than those with static histological fibrosis. Changes in LS value (change threshold = 15%) was significantly correlated with the changes in histological fibrosis staging (r = 0.63, P < 0.001).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1345 CHRONIC HEPATITIS B VIRUS INACTIVE CARRIERS—IMPACT OF METABOLIC DISORDERS IN STEATOSIS ASSESSED BY FIBROSCAN

S. Xavier,1 S. Monteiro,2 C. Arieira2, J. Magalhães2, C. Marinho1, J. Cotter4
1Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga/Portugal
2Gastroenterology Department, Hospital da Senhora da Oliveira, Guimaraes, Guimaraes/Portugal
3School Of Medicine, University Of Minho, Life and Health Sciences Research Institute, Braga/Guimaraes/Portugal
4Ft Government Associate Laboratory, 4 ICVS/3Bs, Braga/Guimaraes/Portugal

Contact E-mail Address: smaxavier@gmail.com

Introduction: In chronic hepatitis with Hepatitis B virus (HBV) hepatic steatosis is mainly attributable to metabolic risk factors, rather than virologic factors. We aimed to assess the presence of hepatic steatosis in chronic HBV inactive carriers using non-invasive methods, namely controlled attenuation parameter (CAP) by FibroScan. We intended to identify the presence of hepatic steatosis and their impact in the values of fibrosis determined with fibroscan.

Aims & Methods: Fibroscan was performed in chronic HBV inactive carriers, with assessment of hepatic transient elastography and CAP, with simultaneous assessment of anthropometric, clinical and analytical parameters. CAP values of 248.268 and 280.db/m determined cut-offs of steatosis grade I, II, and III, respectively.

Results: Included 49 patients with a mean transient elastography of 5.1 ± 1.5 Kpa and a mean CAP of 248.9 ± 49.3 db/m. A significant association was found between the value of CAP and the presence of steatosis in the last ultrasound (248.9 ± 49.3 db/m vs p < 0.01), the presence of elevated triglycerides (239.9 ± 49.3 db/m vs 284.1 ± 28.1 db/m, p = 0.01) and obesity (240.0 ± 47.6 db/m vs 290.7 ± 46.6 db/m, p = 0.01). When comparing patients with CAP > 268.9 db/m, patients with higher CAP values more frequently were overweight (BMI 25.2 kg/m2) (45.8% vs 84.9%, p < 0.01) and had metabolic syndrome (MS) (12.5% vs 40%, p < 0.03), and also presented with higher values of BMI (24.6 ± 2.6 kg/m2 vs 292.6 ± 4.6 kg/m2, p < 0.02), waist circumference (85.0 ± 9.0 cm vs 97.9 ± 11.3 cm, p < 0.01) and triglycerides (95.6 ± 31.4 mg/dl vs 62.9 mg/dL, p = 0.01) and lower values of HDL cholesterol (58.9 ± 14.3 mg/dL vs 50.4 ± 14.4 mg/dL, p < 0.01). A significant association was also found between the value of elastography and female gender (females 4.6 ± 1.3KPa vs males 5.8 ± 1.5KPa, p < 0.01), elevated triglycerides (4.9 ± 1.5KPa vs 6.0 ± 1.1KPa, p = 0.03) and obesity (4.9 ± 1.4KPa vs 6.5 ± 1.1KPa, p < 0.01).

Conclusion: Different components of MS seem to contribute both to fibrosis and steatosis in chronic HBV inactive carriers. In this subset of patients, the interpretation of fibrosis values assessed by fibroscan should be made with caution since it may be influenced by metabolic parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1346 ANTIMICROBIAL EFFICACY OF UNANI HERBS (SAUSUREA LAPPAPA AND ARTEMISIA ABSINTHIUM) IN CHRONIC HEPATITIS B S. Amsari1, M. A. Siddiqui1, S. Malhotra2, M. Maaz2
1Department Of Moulajai (medicine), School Of Unani Medicine, Jamia Hamdard, New Delhi, India, New Delhi/India
2Department Of Gastroenterology, Banra Hospital and Research Centre, New Delhi/India

Contact E-mail Address: drshabnamansari.md@gmail.com

Introduction: Chronic hepatitis B (CHB) is a serious health concern in terms of its high prevalence, as well as restricted and costly health care resources in India.1 Unani herbal drugs such as root of Saussurea lappa and whole plant of Artemisia absinthium have been used successfully in the treatment of hepatitis in Unani Medicine for centuries. These drugs have exhibited potential anti-hepatitis B, hepatoprotective, immunomodulatory, anti-inflammatory and anti-oxidant activities in various animal models.2 With this background, present prospective clinical trial was tried to be designed according to the guidelines of American association for the study of liver diseases (AASLD) and implemented after Institutional ethical clearance.

Aims & Methods: Objective was to evaluate the antiviral effect of herbal drugs, Saussurea lappa and Artemisia absinthium against hepatitis B virus (HBV) in the management of CHB and to collect data to warrant further clinical trials. In an open prospective single-arm study, we assigned 30 patients with HBcAg-negative or HBcAg-positive CHB to receive decocation of root of Saussurea lappa, 15 mL (containing approx. 1 g of dried aquoues extract) in the morning and decoction of Artemisia absinthium, 15 mL (containing approx. 1 g of dried aquoues extract) in the evening once daily empty stomach for 12 weeks. Physicochemical standardization and TLC and HPTLC fingerprinting of decoctions were also done. Test drug was prepared for its efficacy (median (<I>SA</I>BAH) and HBcAg (CLA tech.), a plasma HBV DNA level (RT PCR) of less than 200/IU/mL at week 12 (after treatment). Normalization of alanine aminotransferase levels [ALT (enzymatic essay)] without any significant adverse effects (clinical para- meters, haemogram, kidney function test, and blood sugar fasting and post dinner) at week 6 (mid-treatment) and 12 (after treatment) would be suggestive of resolution of inflammation of liver.

Results: 1 HBcAg loss was observed in 5 (35.71%) patients in HBcAg-inactive group (n = 14) (p < 0.05) and 4 (25%) patients in HBcAg-negative group (n = 16) at week 12 (after treatment) (p = 0.10). These 9 HBcAg negative patients were further assessed on 26th week of treatment, all 9 maintained their negative HBcAg status. 2 HBcAg loss was observed in 71.42% patients at week 12

Comorbidity Adjusted Odds Ratio 95% CI p-value

Malnutrition 1.86 0.89–3.88 0.10
HTN 0.64 0.34–1.18 0.16
Anemia 0.65 0.36–1.11 0.12
CKD 1.66 0.79–3.54 0.18
Diabetes 1.04 0.55–1.94 0.91
CHF 3.92 1.77–8.71 <0.001
Coagulopathy 1.75 1.03–2.96 0.04
Alcoholism 0.48 0.25–0.95 0.04
HCV 0.86 0.27–2.72 0.80
Aims & Methods: We aimed to compare the efficacy of peg-IFNα-2a add-on therapy in those CHB patients remains unclear. The peg-IFNα-2a add-on therapy increased loss of HBsAg in HBeAg-negative patients (2.96 Log10 IU/ml), significantly higher than in NA monotherapy group at week 24 (0.87 Log10 IU/ml). There was no significant difference in age, gender, body mass index (BMI), HBsAg levels at baseline. At week 24, HBsAg levels in peg-IFNα-2a add-on therapy group was significantly lower than in HBeAg-negative CHB patients aged older than 16 from the First Affiliated Hospital of Sun Yat-sen university in China. All had received NA monotherapy for 3 years with sustained undetectable plasma HBV DNA. The exclusion criteria included: cirrhosis or other chronic liver diseases, previous immunological therapy, pregnancy and breastfeeding, contraindications for peg-IFNα-2a, or other serious diseases. The eligible patients were assigned to receive peg-IFNα-2a add-on therapy for 48-72 weeks or to continue to receive NA monotherapy for 96 weeks. HBV DNA levels, HBV serologic indicators, liver function, renal function, thyroid function, blood cells count and imaging examination were assessed. The primary end point was HBsAg loss from baseline to week 96.

Results: 71 patients were enrolled (22 to peg-IFNα-2a add-on therapy group and 49 to NA monotherapy group), of whom 9 in peg-IFNα-2a add-on therapy group and 25 in NA monotherapy group completed more than 24 weeks of follow-up, the remaining patients have not yet reached 24 weeks of follow-up. There was no significant difference in age, gender, body mass index (BMI), HBsAg levels, alanine aminotransferase (ALT), or aspartate aminotransferase (AST) between the two groups at baseline. At week 24, HBsAg levels in peg-IFNα-2a add-on therapy group was significantly lower than the baseline (2.96 ± 0.14 vs 2.90 ± 0.82 Log10 IU/ml, p = 0.009), but there was no obvious change in NA monotherapy group (3.43 ± 0.46 vs 3.44 ± 0.44 Log10 IU/ml, p = 0.843). The HBsAg loss in peg-IFNα-2a add-on therapy group was significantly higher than in NA monotherapy group at week 24 (0.57 ± 0.26 vs -0.01 ± 0.10 Log10 IU/ml, p = 0.008). Among those patients who completed 96 weeks of follow-up, two patients in peg-IFNα-2a add-on therapy group (22.2%) achieved HBsAg seroconversion, but none in NA monotherapy group (0%). Conclusion: The peg-IFNα-2a add-on therapy increased loss of HBsAg in HBeAg negative treatment-experienced CHB patients as compared to NA monotherapy. Disclosure of Interest: All authors have declared no conflicts of interest.

P1347 EFFICACY OFPEGYLATED INTERFERON ALFA-2A ADD-ON THERAPY VERSUS NUCLEOSIDE ANALOGUE MONOTHERAPY IN TREATMENT-EXPERIENCED CHRONIC HEPATITIS B PATIENTS: A RANDOMISED, CONTROLLED, OPEN-LABEL TRIAL

X. Hu1, J. Ye2, W. Yanqin3, R. Li1, C. Shao4, Z. Bihu4
1Gastroenterology, the First Affiliated Hospital of Sun Yat-sen university, Guangzhou/China

Contact E-mail Address: 1446989090@qq.com

Introduction: HBsAg surface antigen (HBsAg) seroconversion is rarely achieved in chronic hepatitis B (CHB) patients during nucleoside analogue (NA) monotherapy. The efficacy of pegylated interferon alfa-2a (peg-IFNα-2a) add-on therapy in those CHB patients remains unclear.

Aims & Methods: We aimed to compare the efficacy of peg-IFNα-2a add-on therapy to NA monotherapy in treatment-experienced CHB patients. We enrolled hepatitis B e antigen (HBeAg)-negative CHB patients aged older than 16 from the First Affiliated Hospital of Sun Yat-sen university in China. All had received NA monotherapy for 3 years with sustained undetectable plasma HBV DNA. The exclusion criteria included: cirrhosis or other chronic liver diseases, previous immunological therapy, pregnancy and breastfeeding, contraindications for peg-IFNα-2a, or other serious diseases. The eligible patients were assigned to receive peg-IFNα-2a add-on therapy for 48-72 weeks or to continue to receive NA monotherapy for 96 weeks. HBV DNA levels, HBV serologic indicators, liver function, renal function, thyroid function, blood cells count and imaging examination were assessed. The primary end point was HBsAg loss from baseline to week 96.

Results: 71 patients were enrolled (22 to peg-IFNα-2a add-on therapy group and 49 to NA monotherapy group), of whom 9 in peg-IFNα-2a add-on therapy group and 25 in NA monotherapy group completed more than 24 weeks of follow-up, the remaining patients have not yet reached 24 weeks of follow-up. There was no significant difference in age, gender, body mass index (BMI), HBsAg levels, alanine aminotransferase (ALT), or aspartate aminotransferase (AST) between the two groups at baseline. At week 24, HBsAg levels in peg-IFNα-2a add-on therapy group was significantly lower than the baseline (2.96 ± 0.14 vs 2.90 ± 0.82 Log10 IU/ml, p = 0.009), but there was no obvious change in NA monotherapy group (3.43 ± 0.46 vs 3.44 ± 0.44 Log10 IU/ml, p = 0.843). The HBsAg loss in peg-IFNα-2a add-on therapy group was significantly higher than in NA monotherapy group at week 24 (0.57 ± 0.26 vs -0.01 ± 0.10 Log10 IU/ml, p = 0.008). Among those patients who completed 96 weeks of follow-up, two patients in peg-IFNα-2a add-on therapy group (22.2%) achieved HBsAg seroconversion, but none in NA monotherapy group (0%). Conclusion: The peg-IFNα-2a add-on therapy increased loss of HBsAg in HBeAg negative treatment-experienced CHB patients as compared to NA monotherapy. Disclosure of Interest: All authors have declared no conflicts of interest.
P1350  HEPATITIS C IN LEBANON: BURDEN OF THE DISEASE AND VALUE OF A COMPREHENSIVE SCREENING AND TREATMENT A. Abou Rachid4, S. Al-Kheir1, J. Saba1, S. Assaf2, G. Kassem2, S.Y. Gonzales3, O. Ethgen4

Aims & Methods: A multi-cohort, health-state-transition model was developed to project the number of HCV patients achieving a sustained virologic response 12 weeks after treatment (SVR12) or progressing to compensated cirrhosis (CC), and liver-related death (LrD) from 2016 to 2036. Epidemiology and mortality data were extracted from the Ministry of Health bulletin while costs were collected from insurance claims. The proportion of patients screened for HCV was projected to increase to 60%/85%/99% (low/medium/high screening scenarios) in 2036, with a new cohort of patients being diagnosed each year. SVR12 rates were estimated from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for differences in prevalence and screening rates.

Results: Low, medium, and high HCV screening scenarios showed that 3838, 5665 and 7669 individuals would be diagnosed with HCV infection from 2016 to 2036, 40% aged 18–39 and 60% aged 40–80. In the absence of treatment, the projected number of CC, DCC, HCC and LrD in 2036 was 899, 147, 131 and 150 respectively. Although DAAs for F0–F4 increase the cost of HCV treatment for every LY gained in SVR12 for patients aged 18–39 and 168 E for patients aged 40–80, the overall economic burden of these liver complications would reach 150,000 €. Projections were substantially greater: 2828 CC, 736 DCC, 668 HCC and 958 LrD.

Conclusion: An enhanced screening policy coupled with broader access to DAAs will diminish the future clinical and economic burden of HCV in the Lebanese population and provide the greatest health benefits per amount invested, among middle-aged and elder adults with a big difference in additional costs between the 2 groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


Contact E-mail Address: lilipcarvalho@gmail.com

Introduction: Hepatitis C virus (HCV) infection in renal transplant patients pre-disposes to graft failure and progression of renal disease, increasing mortality. Due to immunosuppression and oscillating glomerular filtration rate (eGFR) in the evolution of virological response and clinical outcomes (kidney function, anemia and other adverse effects). HCV-infected and renal transplanted patients treated with DAA between April 2015 and February 2017 were analyzed.

Results: Including 19 patients, 10 males (53%) and 9 females (47%) with a mean age of 57 years (40–70 years). The majority of these patients (89%) were treatment-naive. Genotype distribution was the following: genotype 1–74% (14/19), genotype 3–16% (3/19) and genotype 4–10% (2/19). Distribution according to fibrosis stages was as follows: F0–2 63% (12/19), F3–4 3% (1/9) and F4–16% (3/19). Thirteen patients (85%) were treated with sofosbuvir (200–1000 mg) and ribavirin suspension at week 4 of treatment. There were no other serious adverse reactions. The eGFR (CKD EPI) did not change significantly, with pre and posttreatment mean values of 66.4 and 65.4 ml/min/1.73m², respectively. There were 2 cases of severe anemia, one that resulted in ADA suspension at week 21 and the other one ribavirin suspension at week 6, and 19% in posttreatment renal function. HCV-infected and renal transplanted patients treated with DAA between April 2015 and February 2017 were analyzed.

Conclusion: In our sample of HCV-infected with kidney transplant, DAA are well tolerated, as well and better tolerated, even in the more advanced stages of fibrosis, maintaining the integrity and viability of the graft, without interfering with the efficacy of immunosuppressant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1353  WHAT HAPPENED WITH LIVER STIFFNESS VALUES ASSESSED BY MEANS OF TRANSIENT ELASTOGRAPHY IN PATIENTS WITH HCV LIVER CIRRHOSIS AFTER DAA TREATMENT I. Sporea1, R. Lupusorú1, S.A. Popescu1, A. Lazar1, R. Mare1, L. Gheorghe1, S. Iacob1, S. Rîrî1

1Department Of Gastroenterology And Hepatology, University of Medicine and Pharmacy Victor Babes Timisoara, Timisoara/Romania

Contact E-mail Address: isporeaiumt.ro

Introduction: Liver stiffness (LS) measurements by Transient Elastography (TE) has been widely accepted as a tool for fibrosis assessment.

Aims & Methods: The aim of this study was to assess LS dynamics in a group of patients with HCV liver cirrhosis after DAA treatment. This bicentric clinical

Contact E-mail Address: abourachedantoine@gmail.com

Introduction: As few reliable data on the burden of hepatitis C virus (HCV) are available from the Middle East, we analyzed HCV burden in the Lebanese population and the value of comprehensive screening and treatment at different age groups and fibrosis stages. We analyzed HCV burden in the Lebanese population and the value of comprehensive screening and treatment at different age groups and fibrosis stages. Although DAAs for F0–F4 increase the cost of HCV treatment for every LY gained in SVR12 for patients aged 18–39 and 168 E for patients aged 40–80, the overall economic burden of these liver complications would reach 150,000 €. Projections were substantially greater: 2828 CC, 736 DCC, 668 HCC and 958 LrD.

Conclusion: An enhanced screening policy coupled with broader access to DAAs will diminish the future clinical and economic burden of HCV in the Lebanese population and provide the greatest health benefits per amount invested, among middle-aged and elder adults with a big difference in additional costs between the 2 groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
trial included 256 patients with compensated HCV cirrhosis (all genotype 1b), who received DAA for 12 weeks. All patients were evaluated by means of TE at the beginning and at the end of treatment (EOT), and one subgroup (180 patients) also 12 weeks after EOT, all of them with sustained viral response (SVR 12), and another subgroup (55 patients) also at 24 weeks after EOT (SVR 24). Liver stiffness measurements (LSM) were defined as median value of 10 valid LSM, with IQR < 30% and SR ≥ 60%. Both M and XL probes were used. For diagnosing cirrhosis we used a cut-off value of 12 kPa as proposed by the Tsochatzis meta-analysis. We considered a decrease or increase of more than 10% in LSM as being significant.

Results: Of 276 subjects, reliable measurements were obtained in 92.7%, so the final analysis included 256 patients. The mean LS values decreased significantly after DAA: 25.6±11.7 kPa vs. 22.3±12.2 kPa (p=0.009). Most patients (59.7% [152/256]) presented more than 10% in LS values decreased (39 [29/256]) had stable LS values, while in 17.3% (45/256) cases, the LS values increased. In the subgroup of 180 patients where LSM were also performed 12 weeks after EOT (SVR 12), the mean LS values were significantly lower than at EOT as compared to baseline: 20.3±10.8 kPa vs. 25.5±11.4 kPa (p=0.001) and also as compared to EOT: 20.3±10.8 kPa vs. 22.8±12.2 kPa, p=0.04). In the subgroup of 55 patients where LSM were also performed 24 weeks after EOT (SVR 24), the mean LS values were significantly lower at SVR 12 and SVR 24 as compared to EOT (18.7±8.2 kPa vs. 21.6±7.7 kPa, p=0.01 and 18.3±6.6 kPa vs. 21.6±7.7 kPa, p=0.001).

Conclusion: In our group mean liver stiffness values evaluated by TE significantly decreased after antiviral treatment at SVR 12 and SVR 24, as compared to EOT. Overall, in our study almost 60% of patients had EOT liver stiffness values lower than at baseline, at SVR 12 almost 75% of patients had liver stiffness values lower than at baseline and at SVR 24 almost 77% of patients had liver stiffness values lower than at baseline.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb. S. Tantau: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva, S. R. Siri: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva. All other authors have declared no conflicts of interest.

References

P1354 ACHIEVING SVR AFTER DAA THERAPY FOR HCV DECREASES THE ACCURACY OF BAVENO VI CLASSIFICATION OF HIGH-RISK VARIANTS IN CIRRHOTIC PATIENTS
1 Hepatology, Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Cluj-Napoca/Romania
2 Hepatology, Cluj-Napoca University of Medicine and Pharmacy, Cluj-Napoca/Romania
3 Regional Institute of Medical Imaging, Cluj-Napoca/Romania
4 Regional Institute of Gastroenterology and Hepatology Prof. Dr. Octavian Fodor, Cluj Napoca Romania

Contact E-mail Address: rotaru.i.magda@gmail.com

Introduction: Baveno VI criteria suggest that cirrhotic patients with platelet count (PLT) > 150,000μl and liver stiffness measure values (LSM) < 20kPa bare a low risk of liver decompensation and end-stage cirrhosis. Liver fibrosis for patients with HCV infection showed the effectiveness of anti-viral therapy. However, the long-term impact on cirrhosis and decompensation in HBsAg positive patients is still unclear.

Aims & Methods: Therefore, the aim of the study was to assess the influence of DAA therapy on the accuracy of the Baveno VI criteria for cirrhotic HCV patients. All consecutive patients with compensated HCV liver cirrhosis approved for DAA treatment in our center who gave their informed consent were included. All patients were screened for EV before starting the therapy by esogastroendoscopy. LSM (FibroScan®) and usual biological parameters were evaluated at baseline and when assessing SVR 12.

Results: 50 patients were included (95% men, 5% women) between December 2015 and July 2016. All patients achieved SVR (100%). At base line, 17/50 patients had EV. After completing DAA therapy, liver enzymes [GOT (p < 0.001), GPT (p < 0.0001)], GGT (p < 0.003) and LSM (< 0.0001) significantly decreased, while albumin (p = 0.09) and PLT (p = 0.39) increased. We found a moderate correlation between GOT and LSM both at baseline (r = 0.31; p = 0.001) and at RV12 (r = 0.45; p = 0.004), but the amplitude of the decrease appears not to be correlated [r (ΔGOT vs. ΔLSM) = 0.149; p = 0.3]. At baseline, according to Baveno VI criteria, 29 patients were classified at low risk of having EV (accuracy 68%, Se 69.7%, Sp 64.7%, PPV 79.31%, NPV 52.38%). At SVR12, 10 additional patients entered this class, but the accuracy (60%) decreased.

Conclusion: DAA therapy induces a significant decrease in liver inflammation and liver stiffness and also a non-significant increase of platelets count. These changes induce a decrease of the accuracy of classification of patients with low risk of having EV (according to Baveno VI criteria), therefore is not advisable to use Baveno VI criteria as surrogate for endoscopy screening for esophageal varices in cirrhotic patients compensated HCV liver cirrhosis who obtained SVR.

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P1356   HLA-A02, HLA-A03 AND HLA-B15: A NEW RISK FOR HEPATIC STEATOSIS IN EGYPtIAN CHRONIC HEPATITIS C PATIENTS

R. Farag1, M. M. Amr2, H. ElAtt2, A. F. Amin3, Y. A. Mossad4
1. Department of Medicine, Mansoura University, Mansoura, Egypt
2. Endemic Medicine And Hepatology, Mansoura University, Mansoura/Egypt
3. Mansoura Faculty of Medicine, Mansoura/Egypt

Contact E-mail Address: raghda.farag@yahoo.com

Introduction: HCV interferes with the host lipid metabolism leading to insulin resistance and hepatic steatosis. Although it is usually mild in genotype 4, mild-to-moderate simple steatosis is the potential to progress to fibrosis, cirrhosis and subsequent hepatocellular carcinoma. Many heritable host factors with observed inter-ethnic variation in the prevalence of steatosis are documented, and in many cases hepatic steatosis may be detected in absence of all these risk factors; so a role for host genetic factors in development of hepatic steatosis in chronic HCV patients may be suggested.

Aims & Methods: In this study, we aim to evaluate the association of HLA class A-B alleles and presence of steatosis in chronic HCV genotype 4 infected patients. The study included two hundred unrelated non diabetic non obese chronic HCV patients with normal lipid profile, 98 of them had biopsy proven steatosis. Serological testing of HLA class I antigens (HLA-A, and HLA-B alleles) were performed with a standard complement-dependent micro-lumiochromato toxicity

Results: The frequency of A02, A03, B15 and B17 alleles were significantly higher in chronic HCV patients with steatosis (OR = 1.77, 2.64, 4.44, 5.68) and 95% CI = 0.96–3.27, 1.02–7.04, 0.84–31.17, 1.12–38.65 with P = 0.034, 0.022, 0.044, 0.015 respectively. On the other hand, the frequency of A01 and B12 alleles were significantly higher in patients without steatosis (OR = 0.56, 0.41) and 95% CI = 0.30–1.05, 0.20–0.83 and P = 0.015 and 0.005. On logistic regression analysis, patients who carry HLA-A02, A03 and HLA-B15 alleles may have 2,2, 3,9 and 11,18 fold risk to have hepatic steatosis (B coefficient: 0.79, 1.37, 2.41) 95% CI = 1.09–4.42, 1.04–11.05, 2.15–58.13; P = 0.027, 0.009, 0.004) while carrying HLA-A01 alleles may be protected from having HCV associated hepatic steatosis; (OR = 0.34,95% CI = 0.16–0.72; P = 0.005) with constant >47 and overall accuracy of 69%. In addition, patients who have moderate activity index in liver histopathology have 5.9 risk to have hepatic steatosis (OR = 5.92, 95% CI = 2.92–11.99, P<0.001).

Conclusion: In chronic HCV genotype 4 patients, carrying HLA-A02, HLA-A03 and HLA-B15 alleles may have a risk for presence of hepatic steatosis while presence of HLA-A01 alleles may have a protective role.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1358   DE NOVO HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CIRRHOSIS AFTER TREATMENT WITH DIRECT ANTIVIRAL AGENTS

P. Ruiz1, L. Deiss Pascual2, L. Buendía1, I. Erdozain1, I. Esain1, S. Blanco1, A. Baranda2, F. Menendez1
1. Hospital Universitario de Basurto, Bilbao/Spain
2. Gastroenterology And Hepatology, Hospital Universitario de Basurto, Bilbao/Spain

Contact E-mail Address: laura.deisspascual@osakidetza.net

Introduction: The risk of developing novo hepatocellular carcinoma (HCC) persists after reaching sustained virological response (SVR) in patients infected with hepatitis virus C. It has been suggested that risk is increased in patients treated with the new direct antiviral agents (DAA). In this prospective study we present our results of incidence and prevalence of novo HCC in cirrhotic patients treated with DAA and SVR, and also, the risk factors involved in its development.

Aims & Methods: We included all cirrhotic patients due to HCV infection without previous HCC who reached SVR after DAA treatment in our hospital from February 2014 until December 2016 (n = 197, median of follow-up of 17 months). We evaluated with chi square test the following qualitative variables: age, Child-Pugh stage, alcohol consumption pre-treatment, tobacco consumption pre-treatment, diabetes mellitus (DM) pre-treatment, genotype, radiological and endoscopic portal hypertension features pre-treatment. The quantitative variables were evaluated with student t test; age, no. of platelets pre-treatment, fibrosis score pre-treatment.

Results: During follow-up 11 patients were diagnosed of HCC (5.6% prevalence, 3.9% annual incidence). Among all variables evaluated being in a Child- Pugh B stage vs. an A stage (p = 0.007), pre-treatment DM (p = 0.002) and presence of radiological portal hypertension (p = 0.001) were associated with developing novo HCC. Among the quantitative variables, we evidenced statistically significant differences in the mean value of platelets (p = 0.015).

Conclusion: In our group of patients, a worse hepatic function evaluated with the Child-Pugh classification and indirect markers of portal hypertension (platelets and radiological features) and also DM are associated statistically significant with the development of novo HCC. The incidence (>1.5%) of novo HCC justifies the screening of HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
more patients above Clavien IIa were in the observation group, there was no statistically significant difference in the peroperative mortality between the two groups.

Conclusions: Preoperative TACE could effectively reduce complications caused by immune reaction (P = 0.048). In terms of postoperative indexes of liver function, TBIL, ALT, AST all had a transient rise during the first 3 days after liver transplantation, but recovered gradually over time. There’s no remarkable difference in the liver function recovery level between two groups (P = 0.495; P = 0.141; P = 0.101).

Conclusion: Preoperative TACE won’t affect liver function recovery and perioperative safety after liver transplantation. For some patients, it could also reduce complications caused by immune reaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P1361 IMPORTANCE OF INTERFERON-GAMMA RELEASE ASSAYS IN EVALUATING CANDIDATES FOR LIVER TRANSPLANTATION IN A COUNTRY ENDEMIC FOR TUBERCULOSIS**

M. C. Lita1, C. Ester1, S. Iacob2, C. Pietraeapu2, R. Cerban2, C. Gheorghe2, L.S. Gheorghe2
1Gastroenterology and Hepatology, Fundeni Clinical Institute, Bucharest/Romania
2Fundeni Clinical Institute, Bucharest/Romania
31st Dept. Of Gastroenterology & Endoscopy, PetCenter of Gastroenterology and Hepatology, Bucharest/Romania

Contact E-mail Address: cerbanrazvan@yahoo.com

Introduction: Romania has the highest incidence of tuberculosis (TB) in the European Union, representing one quarter of the European TB burden. According to clinical practice guidelines for liver transplantation (LT), the second level of screening for infections consists of screening for Mycobacterium tuberculosis, including history of TB, PPD, Interferon-gamma release assays. Aims and Methods: The aim was to assess the importance of Quantiferon TB Gold test in evaluating patients included on the wait list for LT in Romanian liver transplant centres. The study was a single-center retrospective cohort study (the single center for LT) that included 264 patients admitted on the wait list for LT from January 1, 2014 to November 18, 2016. All patients underwent mandatory screening for Mycobacterium tuberculosis, either using Quantiferon TB Gold test or skin testing using purified protein derivative (PPD). The variables analyzed using Minitab 17 were: age, gender, etiology of liver disease, biochemical test, MELD score.

Results: From a total of 264 patients with liver diseases included on the wait list, 60.6% were males, the average age at diagnosiswas 47.78 ± 9.92 years. The etiology of liver cirrhosis was HCV infection in 31.43%, HBV and HBV-HDV coinfection in 45.06%, and alcoholic liver cirrhosis in 18.93%; 24.62% of patients have been diagnosed with superimposed hepatocellular carcinoma. Eighty three patients (31.43%) had positive results for Quantiferon test, 150 patients (56.81%) were negative and 17 patients (6.43%) had indeterminate results. Only 14 patients (5.3%) were skin tested using PPD, 2 (0.75%) of them with positive results. Comparing the subgroups, positivity Quantiferon test was associated with HCV etiology (p value = 0.049) and lower lymphocyte counts, but did not achieve statistical significance (p = 0.187). Patients with indeterminate Quantiferon associated hyperbilirubinemia (p = 0.044), hypoalbuminemia (p = 0.032) and a higher MELD score (p = 0.018). An assessment by a multidisciplinary team that included a pneumologist, 38.65% of patients were diagnosed with latent TB. Isoniazid chemoprophylaxis along with pyridoxine was postponed after LT, in order to prevent further hepatic dysfunction. 48.5% of patients underwent LT, followed by TB prophylaxis and no cases of TB reactivation have been reported during a follow-up period of 14 months.

Conclusion: Patients transplanted for HCV-related liver cirrhosis should benefit from a careful follow-up on the WL and prompt TB prophylaxis after LT in order to prevent further hepatic dysfunction caused by TB reactivation. Delaying TB prophylaxis after LT in order to avoid liver toxicity of anti-bacillary drugs was not associated with TB reactivation.

Disclosure of Interest: All authors have declared no conflicts of interest.
MISMATCH: SINGLE CENTRE EXPERIENCE
SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR

Introduction:
Primary sclerosing cholangitis (PSC) is associated with an increased risk of cholangiocarcinoma, colorectal cancer (CRC) and gallbladder cancer. Orthotopic liver transplantation (OLT) patients are at increased risk of developing de novo malignancies, however limited and conflicting data exists regarding cancer risk post OLT for PSC.

Aims & Methods:
To examine all recorded malignancies over 2 decades in OLT PSC pts and compare to our non-transplanted PSC cohort. To analyse factors associated with development of malignancies post OLT. We retrospectively studied PSC patients attending the Irish National Liver Unit (INLU) and the Centre for Colorectal Disease (CCD) at St. Vincent’s University Hospital from 1/1/1994 to 31/12/2011. We integrated this database with the National Cancer Registry in Ireland. This enabled accurate determination of the no. of malignancies recorded in the PSC cohort. Analyzed data included age of recipient at OLT, gender, primary OLT indication, immunosuppressive regime, de novo malignancy post OLT, time from OLT to diagnosis of malignancy or death. Statistical analysis was primarily descriptive. Cox Proportional Hazard Model was used to analyse factors associated with mortality in the PSC OLT cohort.

Results:
107 of 173 patients had undergone transplant for PSC. 27/107 pts were transplanted for cholangiocarcinoma. 12 post-transplant de novo cancers and 12 BCC/SCC carcinomas were found in 107 patients during 737.8 person years of follow-up. Median time to cancer diagnosis post OLT was 5 years (IQR 2.8–5.9). Recurrence of PSC was observed in 21 patients (19.6%). Post-transplant lymphoproliferative disease (PTLD) remains a major complication after OLT. Recent studies have reported rates of 1–3% in adult OLT pts. 5 pts were diagnosed with PTLD. Lymphoma/lymphoproliferative disease (LPLD) has been reported to be 30 times higher than previously reported. The incidence of all malignancies was compared with those obtained by liver biopsy. The mean elastography score showed an accuracy of 79.7% in predicting histological fibrosis but not steatosis or inflammation. Liver transient elastography represents a non-invasive and valid tool for the diagnosis of liver fibrosis.

Conclusion:
These findings indicate national cancer figures in our PSC OLT cohort. The rate of cancer is more than three times higher in this population than the general population. The rates of PTLD are >30 times higher than those in the normal population, and slightly higher than previously reported in unselected liver transplant groups. We could not find any association between the development of PTLD and aggressive immunosuppressive regimes for co-existing IBD post OLT. The study highlights that IBD/PSC patients remain at significant risk of colonic neoplasia after OLT and require intensive surveillance.

Disclosure of Interest:
All authors have declared no conflicts of interest.

OUTCOME OF LIVER TRANSPLANTATION FOR PRIMARY SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR MISMATCH: SINGLE CENTRE EXPERIENCE

Introduction:
Primary sclerosing cholangitis (PSC) is a chronic liver disorder of unknown etiology, characterized by inflammation, fibrosis and stenoses of both extra- and intrahepatic bile ducts. For those who develop end-stage liver disease, orthotopic liver transplantation (OLT) remains the only effective treatment currently available. PSC is accompanied with concomitant ulcerative colitis (UC) in a significant proportion of patients. Benefits of routine HLA typing in donor and recipient prior to OLT were proved in the past.

Aims & Methods:
The aim of this study was to assess the impact of HLA-DR mismatch on acute cellular rejection (ACR), PSC recurrence (rPSC) and course of UC after OLT. After applying inclusion/exclusion criteria we retrospectively evaluated records of 57 PSC transplanted at Institute for Clinical and Experimental Medicine (Prague, Czech Republic) between July 1994 and November 2011. Only patients with proper records ±5years from OLT were included. We evaluated likelihood for each variable (ACR, rPSC, course of UC) in transplanted patients with either single, or double mismatch in HLA-DR. Kaplan-Meier data were analysed with the log-rank test using MedCalc statistical software. A p - value <0.05 was considered as statistically significant.

Results:
Out of 59 patients, 27 (47.4%) had single mismatch (“M1” group) and 32 (52.6%) had double mismatches (“M2” group) in HLA-DR. None had full match. 33/57 (57.9%) patients had ACR: 15/27 (55.6%) of M1 and 18/30 (60%) of M2 (p = 0.94). 4/27 (14.8%) of M1 and 2/30 (6.3%) of M2 had corticosteroid ACR (p = 0.57). Multiple-episodes of ACR occurred in 11/57 (19.3%) patients: 6/27 (22.2%) of M1 and 5/25 (20%) of M2 (p = 0.74). 12/57 (21.1%) had de-novo UC after OLT: 7/27 (25.9%) of M1 and 5/30 (16.7%) of M2 (p = 0.60). In 37 (68.5%) patients, UC was diagnosed prior to OLT. 9/16 (56.3%) patients with M1 and 6/21 (28.6%) patients with M2 had more severe course of UC as compared to course prior to OLT (p = 0.17). 38 patients were evaluated for rPSC, which was diagnosed in 17 (44.7%) individuals. 6/19 patients with M1 and 11/19 with M2 had rPSC (p = 0.19).

Conclusion:
Patients with single mismatch in HLA-DR have slight tendency towards development of rPSC and worsening of UC after OLT as compared to patients with double mismatch. Analysis of combined mismatch in HLA-DR and HLA-DQ could demonstrate more substantial linkages in respective clinical variables. Therefore, these data have to be considered as preliminary as typing for HLA-DQ from frozen blood samples is currently underway.

Disclosure of Interest:
All authors have declared no conflicts of interest.

GRAFT DYSFUNCTION IN POST-LIVER TRANSPLANTATION: UTILITY OF TRANSIENT ELASTOGRAPHY BY FIBROSCAN®

Introduction:
Liver biopsy remains the gold standard in the diagnosis of graft dysfunction in post-liver transplantation (GDPLT). Liver transient elastography is a valid non-invasive method for liver fibrosis evaluation, with a good correlation in chronic liver diseases. The progression of fibrosis represents a major problem in the post-liver transplantation.

Aims & Methods:
We aimed to evaluate the predictive role of liver transient elastography in the evaluation of GDPLT and to determine the predictive factors of liver transplantation fibrosis. This was a retrospective single institutional cohort study of total of 49 patients with post-liver transplantation status who underwent liver transient elastogram by Fibroscan®. Selected patients who underwent percutaneous/transjugular liver biopsy. In case of more than one liver biopsy, it was selected the biopsy closer to Fibroscan®. The fibrosis and steatosis evaluated by Fibroscan® were compared with those obtained by liver biopsy. Significant fibrosis was considered if ≥2F. Demographic, analytical and associated clinical variables were compared.

Results:
A total of 32 patients underwent Fibroscan® and liver biopsy. Mean age of 48.53 ± 11.20years and male gender in 68.8% (n = 22). The mean time between Fibroscan® and liver biopsy was 29.77 ± 36.90months. The mean elastography score was 13.45 ± 8.31KPa with IQR/med of 17.11 ± 8.66%. Mean CAP score was 207.12 ± 57.35 dB/m. Regarding liver biopsy, 34.4% (n = 11) had significant fibrosis and 25.0% (n = 8) presented steatosis. Comparing two methods, there was no concordance for steatosis (kappa = 0.273; p = 0.177) or inflammation (kappa = 0.063; p = 0.710). On the contrary, a moderate agreement for significant fibrosis (kappa = 0.431; p = 0.003) was verified. The mean elastography score showed an accuracy of 79.7% in predicting histological fibrosis (AUROC = 0.797; p = 0.007) to a cut-off value of 11.6 KPa (Sensitivity 81.8%, Specificity 76.2%). In relation to analytical parameters, only serum albumin was present lower in patients with significant fibrosis but not steatosis or inflammation. Liver transient elastography can be a useful alternative to liver biopsy in the evaluation of post-liver transplantation fibrosis but not steatosis or inflammation.

Conclusion:
Liver transient elastography represents a non-invasive and valid alternative procedure to liver biopsy in the evaluation of post-liver transplantation fibrosis but not steatosis or inflammation. Liver transient elastography scoring >11.6KPa and low values of serum albumin are predictors of post-liver transplantation fibrosis.

Disclosure of Interest:
All authors have declared no conflicts of interest.
P1365 NEW-ONSET DIABETES AFTER TRANSPLANT (NODAT): INCIDENCE, RISK ANALYSIS AND IMPACT ON SURVIVAL, NEW-ONSET DIABETES AFTER TRANSPLANT (NODAT): INCIDENCE, RISK ANALYSIS AND IMPACT ON SURVIVAL

Y. Abbas1, K. Nawaz1, M. Salih2, N. Ullah3, S. Saadat1
1Gastroenterology, Hepatology And Liver Transplant, Shifa International Hospital, Islamabad/Pakistan
2Gastroenterology And Hepatology, Shifa International hospital, Islamabad/islamabad, Islamabad/Pakistan
3Nephrology, Shifa International Hospital, Islamabad/Pakistan

Contact E-mail Address: drysrarib@gmail.com

Introduction: Orthotopic liver transplant has become the standard of care for end-stage liver disease and hepatocellular cancer. Better immunosuppressants paved way for improved survival rates post-transplant. But with this longevity comes a higher prevalence of chronic diseases such as New Onset Diabetes After Transplant (NODAT), Hypertension, metabolic syndrome etc. which have a negative impact on function and patient survival.

Aims & Methods: Primary: To determine the incidence of New Onset Diabetes After Transplant (NODAT). Impaired Fasting Glycaemia (IFG) and post-transplant hyperglycemia in living-donor liver transplant recipients. Secondary: To determine the risk factors associated with NODAT and IFG. To determine impact of NODAT on survival and mortality. It was a retrospective cohort study of 283 living donor liver transplant recipients from 29/4/2011 till 26/4/2016. Data was collected from records. Simple means and standard deviation were calculated for continuous variables while frequency statistics were calculated for categorical ones. Risk factors were assessed using binary logistic regression analysis.

Results: A total of 130 post liver transplant patients were analyzed after exclusion. NODAT was present in 41/130 (31.5%) patients, while 19/130 (14.6%) patients had impaired fasting glycaemia. Acute cellular rejection, Pre-transplant Hyperglycemia and Pre-transplant prediabetes showed increased odds of acquiring NODAT post-transplant. NODAT had significant association with mortality and decreased survival (p = 0.05).

Conclusion: This cohort showed that NODAT is an important post-transplant entity with significant impact on mortality and survival. Early identification of at-risk patients is suggested.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1366 VITAMIN B12 AS A PROGNOSTIC MARKER IN PATIENTS WITH ACUTE ON CHRONIC LIVER FAILURE

V. L. Anapaz1, M. V. Machado2, C. Baldaiz2, A. Valente2
1Gastroenterology, Hospital Fernando Fonseca, Lisbon/Portugal
2Intensive Care Unit Of Gastroenterology And Hepatology, Hospital de Santa Maria, Lisbon/Portugal

Contact E-mail Address: vera_anapaz@hotmail.com

Introduction: Serum vitamin B12 (vB12) levels are increased in myeloproliferative diseases by increased production of the vitamin B12 transporter and in liver diseases by release of vB12 by hepatocytes death.

Aims & Methods: The aim of this study was to evaluate vB12 as a prognostic marker in patients with cirrhosis and acute on chronic liver failure (ACLF) in context of infection. Retrospective assessment of 55 patients admitted to an intensive care unit with ACLF in the context of infection (group 1) and 53 patients with compensated hepatic cirrhosis followed as Hepatology outpatients (group 2). Evaluation of vB12 as a predictor of 30 days’ mortality.

Results: 111 patients, 68% male, age 58 ±18 years. Group 1 had more prevalence acute liver disease (CPT 11.9± 3.6 vs. C6 6.5±0.2 and MELD 27.0±1.0 vs. 10 ±0.5), higher vB12 (1413 ±149 vs 735 ±56 pg/mL) and lower survival (1.6±0.4 vs. 6.4±2.7 years). vB12 positively correlated with hepatic function scores (CPT: R = 0.51; MELD: R = 0.57) and increase of one unit of MELD or vB12. In patients with ACLF, vB12 correlated with liver disease severity (CPT: R = 0.41; MELD: R = 0.53) and multiorgan failure (number of organ failures: R = 0.536. SOFA: R = 0.553). In group 1, survival was lower in patients with high vB12 (8 ±3 vs. 37 ±11 months), and 1 month’ mortality was associated with vB12, CPT, MELD, number of organ failure, urea, lactates and fibrinogen, in univariate analysis (p < 0.001). In multivariate analysis only fibrinogen maintained statistical significance (p < 0.001).

Conclusion: There was a strong association between high levels of vB12 and clinical decompensation of liver cirrhosis. vB12 correlated with scores of liver function and multiorgan failure, as well as early mortality in patients with ACLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1368 THE ASSESSMENT OF THE ADC PREDICTIVE VALUE IN SURVIVAL OUTCOMES OF PATIENTS UNDERGOING RADIOFREQUENCY ABLATION FOR METASTATIC COLORECTAL CANCER LIVER TUMORS

O. Kozak1, T. Nowicki, J.M. Pienkowski2, E. Izrycka-Swieszewska2, D. Zadrozny1, E. Szarowska1
1Department Of Radiology, Medical University of Gdansk, Gdansk/Poland
2Department Of Pathology And Neuropathology, Medical University of Gdansk, Gdansk/Poland

Aims & Methods: This is a post hoc analysis of prospective study to assess the predictive value of the ADC in survival outcomes of patients undergoing radiofrequency ablation due to metastatic colorectal cancer lesions in the liver. We analyzed the MRI studies of 52 patients (18 F, 34 M, aged 4383) performed on 1.5 T scanner one day before the percutaneous RFA treatment. The total number of analyzed lesions was 110 (15 per patient), 83 of them were completely ablated, 27 incompletely, what was assessed in follow-up CT studies. The standard protocol of the liver MRI was applied including DWI sequence in b values of 0, 15 and 300 s/mm², ADC maps were calculated for b values of 015 and 0500 s/mm². The DWI ADC value was obtained by threefold ROI coverage of the whole metastatic lesion. In cases of multiple foci only the lesion with the highest ADC value was included into analysis. On basis of ROC analysis the cut-off values of ADC were established: 2.49 mm²/s for b value of 0.15 s/mm² and 1.43 mm²/s for b value of 0.500 s/mm². The survival outcomes were assessed by mean of Kaplan-Meier estimator. The p value lower than 0.05 was considered significant.

Results: The statistical analysis included Kaplan-Meier estimator for 52 patients with 8 censored cases (17.3%). In ADC maps for b value of 0.500 s/mm², the ADC value ≥1.43 mm²/s correlated with longer survival time, whereas ADC value <1.43 mm²/s correlated with shorter survival time. Statistically significant differences were identified by log rank test (p = 0.007). Such a correlation was not observed for ADC values in ADC maps for b value of 0.15 s/mm² (p = 0.058).

Conclusion: The study showed significant differences in survival rate depending on diffusion influenced ADC values of metastatic lesions.

Disclosure of Interest: All authors declared no conflicts of interest.

References

Contact E-mail Address: olsiwaik@umed.edu.pl

P1370 LEARNING CURVE EVALUATION USING ELASTPO

R. Mare1, I. Sporeaj, S.A. Popescu1, R. Sîrlí, C. Pienar2
1Gastroenterology And Hepatology, Emergency County Hospital Timisoara, Romania
2Gastroenterology, Pediatrics, "Victor Babes" University of Medicine, Timisoara, Romania

Aims & Methods: The aim of our study was to evaluate the learning curve of obtaining reliable liver stiffness measurements (LSM), using ElastPQ. LSM of a trainee were compared to LSM of an elastography expert (with an experience of more than 500 examinations). Our study group included 50 subjects (mean age: 52.7 years, 66.6% men, mean BMI: 25.6 kg/m²). Both the trainee and the expert obtained LSM for each subject, using ElastPQ (EPIQ 7, Philips Healthcare, Bothell, WA, USA). Reliable LSM were defined as the median difference measurements < 10% in a homogenous area avoiding large vessels and with an IQR/median < 30%. The learning curve was evaluated using the Receiver Operating Curve analysis using the expert’s results as reference.

Results: The trainee’s performance in obtaining reliable LSM was good (AUC: 0.735, 95% CI (0.557–0.913), p = 0.01). The trainee started to have similar results with the elastography expert after the 30th subject. When looking at the IQRs, they became significantly lower after the 30th subject (2.6 to 2.1 kPa vs 6.5 to 2.1 kPa, p = 0.03).

Conclusion: Obtaining reliable LSM using ElastPQ can be easily achieved after 30 LS examinations.

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S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva.

All other authors have declared no conflicts of interest.

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2. Shi KQ et al. Controlled attenuation parameter for the detection of steatosis on diffusion influenced ADC values of metastatic lesions.

Contact E-mail Address: rus23232@yahoo.com
Aims & Methods: In patients with liver cirrhosis, hepatocellular carcinoma (HCC) can be diagnosed by noninvasive imaging methods (contrast-enhanced ultrasound or contrast-enhanced CT). The RADS classification of the 298 lesions was considered in all three phases (portal, arterial, and washout). The nodules were classified according to their size in ≤3 cm and >3 cm. We re-evaluated all 249 HCCs CEUS studies using the ACR CEUS LI-RADSv 2016 algorithm. The nodules were classified according to their size in ≤3 cm and >3 cm. We re-evaluated all 249 HCCs CEUS studies using the ACR CEUS LI-RADSv 2016 algorithm.

Results: After CEUS examination a conclusive diagnosis of HCC was obtained in 190/249 cases (76.3%). Arterial phase hyperenhancement pattern was present in 227/249 cases (91.2%). In the portal phase iso- or hypoenhancement was observed in 17/249 cases (6.8%) and hypoenhancement in 5/249 cases (2%). In the late phase washout was observed in 197/249 cases (79.1%). The nodules ≤3 cm were diagnostic conclusive on CEUS in 63.7% (72/113), while nodules >3 cm had a conclusive result in 86% of cases (138/211), p < 0.001. CEUS examination was conclusive for HCC in 76.3% of the cases (190/249), while using the ACR CEUS LI-RADSv 2016 algorithm in 72.2% of all HCCs (180/249), p = 0.35.

Conclusion: In our study, CEUS arterial hyperenhancement is the most common pattern observed in HCC (91.2% of cases), followed by washout in the late phase (79.1% of cases). The size of the nodule modifies CEUS sensitivity for the diagnosis of HCC p < 0.001.

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P1373 DICKKOPF-1: AS A SERUM BIOMARKER FOR PREDICTION OF HEPATOCELLULAR CARCINOMA TREATMENT RESPONSE
A. L. Sharaf, E. G. El-Badrawy, N. A. Khalifa
1Tropical Medicine Department, Zagazig University, Zagazig, Egypt
2Clinical Pathology Department, Zagazig University, Zagazig, Egypt

Contact E-mail Address: drnahmed_lotfy@hotmail.com

Introduction: Hepatocellular carcinoma (HCC) is the 5th most common cancer worldwide and the 3rd leading cause of cancer-related mortality. In Egypt, HCC is the 2nd most common cancer in men and the 6th most common cancer in women. Egypt has the highest prevalence of HCC worldwide and has rising rates. HCC is a disease with fast infiltrating growth and poor prognosis. This bad prognosis is due to the lack of an effective method for early diagnosis. So, it is necessary to find a specific & sensitive marker for early diagnosis of HCC and for monitoring of treatment response.

Aims & Methods: The aim of this work is to test prognostic value of serum DKK1 in predicting treatment response, complication and survival in HCC patients. This study included 60 patients divided into two groups. Group A: consisted of 30 patients with liver cirrhosis. Group B consisted of 30 patients with HCC. Group B patients underwent either radiofrequency ablation or ethanol injection. Clinical assessment, routine laboratory evaluation, CT studies and measurement of serum alpha-fetoprotein (AFP) and DKK1 were performed for all patients and repeated to group B patients 1 and 3 months after treatment.

Results: DKK1 significantly can be used for HCC diagnosis even in HCC with inconclusive AFP. The optimum cut off value of DKK1 for diagnosis of HCC was 4.3 ng/ml (AUC 0.89, sensitivity 66.7% and specificity 96.6%) (P < 0.001). Serum DKK1 level significantly decreases after HCC treatment with either radiofrequency ablation or ethanol injection (P < 0.001). Conclusion: DKK1 has a promising prognostic value and can be used for follow-up of HCC patients before and after treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1374 EFFECT OF FIBROBLAST GROWTH FACTOR-2 AND ITS RECEPTOR GENES POLYMORPHISMS ON SURVIVAL IN PATIENTS WITH HEPATITIS B VIRUS–ASSOCIATED HEPATOCELLULAR CARCINOMA
J. Cheong
Gastroenterology, Ajou University Hospital, Suwon, Korea, Republic of

Contact E-mail Address: jaeyoun620@gmail.com

Introduction: Fibroblast growth factor (FGF), vascular endothelial growth factor, and hepatocyte growth factor play a critical role in the pathogenesis of hepatocellular carcinoma (HCC). The FGF2 rs8038793 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The F1t-1 rs4771249 C allele was associated with low alpha-fetoprotein levels. Kaplan-Meier analysis showed that the patients with the FGF2 rs804477 TT genotype had lower survival rates than the patients with the CC or CT genotype (P = 0.016) and that the FGF2 rs803879 A allele carriers had shorter survival rates than those of patients with the TT genotype (P = 0.020). The FGF2 rs1219648 CC genotype was significantly associated with increased survival rates (P = 0.047). Multivariate Cox proportional analysis revealed that the FGF2 rs803879 A allele (hazard ratio = 1.663, P = 0.004) and advanced stage (hazard ratio = 3.430, P = 0.001) were independent prognostic factors for overall survival rates in patients with HCC.

Results: Of the 395 patients enrolled, 280 (71.1%) were men and 115 (28.9%) were women. The mean age was 52.7 ± 8.2 years. The 5-year overall survival rate of all patients was 43.7 %. The 5-year overall survival rate at 3 years was 70.2%. The mean survival time was 42.7 ± 9.1 months. The 5-year overall survival rate of patients with the CC or CT genotype (n = 186) was 57.5%, while that of patients with the TT genotype (n = 209) was 36.8% (P = 0.016). The FGF2 rs803879 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The F1t-1 rs4771249 C allele was associated with low alpha-fetoprotein. The Kaplan-Meier analysis showed that the patients with the FGF2 rs804477 TT genotype had lower survival rates than the patients with the CC or CT genotype (P = 0.016) and that the FGF2 rs803879 A allele carriers had shorter survival rates than those of patients with the TT genotype (P = 0.020). The FGF2 rs1219648 CC genotype was significantly associated with increased survival rates (P = 0.047). Multivariate Cox proportional analysis revealed that the FGF2 rs803879 A allele (hazard ratio = 1.663, P = 0.004) and advanced stage (hazard ratio = 3.430, P = 0.001) were independent prognostic factors for overall survival rates in patients with HCC.

Disclosure of Interest: None of the authors have any conflicts of interest.
Conclusion: These observations suggest that the SNPs of the FGFR2 and FGFR3 genes can be potential prognostic indicators in patients with HBV-associated HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1375 EXTRAHEPATIC HEPATOCELLULAR CARCINOMA METASTASIS: IMPORTANCE OF AN EARLY DIAGNOSIS AND TARGETED THERAPY
R. Morais1, H. Cardoso2, S. Rodrigues3, R. Coelho3, R. Liberal1, P. Pereira1, A. Albuquerque1, R. Gonçalves1, S. Lopes1, A.M. Horta, E. Vale1, G. Macedo2
1Gastroenterology, Centro Hospitalar São João, Porto/Portugal
2Centro Hospitalar São João, Porto Medical School, Porto/Portugal

Contact E-mail Address: ruirmorais20@gmail.com

Introduction: Extrahepatic HCC metastasis are associated with a poor prognosis. Nevertheless there are some effective therapies available.

Aims & Methods: The aim of this study was to assess the main sites of extrahepatic metastasis in hepatocellular carcinoma (HCC) patients and to evaluate the clinical evolution and treatment. This was a retrospective single-center study in which patients with HCC confirmed extrahepatic metastasis between January 2010 and December 2016 were evaluated.

Results: We evaluated 51 consecutive patients, 80% male, with a mean age of 64 ± 11 years at the time of metastasis. In 41% of the patients the metastasises were present at the time of HCC diagnosis. In patients with subsequent metastasis, the median time until its development was 9 months (IQR 5–16). The diagnosis of metastasis was incidental in 51% of the patients. Computed tomography (CT) was the main diagnostic method (86%) and in 18% of the cases histological confirmation was obtained. Nineteen patients underwent thoracic CT and five performed bone scintigraphy prior to metastasis. A total of 70 metastatic sites were identified, the more frequent were lung (33%) and bone (14%). The MELD score at the time of metastasis was higher than the MELD score at the HCC diagnosis (p = 0.009). Metastasis detection implied changes in HCC therapy in all patients, 41% switched to TACE and 55% were referred for supportive therapy. Seven patients performed metastasis targeted treatment, namely 3 patients underwent radiotherapy. The median overall survival (OS) after metastasis was 4.0 months (95%CI 2.1–5.8 months) and the mortality rate was 81% at 12 months. Patients who underwent metastasis targeted treatment presented a longer OS than those who did not (median 18.5 vs 3.1 months; p = 0.002). In multivariate analysis, MELD score at the time of metastasis (p = 0.004) and metastasis treatment (p = 0.005) were independently associated with OS estimation.

Conclusion: A systematic HCC staging, with thoracic CT and bone scintigraphy, may provide an earlier metastasis detection and enable a targeted treatment with a consequent improvement in survival in this difficult-to-treat population.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1376 MANAGEMENT OF INTERMEDIATE STAGE HEPATOCELLULAR CARCINOMA
A. Deguchi
Department Of Gastroenterology, Kagawa Rosai Hospital, Marugame-shi, Kagawa/ Japan

Contact E-mail Address: akihiru41@me.com

Introduction: According to the Barcelona Clinic Liver Cancer (BCLC) staging system, intermediate stage contains very heterogeneous hepatocellular carcinoma (HCC) patients. Recently, subclassification of intermediate stage on the basis of Milano criteria and up to 7 criteria is proposed. In this study, the effectiveness of delivering second-line anti-tumor chemotherapy (DEB-TACE) in intermedi- ate stage was investigated.

Aims & Methods: 120 patients (M: F = 90:30; median age = 76; Child A: B: C = 72:44:4; BCLC stage A: B: C: D = 6:85:23:6) with unresectable HCC who received DEB TACE in our hospital were studied. The objective radiological response was classified according to the modified Response Evaluation Criteria in Solid Tumors (mRECIST) v.1.1 by using dynamic CT at one or two months after therapy. Adverse events were evaluated using NCI CTCAE v. 4.03.

According to Bolondi’s subclassification, the patients of BCLC B stage were divided into four groups (B1: 31; B2: 19; B3: 14; B4: 10). The response rate and tumor factor associated response in these patients group were examined.

Results: The overall response rate and disease control rate in intermediate stage were 36% and 89%, respectively. Considering the subclassification, the response rate in B1 group (61%) was significantly higher than that of B2+B3 group (29%). Although B2+B3 group was constituted by the patients who did not satisfy the up to 7 criteria, only in the patients with less than 7 tumors, the response rate (60%) was similar to that of B1 group. Tumor factors associated response rate and found to be significant on univariate analysis were simple gross classification (classification being nodular type) and number of tumors.

Conclusion: For the treatment of intermediate-stage HCC, although DEB-TACE is considered to be most effective in B2 group, it is suggested that DEB-TACE is also effective in the patients with less than 7 tumors in B2+B3 group. In cases with more than 7 tumors, as the response rate is considered to be extremely low, sorafenib and arterial infusion therapy are recommended.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1377 HEPATOCELLULAR CARCINOMA RECURRENCE RATE IN INFECTED PATIENTS TREATED WITH DIRECT ANTIVIRAL AGENTS. A SINGLE-CENTER EXPERIENCE
Hepatology Unit, Cardarelli Hospital, Naples/Italy

Contact E-mail Address: raffaellatorrotta@live.com

Introduction: In the last few years many HCV patients with previous diagnosis of hepatocellular carcinoma (HCC) have been treated with direct antiviral agents (DAAs) for HCV infection. However there are conflicting data on HCC recurrence rate after DAAs therapy.

Aims & Methods: Aim of this study was to prospectively evaluate the rate of HCC recurrence following sustained virological response (SVR) by DAAs. From April 2015 to September 2016 we consecutively enrolled HCV infected patients previously treated for HCC at Liver Unit of Cardarelli Hospital. All patients had a free-disease survival from HCC of at least 6 months before starting antiviral therapy. The efficacy of HCC therapy was evaluated according to mRasct cri-
teria at CT or MRI. Radiological evaluation was carried out within 30 days from the start of therapy. All patients underwent DAAs therapy, selected on an individ-
ual basis according to the recommendation issued by the Italian association of the study of the liver.

Results: A total of 71 patients were enrolled. Among them, 42 patients had available data on SVR status and were considered for the analysis. There were 21 males (58.3%) and 15 females. The median age of the patients was 73 years (range 24–85). The median time to treatment was 12 months after the beginning of the therapy (range: 6–18 months). Genotype distribution was as follows: 36 patients infected with genotype 1 (85.7%), 5 with genotype 2 and 1 patients with genotype 3. SVR was achieved in 38/42 patients (90.5%). HCC recurrence was observed in 11/38 patients with SVR (28.9%). The median time for recurrence was 9 months from the start of therapy with a range of 1–13 months; with 2 patients who showed recurrence during therapy. Among the patients who did not achieve SVR, 1/4 showed HCC recurrence after 10 months from end of treatment.

Conclusion: Treatment with DAAs are highly effective with a SVR of about 90% even in patients with advanced liver disease. Nonetheless, in patients with previous history of HCC, the eradication of HCV did not reduce the risk of short and medium-term recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1378 PATTERN OF DISTANT EXTRAHEPATIC METASTASES IN PRIMARY LIVER CANCER: A SEER-BASED STUDY
W. Wu, X. He2, L. Li1, D. Fang1, D. Shi1, Y. Li1, J. Ye1, F. Guo1
1Academy Key Laboratory for Diagnosis and Treatment of Infectious Diseases, The First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China; Hangzhou/China
2Department of Gastroenterology, Sir Run Run Shaw Hospital, Zhejiang University Medical School, Hangzhou, China; Hangzhou/China

Contact E-mail Address: wwx725@zju.edu.cn

Introduction: Primary liver cancer is the sixth most common cancer in the world, after cancers of the lung, breast, colorectal, prostate and gastric.[1] However, the extremely poor prognosis for primary liver cancer makes it the second leading cause of cancer-related death globally (745,000 deaths, 9.1% of the total death)[2]. Histologically, the majority of primary liver cancer is either
hepato cellular carcinoma (HCC) or intrahepatic cholangiocarcinoma (ICC), which are combined hepatocellular carcinoma and cholangiocarcinoma is less common[3]. Though these treatments have shown modest improvement in overall survival in early stage disease, the 5-year relative survival for distant metastasis patients is still low (3.1%). As we all know, primary liver cancer preferably metastasizes to the portal vein and extrahepatic metastasis include lungs, bones, brain, lymph nodes, and adrenal glands[4–6]. To date, few detailed studies explored extrahepatic metastasis profiles due to rare data of liver cancer metastasis. Patterns of extrahepatic metastasis still need further clarification. Besides, it is unclear whether different metastatic sites would be translated into distinct clinical outcomes.

Aims & Methods: The objective of this study was to further evaluate extrahepatic metastatic patterns of different histological subtypes and assessed effects of extrahepatic metastasis on survival of advanced disease. Methods: Based on the Surveillance, Epidemiology and End Results (SEER) database, we identified eligible population diagnosed with primary liver cancer. We adopted Chi-squared test to compared metastasis distribution among different histological types. Overall survival (OS) and cancer-specific survival (CSS) were compared between subgroups with different extrahepatic metastasises.

Results: We finally identified 8677 patients who were diagnosed with primary liver cancer from 2010 to 2012 and 1836 patients were in distant metastasis stages. Intrahepatic cholangiocarcinoma was more invasive and had a higher percentage of metastasis compared with hepatocellular carcinoma. Lung was the most common metastatic site and brain was least common site for both hepatocellular carcinoma and intrahepatic cholangiocarcinoma. Extrahepatic metastasis was an independent prognostic factor for liver cancer patients. Patients with brain metastasis had the worst prognosis, compared with other metastasis in OS and CSS analysis.

Conclusions: Different histological subtypes of liver cancer had different metastasis patterns. There were profound differences in risk of mortality among distant extrahepatic metastatic sites. Results from our studies would provide some information for follow-up strategies and future studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods:

- Portal vein thrombosis (PVT) is defined as a partial or complete occlusion of portal vein and/or its tributaries by a thrombus. It exposes to portal hypertension (PHT) by infrahepatic occlusion and consequently to upper digestive hemorrhage, usually due to rupture of gastro esophageal varices.

Contact E-mail Address: ouhhabimane@yahoo.fr

Introduction: Portal vein thrombosis (PVT) is defined as a partial or complete occlusion of portal vein and/or its tributaries by a thrombus. It exposes to portal hypertension (PHT) by infrahepatic occlusion and consequently to upper digestive hemorrhage, usually due to rupture of gastro esophageal varices.

- Patients: In a retrospective study from January 2010 to February 2017, including 101 patients followed for PHT by PVT without liver disease in the department of hepatogastronterology (medicine C) at Ibn Sina University hospital of Rabat, Morocco. PVT was diagnosed by abdominal doppler ultrasonography in all patients.

- Results: The mean age of patients was 36 ± 15 years with extremes ranging from 11 years to 70 years. The sex ratio M/F was 0.42. Five percent of patients had a splenectomy for undocumented reasons before the diagnosis of PHT. Concerning the evolution, 10.9% (n = 11) patients were hospitalized for melena, 60.4% (n = 61) for hematemesis and melena and 28.7% (n = 29) for non-specific abdominal pain. Clinical examination was normal in 10.9% (n = 11), showed an axites in 11.9% (n = 12), and signs of PHT such as splenomegaly and collateral abdominal vessel in 95.1% (n = 96). Complete blood count showed that 16.8% (n = 17) had thrombocytopenia, 12.9% (n = 13) had bicytopenia, and 42.6% (n = 43) had pancytopenia. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 30.7% (n = 31), grade I esophageal varices (EV) in 15.9% (n = 16), grade II in 30.7% (n = 31), and grade III in 48.5% (n = 49) and gastric varices were noted in 13.9% (n = 14). These varices were with red spots in 18.8% (n = 19). All patients had abdominal doppler ultrasonography showing a PVT in 60.3% (n = 61), was partial in 33.6% (n = 34), complete in 11.5% (n = 12), extended to the splenic vein in 14.9% (n = 15), showed an occlusion in 39.6% (n = 40). All patients performed an etiologic assessment of thrombosis, myeloproliferative syndrome was found in 8.9% (n = 9), deficiency in inhibitors of coagulation in 31.7% (n = 32), celiac disease in 4.9% (n = 5), neoplastic lesions in 2.9% (n = 3), no etiology was found in 51.4% (n = 52). Endoscopic variceal ligation (EVL) was performed in 70.3% (n = 71), the mean number of ligation sessions was 3 and eradication of esophageal varices was noted in 69.3% (n = 70). All patients received anticoagulant therapy except those having portal caverno, with no obvious cause and 15.9% of patients (n = 43) received beta-blockers for secondary prophylaxis. During follow up, 5.9% (n = 6) of patients have not been seen at consultation and no rebloeding was noted in 89.1% (n = 90). Concerning portal thrombosis, it dissolved in 49.5% (n = 50) and stabilized in 10.8% (n = 11).

Conclusion: The evolution of esophageal varices in non-cirrhotic portal hypertension due to PVT seems to be better than in cirrhotic portal hypertension. Indeed we aimed to evaluate the feasibility and safety of POC to verify CBD stones complete clearance. Ultraslim catheter as a single device required for BDS clearance. From January 2016 to 31 Dec 2015. Outcome measures included the success rates, adverse events, recurrence rate and mortality. All data were collected from patients’ medical records.

- Results: PTCS achieved complete clearance of GB stones in 157 patients (91.8%). The complication rate of PTCS was 3.5% (6/171). The adverse events included GB perforation (n = 3, 1.8%), hemorrhage (n = 2, 1.2%), disruption of the percutaneous transhepatic biliary drainage fistula (n = 1, 0.6%), and all of which resolved with conservative treatment. The overall recurrence rate of gallstone diseases was 11.5% during the follow up period. The incidence of recurrent gallstone diseases was significantly higher in those with completely removing GB stones than in those without complete clearance (10.2%, 16/157 vs 21.4% 3/14; p < 0.05). The frequency of recurrence of gallstone disease in patients with contrast passage to the duodenum on cholangiography after PTCS was lower than that in patients without contrast passage.

- Conclusion: Gallbladder stone removal with PTCS would be recommended as an effective and safe treatment modality for the patients with acute cholecystitis who are unsuitable for surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.
used for initial bile duct cannulation. Subsequently, sphincterotomy and stone extraction were performed using the combined catheter. The success rate of performing the combined procedure, procedure-related time, adverse events, and the cost of devices were compared with those in 10 patients with BDSs < 10 mm in size who had undergone endoscopic stone clearance from April 2015 to December 2015 in historical control.

Results: The success rate of selective cannulation and stone clearance did not differ significantly (Stonetome group: 90.9% and 100% vs control group: 100% and 100%, respectively). The median time after bile duct cannulation to complete stone clearance and total procedure time in the Stonetome group were significantly shorter than those in the control group (401.5 vs 892.5x, 645.5x versus 1380b, respectively). In the Stonetome group, delayed bleeding occurred in 1 patient. In the control group, bile duct injury caused by the guidewire occurred in 1 patient. The costs of the used devices did not differ significantly (Stonetome group: $678 versus control group: $669).

Conclusion: The combined catheter has the same selective cannulation ability as a conventional catheter and a similar capacity to remove BDSs as common retrieval. Therefore, the combined catheter can reduce the procedure time to remove BDSs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1387 ACCURACY OF ASGE CRITERIA IN THE IDENTIFICATION OF PATIENTS WITH SUSPECTED CHOLEDOCHOLITHIASIS
C. Macedo, N. Almeida, D. Gomes, E. Camacho, S. Mendes, L. Tomé, A. M. Ferreira
Gastroenterologia, Centro hospitalar e Universitário de Coimbra, Coimbra/Portugal
Contact E-mail Address: claudia.macedo.07@hotmail.com

Introduction: Society for Gastrointestinal Endoscopy (ASGE) emitted, in 2010, guidelines for the clinical orientation of patients with suspected cholecholecithis (CL), suggesting the direct referral to endoscopic retrograde cholangiography (ERC) in certain groups. However, the ERC is an invasive exam and some studies demonstrated that a significant amount of patients classified with very strong risk of CL did not have alterations in ERC.

Aims & Methods: The aim of this work was to assess the accuracy of the ASGE guidelines in portuguese population. This is a retrospective study that included 212 patients (52.8% female; 47.2% male sex; mean age 73.9 (±14.6 years) admitted to the hospital from 2014 to 2016.

Results: Of the 212 patients, 28 (13.2%) had intermediate risk of CL and 184 (86.8%) had high risk, according to the ASGE criteria. These patients were submitted to the following exams/interventions: ERC (154 patients); magnetic resonance cholangiography (50 patients) and endoscopic ultrasound (8 patients). In patients classified with high risk of CL, this was confirmed in 119 (64.7%). The same was seen in 10 (35.5%) of the patients with intermediate risk. The ASGE criteria, when applied to this population, demonstrated an accuracy of 64.3% (21.7% sensitivity; 92.3% specificity) in the high-risk group, and an accuracy of 35.5% (78.3% sensitivity; 78.6% specificity) in the intermediate-risk group. Of the patients with intermediate probability, 12 (42.8%) underwent ERC and CL was found only in 4 of these patients. The presence of cholangitis, a common bile duct > 6 mm, a common bile duct stone visualized on transabdominal US and a total bilirubin > 4 mg/dL were strong predictors of CL. The overall ERC complication rate was 13% (20 patients), of whom 8 had no CL. Conclusion: The present guidelines showed a limited diagnostic accuracy in the identification of patients who actually require ERC, conditioning a significant number of unnecessary procedures with subsequent complications associated with it. The orientation of these patients, with greater use of less invasive diagnostic techniques such as magnetic resonance cholangiography and endoscopic ultrasound.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
The role of endoscopy in the evaluation of suspected cholecholecithis by the American Society for Gastrointestinal Endoscopy, volume 71, No:1 2010 Gastrointestinal Endoscopy

P1388 DOES FIBRIN GLUE APPLIED ON THE CHOLANGIOTOMY IN LAPAROTOMY COMMON BILE DUCT EXPLORATION REDUCE THE RISK OF BILE LEAKAGE? A RANDOMISED STUDY
B. Darkahi1, G. Sandblom2, T. Norden3
1Surgery Department, Enköping/Sweden
2Surgery Department, Upplands/Sweden
Contact E-mail Address: bahman.darkahi@gmail.com

Introduction: Laparoscopic cholecystectomy as a method of extracting common bile duct stones is a technique with many advantages. One problem, however, is bile leakage. To some extent, the leakage may be reduced if the incision is susurated around the T-tube, but this technique has some disadvantages. The aim of this study was to investigate whether application of fibrin glue around the tube results in less leakage than suturing.

Aims & Methods: Between 2012 and 2016 a total of 1347 cholecystectomies were performed in Enköping Hospital. From this group, 42 patients were included in the study and randomized to suturing or fibrin glue for closing the cholangiomy around the T tube. Postoperative cholangiography was performed after 7-10 days after surgery. The amount of flow in the abdominal drain and the level of enzymatic liver function tests were monitored daily. In case the flow ceased, the abdominal drain was extracted three days after surgery.

Results: No significant difference between the groups was seen regarding the flow of the abdominal drain or the T-drain for the first three days or operation time

Conclusion: Fibrin glue may be an option to seal cholangiomy around the T-tube, but studies with greater statistical power are needed to confirm this.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1389 THE IMPACT OF BARIATRIC SURGERY ON ACUTE CHOLANGITIS MORTALITY AND OTHER OUTCOMES: A NATIONWIDE ANALYSIS
P.T. Kroener1, M. S. Abougergi2, V. Popov3, C. C. Thompson4
1Mt Sinai St. Luke’s/West, New York, United States of America
2Catalyst Medical Consulting, Simpsonville/United States of America/SC
3New York University School of Medicine, New York/United States of America
4Division Of Gastroenterology, Hepatology, And Endoscopy, Brigham and Women’s Hospital, Boston/United States of America
Contact E-mail Address: thomas.kroener@gmail.com

Introduction: Rapid weight loss after bariatric surgery (BS) has been associated with the formation of gallstones, and subsequent acute cholecystitis and cholangitis (AC). However, the complex post-surgical anatomy limits the possibility of performing an ERC as part of AC treatment. Therefore, the aim of this study was to assess the impact of bariatric surgery on mortality and resource utilization among patients with AC using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publically available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of AC were included. There were no exclusion criteria. Patients with a past history of BS were identified using the appropriate ICD-9-SCM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization: use of ERC, cholecystectomy, length of hospital stay (LOS), total hospitalization charges and costs. Multivariate regression analyses were used to adjust for the following confounders: Age, sex, race, income in patients’ zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status.

Results: A total of 274,775 patients with AC were included in the study, of which 4,240 (1.7%) had undergone BS. The mean patient age was 51 years and 48% were female. After adjusting for confounders, patients with and without history of bariatric surgery had similar adjusted odds of mortality (adjusted Odds Ratio (aOR): 0.87, 95% CI: 0.51–1.49, p = 0.57). As far as resource utilization, patients with bariatric surgery had lower adjusted odds of ERC (aOR: 0.28, 95% CI: 0.09–0.83, p = 0.02), but higher odds of cholecystectomy (aOR: 3.18, 95% CI: 1.00–10.05, p = 0.04). Both patient groups had similar adjusted length of stay (adjusted mean difference: 1.19 days, 95% CI: 0.09–0.83, p = 0.16) total hospitalization costs (adjusted mean difference: $2237, 95% CI: $2308 – $6782, p = 0.49), and total hospitalization charges (adjusted mean difference: $7477, 95% CI: $8995–$24549, p = 0.39).

Conclusion: Bariatric surgery has no impact on inpatient all-cause mortality among patients who develop acute cholangitis, despite its association gallstone acute pancreatitis and limited ERCP performance. In addition, bariatric surgery does not affect resource utilization in this patient population as measured by length of stay and total hospital costs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1391 PATHOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERISTICS OF NEOPLASTIC AND NONNEOPLASTIC GALLBLADDER POLYPS
S. Z. Wemmacke1, A. Van Dijck2, J. Reasnais3, N. Hasami3, J.P. Drenth3, C. J.H.m. Van Laarhoven1, P. De Reuver1, I.D. Nagtegaal4
1Dept. Of Surgery, Radboud University Medical Centre, Nijmegen/Netherlands
2Dept. Of Surgery, Academ. Medisch Centrum Amsterdam, Amsterdam/Netherlands
3Gastroenterology And Hepatology, Radboud University Nijmegen Medical Centre - Gastroenterology and Hepatology, Radboud University Nij, Nijmegen/Netherlands
4Radboud University Nijmegen Medical Center, Radboud University Nijmegen Medical Center Dept. of Pathology, Nijmegen/Netherlands
Contact E-mail Address: sarah.wemmacke@radboudumc.nl

Introduction: Prevalence of gallbladder polyps in the Netherlands is 943 per 100,000 cholecystectomies. Histopathologically these gallbladder polyps can be divided into neoplastic polyps (with malignant potential) and nonneoplastic polyps (without malignant potential). Although cholecystectomy is only indicated for neoplastic polyps, 47% of polyps after cholecystectomy are nonneoplastic. Further information on the pathological characteristics and subsequent clinical and radiological features could be useful to predict neoplastic or nonneoplastic nature of the gallbladder polyp before surgery.

Aims & Methods: To assess pathological characteristics of neoplastic and non-neoplastic gallbladder polyps and identify preoperative clinic and radiological predictors for neoplastic and nonneoplastic polyps. Data of the Dutch Pathology Registry was used. In this search 2081 histopathologically proven gallbladder polyps (or (focal) wall thickening > 5mm) were identified in patients of ≥18 years undergoing primary cholecystectomy between 2003 and 2013. Of these
Disclosure of Interest: preoperative radiological investigations is poor. Nonneoplastic polyps are confirmed, identification of these characteristics on ultrasound was a predictor for neoplastic polyps (OR 6.00 (95%CI 1.32–27.31)). Size and type of polyp were often not mentioned in ultrasound report, or different from histopathological confirmation.

Conclusion: Except for age, no clinical characteristics for neoplastic polyps were identified in this cohort. Although pathological characteristics of neoplastic and nonneoplastic polyps are confirmed, identification of these characteristics on preoperative radiological investigations is poor.

Disclose of Interest: All authors have declared no conflicts of interest.

P1392 METFORMIN INDUCES APOPTOSIS AND MODULATES PROLIFERATION IN THE BILE DUCT CANCER CELLS

J. Lee, J.H. Jung, D.H. Koh, S.W. Park, H.J. Jang, M.H. Choi, S. Kae Gastroenterology; Hallym University Dongguk Sacred Hospital, GyeongDo-Korea, Republic of Korea

Contact E-mail Address: jinlee@hallym.or.kr

Introduction: Metformin has evidence of antineoplastic activity in some cancer cells.

Aims & Methods: This study was performed to demonstrate in the bile duct cancer cells whether metformin inhibits the proliferation of cancer cells by inducing apoptosis and affects the expression of gene-related proteins involved in cancer growth, and to identify how metformin affect molecular mechanisms involved in the inhibition of cancer cell growth. Human extrahepatic bile duct cancer cells were cultured. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays were performed to determine the effect of metformin on cell proliferation. Apoptosis was measured by a cell death detection enzyme-linked immunosorbent assay and caspase-3 activity assay. Various protein expressions with or without specific siRNA transfection were measured by Western blot. The migratory activity of the cancer cells was evaluated by wound healing assay.

Results: 1) Metformin suppressed cell proliferation in bile duct cancer cells by inducing apoptosis. 2) Metformin inhibited mammalian target of rapamycin (mTOR) by activation of AMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKSer485. 3) Metformin effects of GBC on growth factor 1 receptor (IGF-1R), insulin receptor substrate 1 (IRS-1) and AKT pathway on TSC2, and hyperglycemia impaired metformin-induced inhibition of IGF-1R-IRS-1-AKT pathway. 4) Metformin modulated invasiveness of bile duct cancer cells, and the effects was impaired by hyperglycemia.

Conclusion: This study shows that metformin has antineoplastic effect in bile duct cancer, and the effect of metformin is attenuated by hyperglycemia. This could be important targets for future development of chemotherapists.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. Lai SW, Chen PC, Liao CH, Hsu CH, Sung FC. Risk of hepato-biliary disease, 43.7% nonneoplastic (all other types of polyp). Age and sex of the patient, number of polyps, size of the polyp, coincidence with gallstones and presentation as protruding polyp or wall thickening were extracted from the excerpts. Additional clinical and radiological information was collected from prospective medical records at three hospital in the Netherlands (n = 178). The following clinical and radiological predictors were considered: age, gender, ethnicinity, BMI, medical history (PSC, Hepatitis, metabolic syndrome, gallbladder disease, Salmonella typhi or Helicobacter pylori infection), family history of gallbladder cancer, and the character of the each tumor is mandatory.

P1393 REGULATIONS IN BASE EXCISION REPAIR (BER) PATHWAY AND RESULTING OXIDATIVE STRESS AS KEY MODULATOR OF GALL BLADDER ANOMALIES AND PROGRESSION TO CARCINOCENESIS: A NORTHEAST ASIA BASED STUDY

S. Bose1, N. Singh2, D. Tiwari1, R. Sultana1, R. Borkotoky1, A. K. Saikia3, N. Das4, S. N. Kazim4

1 Biotechnology, Gauhati University, Guwahati/India
2 Bioengineering And Technology, Gauhati University, Guwahati/India
3 Gastroenterology And Medicinal Uni, Central hospital, NF Rly, Guwahati/India
4 Tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKSer485. 3) Metformin impaired expression of PARP1 in GBC, CS and CL cases compared to controls; and in GBC cases compared to CL and CS cases. The mRNA expression of PARP1 in the tumour tissue of the patients with GBC was significantly increased compared to controls [OR = 1.986, p = 0.047]. Differential mRNA expression profile clearly showed a sharp down-regulation in hOGG1, APE1, polp and PARP1 expression in GBC, CL and CS cases compared to controls; and in GBC compared to CL and CS cases. The mRNA expression of PARP1 in GBC cases compared to controls; and most significantly for XRCC1 codon280 polymorphism in GBC cases compared to controls; and between 0–30%. Hyper-methylation of XRCC1 and hOGG1 promoter was noticeable in GBC cases compared to controls.

Conclusion: The data indicates an important role of oxidative stress in the pathogenesis of gall bladder diseases and progression to GBC in NEI population; which is due to genetic, expression and epigenetic deregulations in the key genes of the BER short and long patch pathway. The data also suggests the prognostic significance of BER pathway parameters, as well as potential therapeutic targets for the disease, and hence holds clinical relevance.

Disclosure of Interest: S. Bose: No conflict of interest to declare N. Singh: No conflict of interest to declare D. Tiwari: No conflict of interest to declare R. Sultana: No conflict of interest to declare R. Borkotoky: No conflict of interest to declare A.K. Saikia: No conflict of interest to declare N. Das: No conflict of interest to declare S.N. Kazim: No conflict of interest to declare

P1394 THE DEVELOPMENT OF NON-INVASIVE MOLECULAR DIAGNOSIS OF GALLBLADDER CANCER BY BILE JUICE-LIQUID BIOPSYP

H. Kinugasa1, K. Nousu2, S. Akó3, K. Matsuomo2, H. Kató2, H. Okada2

1 Internal Medicine, Hiroshima City Hiroshima Citizens Hospital, Hiroshima/Japan
2 Dept. Of Gastroenterology, Okayama University, Okayama/Japan

Contact E-mail Address: gyacy14@yahoo.co.jp

Introduction: Gallbladder cancer (GBCa) is often diagnosed at advanced stage due to asymptomatic disease. To overcome the weakness of current methods for the diagnosis of GBCa, we focus on the possibility of “liquid biopsy” with bile juice on the concept of non-invasive diagnostic method of early stage tumor DNA in blood. To achieve good treatment effect in future, so called “precision medicine” approach based on the character of the each tumor is mandatory.

Aims & Methods: Thirty patients with GBCa were enrolled in this study. Bile juice obtained from 24 of 30 patients was analyzed for mutations of 50 oncogenes (Cancer panel; Haloplex, Agilent Technology) by next generation sequencing (NGS; Illumina, San Diego, CA, USA). Tumor tissues from 20 of 30 patients were analyzed as well as bile juice. Each sample was obtained prior to the
treatment. As negative controls, 19 non-GBCa bile juice and 33 non-GBCa tissue samples were analyzed for mutations of 50 oncogenes in the same way.

Results: Mutations in tumor could be detected in bile juice using NGS. Liquid biopsy with bile juice may help us to diagnose GBCa because of high PPV (100%). It may allow us to make new genetic diagnosis of GBCa.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
warranted ablative technique with direct effect to local tumor have been developed to improve the duration of self-expandable metal stents (SEMS) in the unresectable malignant biliary obstruction. However, there is the concern for the complication such as bile duct perforation or bleeding because the ideal power setting of RFA catheter is a bipolar device and has a temperature sensor within the distal tip, therefore it has a characteristic of target temperature controlled mode. Nine female pigs were divided into three groups according to RFA time variation (60, 90 and 120 seconds) with the same power setting (10 watts) and RFA target temperature (80°C). All pigs underwent endoscopic retrograde cholangiography (ERC) and intraductal cholangiography (IAC). Additional cholangiography was taken immediately after RFA and then a plastic stent was inserted. All the pigs were humanely sacrificed 24 hours after the intraductal RFA. Necropsy was performed and the common bile duct was sectioned for histologic analysis. The ERC and application of the intraductal RFA was successful in all pigs and ERC and IAC showed statistical significance of neoplastic potential of GBP in the modeling group. The predictive model for the probability of neoplasia was fitted from the training set using the logistic regression method equipped with backward elimination with significant level for removal of P > 0.05 for variable selection. The performance of a fitted prediction model was evaluated by the area under the curve (AUC) of a receiver operating characteristic (ROC) curve. A cutoff value of the fitted risk score was chosen by the Youden Index.

Conclusion: Clinical factors of older age, single lesion, sessile shape, and ppv size showed statistical significance of neoplastic potential of GBP in the modeling group. A predictive model for neoplastic potential of GBP was constructed utilizing the statistical outcome of the modeling group. Statistical validation was performed with the validation group to determine the optimal clinical sensitivity and specificity of the predictive model. Optimal cut-off value for neoplastic potential was 7.46%. *Probability of Neoplastic GBP poly = e^([−2.7182]/[1+e^([−2.7182][Size])]. Where e is the base of the natural logarithm and P (predictive score) = −7.3633 x 0.0374 x [Age] + 0.6667 x [Number] + 1.5784 x [Sex] + 0.2189 x [Size].

Conclusion: The predictive model for neoplastic potential of GBP may support clinical decision before cholecystectomy. Disclosure of Interest: All authors have declared no conflicts of interest.
DATABASE MANAGEMENT OF PANCREATOBILIARY DISORDERS: RESULTS P1399 DIGITAL, SINGLE-OPERATOR remain active years after surgery. Novel accurate diagnostic tests for IAC might number of liver and bile duct resections during the last three decades. There was Benign biliary disorders mimicking PHC have led to a considerable treatment. evaluated, 9 had ongoing active IgG4-RD requiring immunosuppressive sclerosing inflammation. Out of 12 patients with benign disease that were re-evaluated by a pathologist and scored according to the interna-tional pathological consensus criteria for IgG4-RD. Patients with benign disease on histological examination. 45% (21/47) of patients with benign 

PERIHILAR CHOLANGIOCARCINOMA: A PERSISTENT DILEMMA P1398 IGG4-ASSOCIATED CHOLANGITIS MIMICKING Our, so far the only full series analysis. The sensitivity and diagnostic accuracy of d-SOC guided biopsies for malignancy were 78.3% (95%CI, 56.3– 92.5), 96.4% (81.6–99.9) and 83.3% (70.7–92.1). The diagnostic accuracy of visual inspection was not statistically influenced by the presence of biliary stent (Yates’ χ²). Of 63 patients attended for d-SOC-guided stone therapy, a complete intraductal clearance was achieved in one session in 37 and in two sessions in further 10 patients, respectively and the overall success rate was 77%. A total of 11 patients (11/166; 6.6%) experienced an adverse event (cholangitis n = 6, pancreatitis n = 3, perforation n = 2), one patient with severe cholangitis died. The incidence of cholangitis was higher among patients who had received prophylactic antibiotics (n = 5) compared to those who had not received it (n = 1). The difference was significant (n = 5, n = 1, p<0.05). The sensitivity and diagnostic accuracy of d-SOC guided biopsies for IAC was 79.4% (95%CI, 62.9–93.2) and 90.6% (86.3–95.1) respectively. The new generation of d-SOC shows that (1) It provides high diagnostic yield in patients with undetermined biliary stenosis; (2) The SOC directed biopsies have a high diagnostic accuracy; (3) d-SOC guided stone lithotripsy is effective in three quarters of patients and (4) Some adverse events may occur and prophylactic antibiotics may not be effective in preventing post-d-SOC cholangitis. Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: Our aim is to assess the incidence of Immunoglobulin G4-associated cholangitis (IAC) in patients resected for presumed perihilar cholan-giocarcinoma (PHC). All patients that underwent resection for presumed PHC at our institution between 1984 and 2015 were included. Benign histological speci-mens were re-evaluated by a pathologist and scored according to the interna-tional pathological consensus criteria for IgG4-RD. Patients with benign disease who were still alive were re-evaluated to assess IgG4 serum levels and IgG4/IgG RNA ratio to detect activity of IAC. Results: Between 1984 and 2015, 321 patients underwent liver and bile duct resections for presumed PHC. Of all patients 155 (47/321) were found to have benign disease on histological examination. 45% (21/47) of patients with benign disease had evidence of IAC after surgery based on histological criteria (n = 17) or laboratory parameters (n = 4). The remaining specimens showed unclassified sclerosing inflammation. Out of 12 patients with benign disease that were re-evaluated, 9 had ongoing active IgG4-RD requiring immunosuppressive treatment.

Conclusion: Benign single-operator cholangioscopy may have led to a considerable number of liver and bile duct resections during the last three decades. There was evidence of IAC in 45% of these patients. When left untreated, IgG4-RD can remain active years after surgery. Novel accurate diagnostic tests for IAC might reduce misdiagnosis and unnecessary surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: The aim of this retrospective analysis of prospective case series from the Czech and Slovak (n = 95) setting is to assess (1) diagnostic yield of d-SOC visual diagnosis and biopsies in patients with undetermined biliary strictures; (2) the efficacy of d-SOC directed treatment of difficult lithiasis and (3) to analyze procedure related adverse events (AEs). The primary outcomes were (1) sensitivity and specificity for malignancy without biopsies (2) achievement of a complete duct clearance in patients with diffi-cult lithiasis (3) procedure-related AEs. Results: A total of 150 patients underwent 166 d-SOC procedures (165 cholan-gioscopy and 1 pancreatoscopy); 81 (48.5%) for diagnostic intents (with biopsy in 66/81 patients (81.5%), and 85 (51.2%) for therapeutic intents (1 patient had pancreaticolithiasis). The most frequent indication for diagnostic d-SOC was undetermined stenosis (n = 59). Reliable views of a target lesion were obtained in all patients. The sensitivity, specificity and diagnostic accuracy of d-SOC for visual diagnosis of malignant lesion was 88.9% (95%CI, 70.8–97.7), 81.2% (65.6–92.3) and 84.6% (73.5–92.4). The mean number of biopsies obtained per patient was 4 (range 1–13) and the specimen was adequate for histopathological assessment. The sensitivity and specificity of d-SOC for malignancy was 78.3% (95%CI, 56.3– 92.5), 96.4% (81.6–99.9) and 83.3% (70.7–92.1). The diagnostic accuracy of visual inspection was not statistically influenced by the presence of biliary stent (Yates’ χ²). Of 63 patients attended for d-SOC-guided stone therapy, a complete intraductal clearance was achieved in one session in 37 and in two sessions in further 10 patients, respectively and the overall success rate was 77%. A total of 11 patients (11/166; 6.6%) experienced an adverse event (cholangitis n = 6, pancreatitis n = 3, perforation n = 2), one patient with severe cholangitis died. The incidence of cholangitis was higher among patients who had received prophylactic antibiotics (n = 5) compared to those who had not received it (n = 1). The difference was significant (n = 5, n = 1, p<0.05). The sensitivity and diagnostic accuracy of d-SOC guided biopsies for IAC was 79.4% (95%CI, 62.9–93.2) and 90.6% (86.3–95.1) respectively. The new generation of d-SOC shows that (1) It provides high diagnostic yield in patients with undetermined biliary stenosis; (2) The SOC directed biopsies have a high diagnostic accuracy; (3) d-SOC guided stone lithotripsy is effective in three quarters of patients and (4) Some adverse events may occur and prophylactic antibiotics may not be effective in preventing post-d-SOC cholangitis. Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: The aim of this retrospective analysis of prospective case series from the Czech and Slovak (n = 95) setting is to assess (1) diagnostic yield of d-SOC visual diagnosis and biopsies in patients with undetermined biliary strictures; (2) the efficacy of d-SOC directed treatment of difficult lithiasis and (3) to analyze procedure related adverse events (AEs). The primary outcomes were (1) sensitivity and specificity for malignancy without biopsies (2) achievement of a complete duct clearance in patients with diffi-cult lithiasis (3) procedure-related AEs. Results: A total of 150 patients underwent 166 d-SOC procedures (165 cholan-gioscopy and 1 pancreatoscopy); 81 (48.5%) for diagnostic intents (with biopsy in 66/81 patients (81.5%), and 85 (51.2%) for therapeutic intents (1 patient had pancreaticolithiasis). The most frequent indication for diagnostic d-SOC was undetermined stenosis (n = 59). Reliable views of a target lesion were obtained in all patients. The sensitivity, specificity and diagnostic accuracy of d-SOC for visual diagnosis of malignant lesion was 88.9% (95%CI, 70.8–97.7), 81.2% (65.6–92.3) and 84.6% (73.5–92.4). The mean number of biopsies obtained per patient was 4 (range 1–13) and the specimen was adequate for histopathological assessment. The sensitivity and specificity of d-SOC for malignancy was 78.3% (95%CI, 56.3– 92.5), 96.4% (81.6–99.9) and 83.3% (70.7–92.1). The diagnostic accuracy of visual inspection was not statistically influenced by the presence of biliary stent (Yates’ χ²). Of 63 patients attended for d-SOC-guided stone therapy, a complete intraductal clearance was achieved in one session in 37 and in two sessions in further 10 patients, respectively and the overall success rate was 77%. A total of 11 patients (11/166; 6.6%) experienced an adverse event (cholangitis n = 6, pancreatitis n = 3, perforation n = 2), one patient with severe cholangitis died. The incidence of cholangitis was higher among patients who had received prophylactic antibiotics (n = 5) compared to those who had not received it (n = 1). The difference was significant (n = 5, n = 1, p<0.05). The sensitivity and diagnostic accuracy of d-SOC guided biopsies for IAC was 79.4% (95%CI, 62.9–93.2) and 90.6% (86.3–95.1) respectively. The new generation of d-SOC shows that (1) It provides high diagnostic yield in patients with undetermined biliary stenosis; (2) The SOC directed biopsies have a high diagnostic accuracy; (3) d-SOC guided stone lithotripsy is effective in three quarters of patients and (4) Some adverse events may occur and prophylactic antibiotics may not be effective in preventing post-d-SOC cholangitis. Disclosure of Interest: All authors have declared no conflicts of interest.

References
Cholangiocarcinoma control Significance test

<table>
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<th>Sex</th>
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<th>control</th>
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<tr>
<td>Age</td>
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<tr>
<td>Cr</td>
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</table>

Conclusion: The results from this study suggest that cholangiocarcinoma in the Nile Delta region is significantly associated with high serum levels of heavy metals especially Cadmium and lead.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Primary outcome was the rate of endoscopic reintervention before surgery. Secondary outcomes were post-operative complications, hospital readmission, overall pancreatic fistula, overall biliary anastomotic leak, overall postoperative mortality. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Three RCTs and five non-RCTs were selected including 909 patients. Of these, 300 patients (33%) were treated with SEMS and 609 (67%) with plastic stents. The rate of endoscopic reinterventions after PBD was significantly lower in the metallic stent group compared to the plastic stent group (p = 0.0001). The rate of postoperative pancreatic fistula was significantly lower in the metal stent group (OR 0.44; 95% CI 0.20–0.96; p = 0.04). The overall pancreatic anastomotic leak was significantly lower in the metal stent group (OR 0.44; 95% CI 0.20–0.96; p = 0.04). The rate of postoperative surgical complications, hospital readmission, overall biliary anastomotic fistula and postoperative mortality did not differ between the two groups.

Conclusion: Metal stents are more effective than plastic and should be preferred when early surgery without PBD is not feasible. However, more RCTS are needed before a firm conclusion could be made.

Disclosure of Interest: All authors have declared no conflicts of interest.
Splenic vein, portal vein and superior mesenteric vein involvement were seen in vessels were involved in 19 (73.1%), 3 (11.5%) and 4 (15.4%) patients respectively. and mortality. None of the patients with SVT were given anticoagulation.

Aims & Methods: These patients were subjected to graphy (CECT) abdomen for presence of SVT. These patients were subjected to 2016 were prospectively evaluated with contrast enhanced computerized tomo-

Introduction: Extent of SVT in patients with AP as well as role of trombophilia in causation of factors, outcome and natural history. Coagulation abnormality has been impli-

Results: Factor V Leiden mutation analysis was done in 33 patients (14 with 5 (11.9%) patients respectively. Anticardiolipin antibody was negative in all the number of patients with SVT than those without SVT (96.2% vs 78.6%, and 92.3% vs 67.1%, respectively). Coagulation analysis was absence of necrosis, severity, organ failure, need for intervention and mortality. None of the patients with SVT were given anticoagulation. Follow-up ultrasound Doppler was performed to look for the status of SVT.

Results: Nine hundred patients with AP (73 males, mean age 31.85 ± 13.34 years) were evaluated of which 26 (27.1%) had SVT. Simple vessel, two vessels and three vessels were involved in 19 (73.1%), (3.115%) and 4 (15.4%) patients respectively.

Conclusion: SVT in AP is more common in patient with necrotizing pancreatitis and higher CTST and MCTSI indices suggesting that local inflammation plays a major role in its causation. Thrombophilia in some form is seen in one third of the patients with AP but does not increase the risk of AP. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Current methods of risk stratification in AP have a limited value, as they are not able to predict the severity of AP in early phase of the disease. Evaluation of simple attainable potential prognostic parameters obtained at admission (or not later than 6–12 hours after-wards) from patients diagnosed with AP will be performed to assess their potential correlation with the disease severity. Approximately 1200 (900 + 300) patients from multiple centers will be enrolled into this trial using the Registry. This is an observational, multicenter, prospective cohort study for establishing a simple, easy and accurate clinical scoring system for early prognostication of acute pancreatitis.

Aims & Methods: We aimed to create a new scoring system, which can predict the severity of AP in early phase of the disease. Evaluation of simple attainable potential prognostic parameters obtained at admission (or not later than 6–12 hours after-wards) from patients diagnosed with AP will be performed to assess their potential correlation with the disease severity. Approximately 1200 (900 + 300) patients from multiple centers will be enrolled into this trial using the Registry. This is an observational, prospective cohort study (in the care or services that patients receive will not be altered); therefore it has a relatively low-risk. The study has an ethical approval by the National Hungarian Ethical Authority (ETT TUKEB). From multiple centers will be enrolled into this trial using the Registry. This includes all patients admitted with AP from January 2003 to December 2016, in a tertiary referral centre. Demographic and clinical variables from patients diagnosed with AP will be performed to assess their potential correlation with the disease severity.

Conclusion: Our data suggest a better efficacy of local antibiotics in the treatment of infected WON compared to systemic antibiotics. The local instillation of antibiotics need to overcome a number of limiting steps. First, antibiotics need to cross the capillary endothelium. Thereafter, antibiotics must diffuse to the microbial pathogens. The anti-microbial efficacies of local and systemic antibiotics were evaluated using uni- and multivariate logistic regression analyses and Kruskal-Wallis test by stratification of the isolates in sensitive versus not sensitive/antibiotics not given.

Results: Ninety-one patients were included. At the first drainage 81 (86%) patients had infected and 10 sterile WON. A total of 139 isolates were found at the first drainage. Most patients were infected with enterococci (44%) or other gram-positive cocci. More than a quarter of the infected patients had fungal species cultured. The infected patients often had polymicrobial infections (56%). At the second culture 152 isolates were found. Neither local nor systemic antibiotics were associated with the eradication of microbes between first and second culture. Between second and third culture, the use of local antibiotics was associated with the eradication of microbes (OR = 2.54, P = 0.011), but not systemic antibiotics (P = 0.33) (Table). Between first and second culture 12 patients with fungal infections were treated with local amphotericin B. In all 12 patients the fungus was eradicated. After second culture 20 patients were treated local amphotericin B and in 17 (85%) patients the fungus was eliminated at the third culture.

Aims & Methods: The aim was to evaluate the efficacy of local instillation of antibiotics into walled-off pancreatic necrosis. Between 2012 and 2016 we evaluated all patients treated with endoscopic transmural drainage and necrocytostomy (EDTN) and concomitant local instillation of antibiotics. We added antibiotics (either gentamicin, vancomycin, or amphotericin B) to the irrigation fluid according to the microbiological findings. The anti-microbial efficacies of local and systemic antibiotics were evaluated using uni- and multivariate logistic regression analyses and Kruskal-Wallis test by stratification of the isolates in sensitive versus not sensitive/antibiotics not given.

Results: Ninety-one patients were included. At the first drainage 81 (86%) patients had infected and 10 sterile WON. A total of 139 isolates were found at the first drainage. Most patients were infected with enterococci (44%) or other gram-positive cocci. More than a quarter of the infected patients had fungal species cultured. The infected patients often had polymicrobial infections (56%). At the second culture 152 isolates were found. Neither local nor systemic antibiotics were associated with the eradication of microbes between first and second culture. Between second and third culture, the use of local antibiotics was associated with the eradication of microbes (OR = 2.54, P = 0.011), but not systemic antibiotics (P = 0.33) (Table). Between first and second culture 12 patients with fungal infections were treated with local amphotericin B. In all 12 patients the fungus was eradicated. After second culture 20 patients were treated local amphotericin B and in 17 (85%) patients the fungus was eliminated at the third culture.

Table: EASY score may be an easy and accurate system to evaluate the early severity of AP in early phase of disease. Evaluation of simple attainable potential prognostic parameters obtained at admission (or not later than 6–12 hours after-wards) from patients diagnosed with AP will be performed to assess their potential correlation with the disease severity. Approximately 1200 (900 + 300) patients from multiple centers will be enrolled into this trial using the Registry. This is an observational, multicenter, prospective cohort study for establishing a simple, easy and accurate clinical scoring system for early prognostication of acute pancreatitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1412 CORONARY DISEASE AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE ARE NOT ASSOCIATED WITH WORSE OUTCOME IN ACUTE PANCREATIS

J.R. Carvalho, P. Santos, S. Fernandes, M. Moura, T. Antunes, J. Velosa

Department Of Gastroenterology And Hepatology, North Lisbon Hospital Center, University of Lisbon, Portugal; Lisbon, Portugal

Contact E-mail Address: joana.rita.carvalho@gmail.com

Introduction: Pancreatitis is a disease of protein manifestations. In its more severe form, involvement of any organ is possible. Cardiovascular and respiratory failure are possible and feared complications.

Aims & Methods: The aim of this study was to evaluate the effect of chronic ischemic heart disease and chronic obstructive pulmonary disease (COPD) in the outcome of acute pancreatitis (AP). In our population. Retrospective cohort study that included all patients admitted with AP from January 2003 to December 2016, in a tertiary referral center. Demographic and clinical variables were analyzed by logistic regression (SPSS v23). Clinical outcomes included organ failure (OF), persistent OF (≥ 48 h), intensive care unit (ICU) admission and mortality.

Results: A total of 553 patients with AP were included, 58.4% male, median age 80 (18–98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.3%). Twenty-three percent (n = 129) developed OF (in 43% persistent) and 26.8% (n = 148) were admitted in ICU. Mortality rate was 5.6% (n = 31). Fifty-six patients (10.1%) had previous history of coronary disease and 5.1% (n = 28) had been diagnosed with COPD. The presence of coronary disease and COPD were not associated with higher Ranson’s score (≥ 3), p = 0.076 and p = 0.959, respectively. No association was found between previous history of coronary disease and the development of OF (p = 0.525), persistent OF (p = 0.287), need for ICU admission (p = 0.115) and mortality (p = 0.262). There was also no association found between previous history of OF and the development of OF (p = 0.803), persistent OF (p = 0.588), need for ICU admission (p = 0.514) and mortality (p = 0.720). At multivariate analysis (correcting for age and gender) coronary disease and COPD were not independent predictors of worse outcome in AP.

Conclusion: In our population, previous history of coronary disease and COPD were not predictors of worse outcome in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1411 EVALUATION OF LOCAL INSTILLATION OF ANTIBIOTICS IN WALLED-OFF PANCREATIC NECROSIS

M. Werge, S. Roug, E. Feldager, J. D. Knudsen, L.L. Glud, S. Novovic, P. N. Schmidt

1Department Of Gastroenterology And Gastrointestinal Surgery, Hvidovre Hospital, Copenhagen, Hvidovre/Denmark; 2Digestive Disease Centre, Bispebjerg Hospital, University of Copenhagen, Copenhagen NV/Denmark; 3Department Of Clinical Microbiology, Hvidovre Hospital, University of Copenhagen, Hvidovre/Denmark

Contact E-mail Address: hkp835@alumni.ku.dk

Introduction: Infected walled-off pancreatic necrosis (WON) is treated with antibiotics in order to reduce the bacterial loads in WON, systemically administered antibiotics need to overcome a number of limiting steps. First, antibiotics need to cross the capillary endothelium. Thereafter, antibiotics must diffuse across the interstitial space and finally, the capsule surrounding the WON must be crossed. Therefore, the penetration of the intravenously administered antibiotics into WON can be questioned. Using local antibiotics should theoretically increase the antibiotic concentrations in the necrotic tissue and the efficacy.
P1413 WORSE OUTCOMES IN ACUTE PANCREATITIS IN PATIENTS WITH TYPE-2 DIABETES MELITUS

P. Santos, J.R. Carvalho, S. Fernandes, M. Moura, T. Antunes, J. Velosa
Gastroenterologia E Hepatologia, Hospital de Santa Maria - Centro Hospitalar Lisboa Norte, Lisboa/Lisbon

Contact E-mail Address: patricia.sants@hotmail.com

Introduction: Predicting severe pancreatitis is important for early aggressive management of patients with acute pancreatitis (AP). Despite the established role of type-2 diabetes mellitus (DM) in the risk of AP, the impact of DM on the clinical outcome in AP has not been fully elucidated.

Aims & Methods: Retrospective study including hospital admissions between January 2003 and December 2016 in a single tertiary referral center. Clinical outcomes included organ failure (OF), persistent OF (>48h) admission to intensive care unit (ICU) and mortality. Variables were analysed by logistic regression (SPSS v23.0). The objective of this study was to assess the risk of mortality and severity in AP among patients with type-2 DM.

Results: A total of 553 patients (58.4% male) with AP were included, median age 80 (18–98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.5%). Twenty three percent developed OF (in 43% persistent) and 5.6% (n=30) died. There were 127 AP patients (23.0%) with type-2 DM. Type-2 DM were not associated with higher Ranson's score. There was an association between DM and development of OF (OR 3.17, CI95% 1.88-5.37, p < 0.001), persistence (OR 45.1, CI95% 18.7-108.9, p < 0.001), ICU admission (OR 12.3, CI95% 5.4-29.1, p = 0.001), and mortality (OR 17.1, CI95% 6.8-42.8, p < 0.001). At multivariate analysis DM was an independent predictor of OF development and ICU admission.

Conclusion: In our population, Type-2 DM was associated with severity and increased mortality in patients with AP. Our findings provide evidence of the potential role of DM in the management of severe AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1414 ACUTE PANCREATITIS IN LIVER TRANSPLANT RECIPIENTS: INCIDENCE AND OUTCOME

P. Macina1, K. Poe2, P. Trunecka3, J. Spicka1, T. Huel1
1Department Of Gastroenterology And Hepatology, Institute For Clinical And Experimental Medicine, Prague/Czech Republic
2First Faculty Of Medicine, Charles University, Prague/Czech Republic
3Transplantcentre, Institute For Clinical and Experimental Medicine, Prague/Czech Republic

Contact E-mail Address: peter.macina@ikem.cz

Introduction: Acute pancreatitis (AP) is an uncommon but potentially devastating condition that may occur in patients with organ transplantation. Reported incidence ranges from 1.5 to 8% in patients undergoing liver transplantation with significant mortality.

Aims & Methods: The aim of our study was to assess the incidence, potential risk factors and outcome of AP following liver transplantation in our center. We performed a retrospective analysis of medical records of all adult patients who underwent liver transplantation in our center between September 1996 and November 2014. The diagnosis of AP was defined by combination of clinical manifestation, finding on imaging methods (CT, USG) and elevation of serum amylase and lipase.

Results: Nine hundred and sixty-seven orthotopic liver transplantations were performed in 578 males and 389 females (mean age 51 years, range 18–74). AP occurred in 18 patients (1.9%, 16 males, 2 females) and resulted in death in 5 patients (28%). According to timing of AP we recognized two clinical presentation—early AP (<1 month after liver transplantation) and late (>1 month). Four patients (22%) developed early AP, which was severe necrotizing with MODS in all cases and resulted in death in 3 of them (75%). Two of them were transplanted for fulminant hepatic failure, one for end-stage liver disease caused by diabetic hepatitis B infection and one for polycystic liver disease. Two patients were treated by surgical necrosectomy and died, the third deceased patient was treated conservatively. In the only surviving patient, a successful EUS-guided drainage of walled of pancreatic necrosis and repeated endoscopic retrograde cholangiopancreatography (ERCP) were performed in 578 males and 389 females (mean age 51 years, range 18–74). AP underwent liver transplantation in our center between September 1996 and November 2014. The diagnosis of AP was defined by combination of clinical manifestation, finding on imaging methods (CT, USG) and elevation of serum amylase and lipase.

P1415 THE IMPACT OF BILIARY SLUDGE TO DEVELOPMENT OF PAIN AND EFFICACY OF HYMEOCRомIN IN CHRONIC BILIARY PANCREATITIS

M. Okhlobystin1, K. Poc2, P. Trunecka3, J. Spicak1, T. Hucl1
1Pancreatology And Bowel Diseases, Sechenov University, Moscow/Russian Federation
2Department Of Gastro Clinic Of Internal Diseases Propaedeutic, Gastroenterology And Hepatology, First Moscow State Sechenov University, Moscow/Russian Federation
3Department Of Faculty Surgery No2 Pirogov Russian National Research Medical University (NRMU), Moscow/Russian Federation

Contact E-mail Address: okhlobystin@mail.ru

Introduction: Biliary sludge (BS) may be one of the factors, related to development of chronic pancreatitis (CP) via sphincter of Oddi dysfunction. As it was demonstrated by Okazaki K et al. in 1988, patients with biliary sludge have higher sphincter of Oddi (SO) pressure and contraction frequency vs. controls.

Aims & Methods: To assess the frequency of CP signs in patients with BS and to investigate the state of major duodenal papilla (MDP) in patients with idiopathic CP with BS by endoscopic ultrasound (EUS); to evaluate whether antispasmodics can be effective in pain relief at CP, that developed on the background of gallbladder sludge. Protocols of computer tomography, endoscopic and transgalominal ultrasound studies of over 6000 patients of gastroenterological tertiary clinic were examined. Those who had signs of BS were selected to evaluate the presence of CP and at least “mild CP” and BS. To the modified Cambridge classification. Exclusion criteria were: established etiology of CP and signs of pancreatic neoplasms. Patients, who received ursodeoxycholic acid and drugs that affect smooth muscle contractility for less than 3 month prior to the study were excluded. Thirty consecutive patients (15m, 15 f, age mean±SD: 52.8 ± 15.3), who had both BS and CP were summoned for physical examination, quality of life assessment, US-cholangioscopy and endoscopic pancreaticbiliary ultrasound. Calculation of MDP area formula: $S_{MDP}=(h_{MDP} \times w_{MDP})^{(2.172)}$ and state of MDP before and after 3 weeks of hy Gemcrомin monotherapy 400 mg tid.

Results: Signs of CP were revealed in 6.3% of BS cases. CP was most common in those who had ointment-like bile (33.3%) vs. patients with heterogeneous bile with clots –7.7% and hypoechoic particles–1.7% (chi-square 38.21, p < 0.0001). Mean $S_{MDP}$ was 14.9 ± 5.2 mm$^2$ (95%CI 10.9–18.9). $S_{MDP}$ was below the normal range (20–25 mm$^2$) in 78% of patients. $S_{MDP}$ had positive correlation to the velocity of evacuated bile according to US-cholangioscopy (r=0.042) and gallbladder contractility coefficient (r=0.817, p < 0.007). All patients with higher density of MDP at US-cholangiostomy had $S_{MDP}$ lower than the normal range and were attributed to “fibrosis” group. Only 38% of patients with CP and BS had normal MDP at EUS. Periapillary diverticula were found in 13% of the cases, papillae edema — in 38%, fibrosis — in 13%. MDP changes were associated with higher AP level and larger MDP diameter. Hy Gemcrомin monotherapy resulted in significant improvement in abdominal pain (bodily pain $t=7.92$, p = 0.0008 and bodily pain ‘scent’ of SF-36 questionnaire ($t=3.709$, p = 0.001). Dynamics of “bodily pain” score by SF-36 demonstrated significant negative correlation to the post-treatment level of abdominal pain ($r=0.395$, p = 0.037) Post-treatment pain level had significant negative correlation with $S_{MDP}$ size ($r=0.067$, p = 0.002), though no correlation of pre-treatment pain level to MDP features was found, i.e. patients with less MDP size (most of them had decreased elasticity of papilla of Vater, that was considered as indirect marker of fibrosis) had lower hy Gemcrомin efficacy.

Conclusion: BS may cause MDP changes, resulting in development of obstructive CP. Intensity of pain in biliary CP may be related to sphincter of Oddi dysfunction. Efficacy of antispasmodic therapy in these patients could be predicted by the features of MDP at pancreato/biliary EUS.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1416 RETROSPECTIVE ANALYSIS OF EXOCRINE PANCREATIC FUNCTIONALITY IN PATIENTS WITH CHRONIC PANCREATITIS

A. Brandolese1, A. Amadio1, M.C. Conti Belloccchi2, S. Di Stefano1, P. Campagnola3, N. De Pretis1, L. Bernardoni2, S.F. Crino3, A. Gabbielli3, L. Fruilioni1
1Medicine, AOUM Verona-Pancreas Center, Verona/Italy
2Gastroenterology, University of Verona, Verona/Italy
3Policlinico G.B. Rossi Dipt. di Gastroenterologia, Verona/Italy

Contact E-Mail Address: brandolezi@yahoo.it

Introduction: Pancreatic exocrine insufficiency is a late complication of chronic pancreatitis; its clinical onset is characterized by steatorrhea and weight loss, borrobygmi, flatulence, abdominal pain and malnutrition. Exocrine and endocrine pancreatic function decreases differently in various diseases (autoimmune, paradoedunal, genetic, idiopathic). It has been observed that there has been a recovery of exocrine pancreatic function in autoimmune pancreatitis. In the literature there are no studies analysing the exocrine pancreatic function over time. The fecal elastase test is a good test procedure to evaluate the exocrine pancreatic function.

Aims & Methods: The objective of the retrospective study was to re-evaluate a series of patients with chronic pancreatitis with the aim to evaluate the pancreatic exocrine function over time, in particular, by comparing the exocrine pancreatic function in subgroups of patients with different types chronic pancreatitis. Pancreatic exocrine function was estimated through fecal elastase in 143 patients with at least 2 values each (classified into normal, mild and severe exocrine pancreatic insufficiency), the first one taken at the diagnosis of chronic pancreatitis. Patients undergoing surgical pancreatic resection before the second value of fecal elastase were excluded. Etiology was classified in: biliary pancreatitis/sequelae of necrotizing pancreatitis (15), autoimmune (69), paradoedunal (15), genetic (17) and idiopathic (27).

Results: The results show a high frequency of severe exocrine pancreatic insufficiency in the moment of diagnosis of chronic pancreatitis (38%) and it appears stable over the years. Autoimmune and paradoedunal chronic pancreatitis are correlated with severe exocrine pancreatic insufficiency at diagnosis in a high percentage of cases (51% and 40%), biliary/outcomes of necrotizing pancreatitis and idiopathic pancreatitis in an intermediate (33% and 26%), while genetic in a low percentage (12%).

Conclusion: The exocrine pancreatic function in patients with autoimmune pancreatitis improved in the first five years of the disease, probably due to the efficacy of steroid/inmunosuppressive therapy. Pancreatic endocrine function was less compromised at diagnosis, but showed a progressive deterioration in the first five years. Endocrine and exocrine insufficiency were strictly correlated.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1417 "PAINLESS" CHRONIC PANCREATITIS: EPIDEMIOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERIZATION

C. Perini1, A. Amadio2, L. Bernardoni3, A. Gabbielli3, S.F. Crino3, P. Campagnola4, D. Costa1, F. Capuano3, V. Framba1, L. Fruilioni4
1Department of Gastroenterology, University of Verona, Verona/Italy
2Gastroenterology, University of Verona, Verona/Italy
3Policlinico G.B. Rossi Dipt. di Gastroenterologia, Verona/Italy
4Medicine, University of Verona Cattedra di Gastroenterologia Dept. of Medicine, Verona/Italy

Contact E-Mail Address: claudia.perini@hotmail.it

Introduction: The term "painless" chronic pancreatitis (CP) represents a specific subset of CP characterized by the lack of pancreatic pain. So far, scarcity of data has been reported in the literature about this matter and what differentiates this group of patients from those with chronic pancreatitis associated with pancreatic pain.

Aims & Methods: The aim of the present study is to characterize "painless" CP from the epidemiological, clinical, radiological, functional, and follow-up standpoint, through a comparison with other forms of chronic pancreatitis presenting with pancreatic pain. The Institutional Database of the Gastroenterology Unit of the Verona University was queried, and all chronic pancreatitis cases were retrieved. Patients were clustered based on the presence of "pancreatic-specific pain" into "painless" and "pain-associated" CP. A retrospective case-control analysis was carried out.

Results: Of 678 patients included from March 2006 to March 2016, 436 were considered eligible for the present study. Of these, 368 (84%) were affected by pain-associated CP, while 68 (16%) had "painless" CP. "Painless" patients were older (median age of 58.5±10.8 vs 42.5±15.3 y-o; p < 0.001), less frequently presenting with a history of alcohol consumption (35% vs. 55%; p < 0.001), more frequently diabetics (18% vs. 1%; p < 0.001), presenting with steatorrhea (16% vs. 2%; p < 0.001), and asymptomatic (63% vs. 2%; p < 0.001) compared to pain-associated controls. From the radiological standpoint, cases were more frequently presenting with calcifications than controls (90% vs. 68%; p < 0.001). Moreover, in most of painless cases, the CP cause remained unknown (56%). After a median follow-up of 2.6±2.3 years, the incidence of diabetes was higher in the painless cases than in controls (48% vs. 30%; p < 0.006).

Conclusion: The present study represents the first definition of "painless" CP so far reported in the literature. The "painless" CP is a distinct entity from the epidemiological, clinical, and radiological standpoint when compared to other forms of CP characterized by pain.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1418 LONG-TERM OUTCOMES OF A FULLY COVERED SELF-EXPANDABLE METAL STENT WITH ANTIMIGRATION PROPERTIES FOR EUS-GUIDED PANCREATIC DUCT DRAINAGE

1Department Of Gastroenterology, Novon Eulji Medical Center, Eulji University, Seoul/Korea, Republic of
2Department Of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul/Korea, Republic of

Contact E-Mail Address: dongwook.oh1@gmail.com

Introduction: Recently, EUS-guided pancreatic duct drainage with transmural stent (EUS-PD) has been used for patients with painful obstructive pancreatitis in whom endoscopic retrograde panreatography (ERP) has failed. Although the feasibility and safety of EUS-PD with a fully covered self-expandable metal stent (FCSEMS) has been assessed, little is known about the long-term outcomes of EUS-PD with a covered self-expandable metal stent (FCSEMS). Removability of an FCSEMS in long-term use and higher cost are the main concerns of EUS-PD compared with EUS-PD with a plastic stent.

Aims & Methods: The aim of this study is to evaluate the procedural and long-term outcomes of EUS-PD with an FCSEMS for patients with painful obstructive pancreatitis in whom endoscopic retrograde panreatography (ERP) has failed. Forty-one consecutive patients with painful obstructive pancreatitis underwent EUS-PD with an FCSEMS after ERP. Management without stent exchange was considered in malignant MPD strictures or complete MPD obstruction in benign pancreatic stricture. Technical and clinical success, adverse events, and stent patency were assessed. An endoscopic examination and CT scan was performed every 6 months to assess stent patency in benign stricture.

Results: 15 patients had malignant MPD obstruction and 26 patients had benign stricture. EUS-PD was successful in all 41 patients (technical success rate, 100%), and symptoms improved in all patients (clinical success rate, 100%). EUS-guided pancreaticojejunostomy (n=39) and pancreaticojejunostomy (n=2) were performed in malignant MPD obstruction. Pain scores improved significantly after FCSEMS placement (P < .01). Early mild-grade adverse events occurred in 5 patients (12.2%), involving distal stent fracture (n=6), stent occlusion (n=2). These patients were successfully treated endoscopically. No other adverse events related to FCSEMS, including stent migration, pancreatic sepsis, and stent-induced ductal stricture were observed during follow-up periods.
Overall mean stable duration was 412 days (range 14–1081) during mean follow-up period (2.41). Median stable duration in CP patients with malignant stenosis was 95 days (range 14–297). Mean stable duration in benign strictures was 252 days (range 121–1081). No patients with malignant strictures required FCEMSs revision or exchange during follow-up periods. FCEMSs removal and exchange was successful in benign strictures with stent dysfunction. At the end of the follow-up, two patients (5.6%) showed resolution of stricture after definite stent removal.

Conclusion: EUS-PD with an FCEMS showed excellent long-term outcomes for patients who failed conventional ERP in both malignant and benign obstructing pancreatic ducts. Endoscopic FCEMSs removal and exchange could be successful in patients with benign strictures until 3-year placement of an FCEMS. Prospective randomized trial comparing EUS-PD with FCEMSs and plastic stents may be warranted for painful obstructive pancreatitis after failed ERP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1419 MONITORING AND OPTIMIZATION OF PANCREATIC ENZYME REPLACEMENT THERAPY IN PATIENTS WITH PANCREATIC EXOCRINE INSUFFICIENCY

M. Kovacheva-Slavova1, S. Sminkovich1, J. Genov1, B. Golemanov2, M. K. Sivarat2, B. S. Mercanoglu3
1Gastroenterology, University Hospital Tsaritsa Ioanna-IsUL, Sofia/Bulgaria
2Medical Imaging, University Hospital Tsaritsa Ioanna-IsUL, Sofia/Bulgaria
3Central Laboratory Of Therapeutic Drug Management And Clinical Pharmacology, Alexandrovska University Hospital, Medical University of Sofia, Sofia/Bulgaria

Contact E-mail Address: kovacheva_mila@abv.bg

Introduction: Fundamental aspects in the treatment of pancreatic exocrine insufficiency (PEI) include pancreatic enzyme replacement therapy (PERT). Monitoring the symptoms of malabsorption as well as the nutritional markers is essential.

Aims & Methods: To follow-up patients with PERT receiving PERT and to provide normal nutritional status by optimizing the suboptimal PERT if necessary. Study enrolled 142 patients (88 males, mean age 52 years): 82 patients had chronic pancreatitis (CP), 30 acute pancreatitis (AP), 30 pancreatic cancer/pancreatic resection. 58 patients were re-monitored 6 months after adjusting suboptimal PERT if necessary. Study monitored the symptoms of maldigestion as well as the nutritional markers is essential.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1420 HUR MEDIATED POST-TRANSCRIPTIONAL REGULATION OF HO-1 AND INHIBITORS OF APOPTOSIS PROTEINS IS ASSOCIATED WITH THE POOR CLINICAL OUTCOMES AMONG PATIENTS WITH PANCREATIC CANCER

Z. Danbrauskaus, A. Gulbinas, A. Jakstaite, A. Urbaniene
Institute For Digestive Research, Lithuanian University of Health Sciences, Kaunas/Lithuania

Contact E-mail Address: zilvinas.danbrauskaus@gmail.com

Introduction: The mRNA binding protein HuR is involved in the post-transcriptional regulation of cytoprotective molecules, such as HO-2, H1 and inhibitors of apoptosis proteins (IAP1, IAP2, XIAP, survivin), and might be related to poor prognosis in numerous cancer types. However, the association of HuR, COX-2, HO-1 and IAPs family, and their impact on chemoresistance and carcinogenesis in PDAC still remain unclear.

Aims & Methods: The aim of our study was to assess the relevance and correlation of the IAP regulation by mRNA stabilizing protein HuR and HO-1 and/or COX-2 signaling pathway, and to determine the association with clinicopathological parameters and prognosis of PDAC. Data of 32 patients after pancreatectoduodenectomy undergoing adjuvant chemotherapy between 2011–2016 were analyzed. Patient’s mRNA expression levels of HuR, COX-2, HO-1, IAP1, IAP2, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Results: HO-1, COX-2, HuR, IAP1, IAP2 mRNA expression were accordingly 3-fold, 8.8-fold, 1.5-fold, 4.8-fold and 5-fold higher, while XIAP and Survivin mRNA expression were 5.8-fold and 3.4-fold lower when compared to normal pancreatic tissue. Expression of HuR was positively associated with COX-2, HO-1, IAP1, IAP2, XIAP. High expression levels of HuR were significantly correlated with higher G stage and microvascular invasion, while high levels of XIAP were negatively associated with microvascular and perineural invasion. Univariate analysis revealed that expression of HO-1 or XIAP, tumor differentiation and perineural invasion were significantly associated with overall survival (OS) of PDAC patients. In multivariate analysis, high levels of HuR, lymph-node metastases, tumor differentiation and perineural invasion were independently correlated with lower OS in patients with PDAC.

Conclusion: Our results suggested that upregulation of HuR in PDAC patients were significantly related with poor outcome. Even though, significant correlation with IAP proteins in PDAC was noticed, more data is needed to analyze the mechanism underlying HuR and IAP interaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1421 HYPOXIA INDUCED HIF1A-MEDIATED DIFFERENTIAL O-GALNAc GYCOLSYLATION MODULATES SIGNALING PATHWAYS IN PANCREATIC CANCER

B. Mercanoglu, B. T. Hofmann, C. Güngör, J.R. Izbicki, M. Bockhorn, G. Wolters-Eisfeld
Department Of General, Visceral And Thoracic Surgery, University Medical Center Hamburg-Eppendorf, Hamburg/Germany

Contact E-mail Address: ge.wolters@uke.de

Introduction: Hypoxia-induced reprogramming of cell energy metabolism and changes in glycosylation are hallmarks of cancer promoting the induction of an invasive and treatment-resistant phenotype, triggering metastases at an early stage of tumor development.1 We examined the impact of hypoxia on O-GalNAc glycosylation in human HEK293, PDAC cell lines and clinical specimens and its link to cancer progression.

Aims & Methods: We profiled the expression of 88 glycosylation related genes by qPCR in HEK293 cells subjected to hypoxia either induced by 1% O2 or 200 mM CoCl2 identifying key O-GalNAc glycosyltransferases downregulated. Functional assays and glycoprotein analysis displayed a pronounced rate of O-GalNAc modified cytosolic proteins derived from hypoxia-treated cells and PDAC specimens. Glycosidase assays could validate specificity of detection method used. Aberrant glyctype could be induced by IFH pathway activator

Conclusion: Proper follow-up and correction of suboptimal PERT as well as management of the risk of severe malnutrition complications and associated morbidity and mortality by ensuring optimal therapeutic results and better quality of life.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1422 THE EXPRESSION AND FUNCTION OF MIR-195 IN PANCREATIC CANCER: THE EXPRESSION AND FUNCTION OF MIR-195 IN PANCREATIC CANCER
Y. Zhang, Q. Zhan
Digestive Department, Wuxi People’s Hospital, Wuxi/China
Contact E-mail Address: zhangq33@163.com

Introduction: Pancreatic cancer is one of the more common malignant tumors in digestive system. The mortality and survival rate are then about 5-6% of pancreatic cancer. Pancreatic cancer with poor prognosis and survival rate is low, due to the early clinical symptom is not easy to find, have a high transfer possible, and the operation difficulty, radiotherapy and chemotherapy is not sensitive. Radical surgical resection is the only opportunity to pancreatic cancer patients get cure. It is an urgent problem for us to explore new effective treatment of pancreatic cancer.

Aims & Methods: Pancreatic cancer is a highly malignant tumor and fourth leading cause of cancer-related death in the world. The median survival after diagnosis is 2-8 months, and approximately 3-6% of all patients with pancreatic cancer survive 5 years after diagnosis. This is mostly due to the fact that it is diagnosed at a stage when it is either locally advanced or has already metastasized to other organs. Hence, there is a paramount need to understand the molecular mechanisms underlying its initiation, progression and therapy. The recent discovery of microRNAs (miRNAs) has revealed a novel mechanism of gene regulation and provided new ways for cancer research. MicroRNAs are small, non-coding RNA molecules, which regulate the gene expression at post-transcriptional level. It is widely reported that miRNAs can act as oncogene or tumor suppressor gene. MIR-195 has been recognized as a tumor suppressor gene and cell growth.

Result: The purpose of this experiment was to explore the regulation role of miR-195 in PC development process. We measured miR-195 expression in three pancreatic cancer cells (PANC-1, SW-1990 PANC 03.27) by QR-T - PCR, and HPDE cells were used as a control. We performed study of miR-195 by transfecting PANC-1 cells with miR-195 mimics. We used miRNA QR-T - PCR to study the transfection efficiency of miR-195 mimic. The behavior studies of PANC-1 cells transfected with miR-195 and negative control were analyzed by CCK-8 proliferation assay, cell cycle, cell migration and invasion assay. We performed Real-Time PCR and western blot to detect the expression of CDK4 Cyclin E1 in PANC-1 cells which were transfected with miR-195 mimics and negative control.

Conclusion: We found that miR-195 is decreased in three pancreatic cancer cells (PANC-1 SW-1990 PANC 03.27). We also found that over-expression of miR-195 could suppress the proliferation, migration, invasion and cell cycle of PANC-1 cells. That means the malignancy potential of PANC-1 cells is inhibited by miR-195.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1424 INTEGRIN A11 IS SPECIFICALLY EXPRESSED IN PANCREATIC TUMOR STROMA AND A KEY TARGET IN REGULATION OF PANCREATIC TUMOR STROMAL MYOFIBROBLASTS
J. Schnitter1, R. Bamsal1, G. Storm2, A. Osmann1, J. Prakash1
1Biomaterials Science & Technology; Targeted Therapeutics, University of Twente, Enschede/Netherlands
2Department Of Oncology-pathology, Karolinska Institute, Stockholm/Sweden
Contact E-mail Address: jschnittert@utwente.nl

Introduction: The progression of pancreatic ductal adenocarcinoma (PDAC) is promoted by its highly abundant tumor stroma. As one of the main components of the tumor stroma human pancreatic stellate cells (hPSCs), precursors of pancreatic tumor stromal myofibroblasts (CAFs), support PDAC progression by enhancing tumor cell growth, invasion and metastasis [1]. The collagen binding transmembrane receptor integrin α11 (ITGA11) is known to be overexpressed in myofibroblasts [2].

Aims & Methods: The aim of the presented study was to investigate the expression of ITGA11 in human PDAC and to study the role of ITGA11 in CAF regulation. ITGA11 expression was evaluated using immunostaining on human PDAC sections and various cell lines. The relationship between ITGA11 expression and activation was assessed in PDAC cell lines. The expression of ITGA11 was also analyzed in a patient derived PDAC xenograft model.

Results: The expression of ITGA11 in human PDAC specimens was positively correlated with ITGA11 expression and activation. In this study we have for the first time stained ITGA11 in human PDAC tumors. The quantitative gene and protein expression analyses of ITGA11 in subcutaneous tumors, positively correlated with the expression of the CAF markers α-SMA, Col1a1 and PDGFβR. Activation of hPSCs with TGF-β or conditioned medium from P1-1 resulted in the significant upregulation of ITGA11 and α-SMA. Stable ITGA11 knockdown, mediated by shRNA, significantly inhibited hPSC differentiation, migration potential, contractility and cell growth.
P1425 EFFECT OF ACOUSTIC CAVITATION ON A THREE-DIMENSIONAL CULTURE MODEL OF PANCREATIC ADENOCARCINOMA


1. Endoscopy And Digestive Oncology Unit, Hotel Cochin, Paris/France
2. Department Of Digestive Diseases, APHP Saint Antoine Hospital, Paris/France
3. Inserm U1032, LabTao, Lyon/France
4. ITAV, Toulouse/France
5. Equipe Stress Oxidant, INSERM U1016, Paris/France
6. Hopital Cochin Dept. of Gastroenterology, Paris/France

Contact Email Address: benoit.bordacahar@gmail.com

Introduction: The dismal prognosis of pancreatic ductal adenocarcinoma (PDAC) is mainly due to chemoresistance linked to the tumor microenvironment. Recent developments in the field of ultrasound (US)-induced cavitation could help overcome chemoresistance by break microenvironmental barriers and increase cytotoxic drug availability. Three-dimensional (3D) culture in the form of spheroids is a useful model for reproducing multicellular resistance and analyzing the effects of cavitation.

Aims & Methods: The objective of this work was to study the effects of acoustic cavitation on a model of PDAC spheroids and to investigate possible potentiality of chemotherapy by US. CAPAN-2 PDAC cell line-derived spheroids were cultured as previously described by Iwasa et al. Four conditions, i.e. control, 400 mM-gemcitabine-based chemotherapy (CT) alone, US alone, CT-US combination (n=12 spheroids per condition), were studied. Experiments were carried out to optimize US settings, in order to observe the occurrence of controlled acoustic cavitation. Comparisons between groups were based on proliferation and growth. Proliferation was evaluated 24 hours after treatment(s) by Uptiblue. Growth was assessed by diameter measurement on light microscopy at day 7 and day 10.

Results: Compared to the control group, cell proliferation was decreased in spheroids treated with CT (p<0.0001), but not with US alone. Proliferation was also further impaired in spheroids treated with US combination compared to those treated with CT alone (p<0.0001), but this synergistic effect of US and CT did not impact growth of spheroid, meaning that spheroid diameter did not decrease after US-CT compared to CT alone.

Conclusion: This study shows the feasibility of applying an ultrasonic treatment (acoustic cavitation) in a three-dimensional culture model of PDAC. The combination of CT and ultrasonic cavitation synergistically reduced cell proliferation. Further analysis of the cytotoxic effects of acoustic cavitation on PDAC spheroids is in progress.

Disclosure of Interest: All authors have declared no conflicts of interest.

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C. D. Nava1, R. Coudry2, M.C. Cesar Machado3, L. Meirelles2, M.D.C. Gonçalves2, G. Ferreira Paduani1, J. G. Guerra1, J.C. Ardengh1

1. Department Of Hepatobiliary-pancreatic Surgery, Juntendo University, Tokyo/Japan
2. Department Of Radiology, Juntendo University, tokyo/Japan
3. Department Of Hepatobiliary-pancreatic Surgery, Juntendo University, Tokyo/Japan

Contact Email Address: tomishim@juntendo.ac.jp

Introduction: Because of the progression of systemic chemotherapies (CT) for locally-advanced pancreatic cancer (LA-PC), chemoradiotherapy (CRT) was selected for limited case. However, very long survival cases were reported in CRT and detection of prognostic factors were warranted. In this analysis, we analyzed the LA-PC cases received CRT compared with CT.

Aims & Methods: Gemcitabine (GEM) and S-1 combination chemoradiotherapy (GS-CRT) was performed according to our previous Phase 1 trial (Journal of Japan Pancreas Society 2010). Till March 2016, 30 LA-PC cases received GS-CRT, and the selection criteria were LA-PC with 1) pathological diagnosis, 2) laço therapy (CA, SMA, CCA, PV), 3) radiologic invasion (3) allogeneic and concomitant GRP without multiple primary cancer, 4) unexecuted autotumor therapy. The chemotherapy in CRT administration of GEM (200mg/m²) once a week for 5 weeks and total dose was 50.4Gy (Total 28 times). As after treatment, GEM 1000mg/m² was continued until PD. The patients of CT group were also recruited by the same criteria. One of the regimens among GEM alone, S-1 alone and GEM+S-1 was selected for the primary treatment, and total 26 cases were implemented in more than 2 courses.

Results: Baseline characteristics in CRT and CT group were median age (62, 72.5: p = 0.004), male (20, 12: ns) and tumor location (Ph/Pb (17/13), 16/10; ns), respectively. Efficacy were disease control rate (DCR) in 3 months after treatment (90, 57.7%; p = 0.01), response rate (RR) (26.7%, 0%: p = 0.005) and conversion surgery (10%, 0%; ns). There were significant differences in progression free survival (PFS) (6 months, 5 months; p = 0.002) and overall survival (OS) (13M, 9M: p = 0.0165), respectively. The cases who survived for 18 months and longer were significantly (p = 0.0495) more in CRT (43.3%) than CT group (19.2%). Grade 3/4 adverse events in CRT group were 13 cases of neutropenia (G4-3 cases) and one case of gastrointestinal symptom, and those in CT group, respectively. Conclusion: For LA-PC, GS-CRT showed better local tumor control and longer survival, and was considered as good candidate of neo-adjuvant therapy. More long survival cases were reported in CRT, and other benefit for LA-PC, we should think about good selection criteria of CRT and improve the survival of LA-PC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact Email Address: carolinava@gmail.com

Introduction: Intraductal papillary-mucinous neoplasm (IPMN) is a heterogeneous group of pancreatic tumors mucin-producing with uncertain biologic behavior. We know, nowadays, that they can be also considered as a precursor of pancreatic carcinoma (PAC), one out of these lesions will develop into a malignancy of different types. There are no established guidelines for pathologic diagnosis/reporting of IPMN.

Aims & Methods: The aim of this study was to analyze the IPMN subtypes distribution related with clinicopathological, histologic and immunohistochemical and identify which one is more related to development of malignancy. This pathological study was 3-year-follow up, with consecutive patients, where we analyzed the clinical findings, radiological aspects, and morphologic features in patient’s suspects of IPMN or PAC undergoing to pancreatic surgery. The lesion was classified based on morphological and immunohistochemically defined by the current WHO criteria.

Results: We analyzed 28 patients (16 women), mean age 66.6 years (range 50-83). 15 (53%) patients were asymptomatic, and 13 (47%) showed abdominal pain (8), chest pain (4), and recurrent acute pancreatitis (1). 10 patients were submitted to subtotal pancreatectomy, 9 to duodenopancreatectomy, 7 to gastroduodenopancreaticojejunostomy, 2 subtotal gastrectomy and spleenectomy. The lesion was located in head, body and tail, and entire pancreas in 18, 9, and 1, respectively. 14 patients (50%) had involvement of the main pancreatic + branch ducts (mixed type), 7 (25%) had only the main pancreatic duct involved, 6 (21.5%) had only the branch-duct involved, and 1, (3.5%) and if not informed. The mean size of the lesion was 3.3 cm ± 6.1 (1-11 cm). Morphologic features showed multi-loculated (23 solid-cystic) (4) and solid (1). The immunohistochemically expressed MUC1, MUC5AC, and MUC2 in 18 (64.2%), 7 (21.5%) and 4 (14.2%), respectively. The hispathotologic patterns founded was gastric-type (9), Intestinal-type (3), Pan-creatobiliary-type (9), mixed-type (6), and Pancreatobiliary-type (9), mixed-type (6) (Pb-t + I-4 (4), and Pb-t + G-t (2), and cytotic-type (1) (table 1). The IPMN with a low-grade, and high-grade dysplasia and invasive carcinoma was found in 18 (64.2%), 6 (21.5%) and 4 (14.2%), respectively. We observed that all the pancreatic intraepithelial neoplasic (PanIN) founded was related to Pb-t (13±6). The invasive PAC was presented in 4 patients (14.2%) with the follow subtypes (Pb-t 2), and (Pb-t + I-1 (1)), and collord PAC [I-6 (1)] (table 2). Was found a synchronic neoplasia in 2 patients (follow subtypes adenocarcinoma, and IPMN). Conclusion: IPMN of the pancreas is a common cystic lesion located more frequent on both duct (mixed-type), showing more aggressive behavior than others pattern. In the more common lesion and were more connecting to invasive PAC and HGD, as well as connected with PanIN. MUC stains are helpful for the diagnosis and papillary histological subtyping. Prospective studies are needed to confirm these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction:
Pancreatic ductal adenocarcinoma (PDAC) has a dismal prognosis with a median 5-year survival rate below 5% [1]. Patients presenting with resectable neoplasms derive only a limited benefit from surgery. Neoadjuvant therapy is based on the assumption that tumor response to treatment can reveal which patients might benefit from surgery and which might not [2]. However, most patients experience disease recurrence following surgery, and neoadjuvant therapy is not associated with a survival benefit [3].

Methods:
We undertook an analysis of 125 patients referred to a pancreatic cancer referral center between 2015–2017, who were prospectively included in a dedicated database. Inclusion criteria: a) having both preoperative EUS and CT scan with pancreatic phase evaluation at the centre; b) CT and EUS were performed, at the latest, 30 days apart from each other and from surgical resection; c) no neoadjuvant chemo or radiotherapy was performed. The evaluation of the T by both imaging modalities was compared to the final pathology T re-established based on the new TNM 8th edition, in order to calculate specificity and sensitivity. T-test was used for the comparison of categorical variables.

Results:
Among the 184 PDAC patients surgically resected between 2015 and 2017 at our center, 30 met inclusion criteria. Of these, 19 (63.3%) were males, with mean age at resection being 67.8 ± 9.5 years. The tumor was located in the head in 38, uncus in 19, body in 59, body + tail in 6, tail in 2, and others (recurrence) in 16 cases. Treatment data was followed; mean tumor size before and after therapy was 33.5 ± 10.7 and 33.7 ± 11.5 mm, mean treatment sessions: 2.3 ± 0.7 times, mean total treatment time: 103 ± 65.6 min, mean total number of HIFU shots: 1,967.8 ± 1,106 shots. The effects of HIFU therapy were the following: a) the rate of complete tumor ablation was 87.9%, the rate of symptom relief effect was 69.4%, the effectiveness of primary lesion was CR:0, PR:21, SD:85, PD:34 cases, primary disease control rate (DCR) more than SD was 75.7%. The therapy and HIFU treatment was operation in 8, chemotherapy in 116, immuno-therapies in 4, and best supportive care (BSC) in 14 cases. MST after diagnosis in HIFU with chemotherapy and chemotherapy alone (38 patients in our hospital) was 1028.3 vs 366.6 days, respectively (p = 0.001). MST after HIFU therapy was 690.3 vs 315 days. The rate of tumor ablation was higher in combination therapy of HIFU with chemotherapy was better result than common chemotherapy alone. Conclusion: This study suggested that HIFU therapy has the potential of new combination therapy for PC. Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1431 PREVALENCE STRATIFICATION OF MALIGNANCY IN RESECTED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS INVOLVING MAIN DUCT: IS THE 10 MM WURSUNG DIAMETER AN ADEQUATE CUTOFF?


P1433 THE USE OF A NEW CORE NEEDLE IN THE ENDOSCOPIC ULTRASOUND ASSISTED TISSUE SAMPLING FOR Pancreatic SOLID MASSES: A MULTICENTRE PROSPECTIVE STUDY

S. Carrara1, M. Di Leo1, L. Bernardoni1, D. Rahal2, G. Donato3, M. Massidda5, A. Anderloni2, S. Crinò3, E. Manfrin6, M. Ballare4, L. Poliani2, F. Auriemma2, A. Beg M, Dwivedi AK, Ahmad SA, Alt S, Olowsoure O. Impact of diabetes mellitus on survival events between 2010 and 2015.
3. Banafe O et al., T. Skouras
We aimed to determine if mutation in GNAS and KRAS in of patients with suspicious pancreatic cysts. Molecular analysis (KRAS and cystic fluid analysis for cytology and CEA became widely used in clinical workup Classification of cysts as mucinous or non-mucinous using EUS-FNA with Pancreatic cystic lesions are a common finding in clinical practice. Contact E-mail Address: sandrafarias@hotmail.com
Introduction: Pancreatic cystic lesions are a common finding in clinical practice. Classification of cysts as mucinous or non-mucinous cysts, by using EUS-FNA with cystic fluid analysis for cytology and CEA became widely used in clinical workup of patients with suspicious pancreatic cysts. Molecular analysis (KRAS and GNAS mutations) are not yet recommended in clinical practice. Aims & Methods: We aimed to determine if mutation in GNAS and KRAS in addition to CEA level and cytokine cystic fluid obtained by EUS-FNA can help in pancreatic cyst classification and decision making. Evaluation of methylation of the GNAS complex locus was performed for cyst classification. Between 2008-14, 266 EUS were performed for cystic pancreatic fluid examination in a single center. We determined the methylation status of GNAS (exons 8 and 9) and KRAS (exons 2 and 3) genes by Sanger sequencing in 52 patients, in cystic fluid obtained by EUS-FNA after cystography and CEA analysis. In operated patients, cysts were also analyzed for methylation of the GNAS complex locus. Results: Mainly female (67%), mean age of 59±15 years (29-91). Cysts located in head (42%), body (39%), tail (11%) and multiple (2%), with a mean size of 3.9±2.3 cm (1.0-10.0 cm). Cytotypes (as after EUS-FNA + CEA/ cytology): 15 serous cystadenomas (SCA), 9 pseudocysts, 8 intraductal papillary mucinous neoplasms (IPMNs), 2 mucinous cystic neoplasms (MCNs), 4 adenocarcinomas (ADC), 1 solid pseudopapillary neoplasm (SPN), 1 lymphangioma, 12 non-defined. CEA > 192 ng/ml in 33% of patients and cytology with benign cells in 12% (33%), suspicious/malignant in 8% (15%), 1 NET (2%) and 31(60%) acellular samples. Surgery in 11 (21%) patients (surgical specimens: 2SCA, 3MCN, 4IPMN, 1 retention cyst and 1 ADC), chemotherapy/palliation in 6 (12%), endoscopic drainage in 1 (2%) and 34 (64%) on-fup. KRAS Mutation in 19% (9) and in GNAS in 4% (2) of cyst aspirates. By cyt type, GNAS was mutated in 1 IPMN and 1 ADC. KRAS was mutated in 6 patients on fup (2 IPMNs, 3 ADC; 1 pseudocyst: a unicellular 2 cm cyst with CEA = 125) and in 3 who had surgery (2 IPMNs and 1 MCN). Specificity and sensitivity of CEA > 192 e-cytology and CEA/KRAS/GNAS mutations for the classification of mucinous and non-mucinous (table 1-1st part) and malignant and non-malignant (table 1-2nd part) are presented in operated cysts.

References

P1435 CLINICAL IMPACT OF GNAS AND KRAS MOLECULAR ALTERATIONS added to CEA and CYTOTOLOGY IN Pancreatic CYSTIC FLUID OBTAINED BY EUS-FNA
S. Farias1, M. Duarte2, C. Albuquerque2, R. Roque3, J. Pereira Du Silva1, R. Fonseca1, A. Dias Pereira1
1Gastroenterology, Instituto Português de Oncologia Francisco Gentil, Lisboa/Portugal
2CIPM, IPO Lisboa, Lisboa/Portugal
3Pathology, IPO Lisboa, Lisboa/Portugal

Contact E-mail Address: sandrafarias@hotmail.com
Introduction: Pancreatic cystic lesions are a common finding in clinical practice. Classification of cysts as mucinous or non-mucinous cysts, using EUS-FNA with cystic fluid analysis for cytology and CEA became widely used in clinical workup of patients with suspicious pancreatic cysts. Molecular analysis (KRAS and GNAS mutations) are not yet recommended in clinical practice. Aims & Methods: We aimed to determine if mutation in GNAS and KRAS in addition to CEA level and cytokine cystic fluid obtained by EUS-FNA can help in pancreatic cyst classification and decision making. Evaluation of methylation of the GNAS complex locus was performed for cyst classification. Between 2008-14, 266 EUS were performed for cystic pancreatic fluid examination in a single center. We determined the methylation status of GNAS (exons 8 and 9) and KRAS (exons 2 and 3) genes by Sanger sequencing in 52 patients, in cystic fluid obtained by EUS-FNA after cystography and CEA analysis. In operated patients, cysts were also analyzed for methylation of the GNAS complex locus. Results: Mainly female (67%), mean age of 59±15 years (29-91). Cysts located in head (42%), body (39%), tail (11%) and multiple (2%), with a mean size of 3.9±2.3 cm (1.0-10.0 cm). Cytotypes (as after EUS-FNA + CEA/ cytology): 15 serous cystadenomas (SCA), 9 pseudocysts, 8 intraductal papillary mucinous neoplasms (IPMNs), 2 mucinous cystic neoplasms (MCNs), 4 adenocarcinomas (ADC), 1 solid pseudopapillary neoplasm (SPN), 1 lymphangioma, 12 non-defined. CEA > 192 ng/ml in 33% of patients and cytology with benign cells in 12% (33%), suspicious/malignant in 8% (15%), 1 NET (2%) and 31(60%) acellular samples. Surgery in 11 (21%) patients (surgical specimens: 2SCA, 3MCN, 4IPMN, 1 retention cyst and 1 ADC), chemotherapy/palliation in 6 (12%), endoscopic drainage in 1 (2%) and 34 (64%) on-fup. KRAS Mutation in 19% (9) and in GNAS in 4% (2) of cyst aspirates. By cyt type, GNAS was mutated in 1 IPMN and 1 ADC. KRAS was mutated in 6 patients on fup (2 IPMNs, 3 ADC; 1 pseudocyst: a unicellular 2 cm cyst with CEA = 125) and in 3 who had surgery (2 IPMNs and 1 MCN). Specificity and sensitivity of CEA > 192 e-cytology and CEA/KRAS/GNAS mutations for the classification of mucinous and non-mucinous (table 1-1st part) and malignant and non-malignant (table 1-2nd part) are presented in operated cysts.

Diagnosis of neoplastic mucinous cysts

<table>
<thead>
<tr>
<th>CEA &gt; 192 e-cytology</th>
<th>KRAS/GNAS mutation</th>
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<td>100%</td>
<td>42%</td>
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Sensitivity Specificity

Cancer 67% 40% KRAS/GNAS mutation

Conclusion: KRAS mutation assay on EUS-FNA specimens from patients with pancreatic mass M. Laclav1, B. Bunganic1, T. Halkova1, L. Benesova1, B. Belsanova1, E. Traboulbi2, S. Suchanek2, M. Minarik3, M. Zavoral3
1Department of Internal Medicine, Military University Hospital,1st Faculty of Medicine, Charles University, Prague/Czech Republic
2Center for Applied Genomics of Solid Tumors (CEGES), Genomic Research Institute Center, Prague/Czech Republic
3Genomic Research Institute Center for Applied Genomics of Solid Tumors, Prague/Czech Republic

Contact E-mail Address: martin.laclav@vun.cz
Introduction: Promising method, which helps to distinguish between chronic pancreatitis and cancer, is point mutations of the proto-oncopene KRAS test. This method is not established in routine clinical practice yet. Aims & Methods: Determination of the sensitivity of the KRAS assay using various kinds of samples of pancreatic cystic mass and testing the effect of the presence of KRAS mutations on the prognosis of survival. 147 patients underwent EUS-FNA examination of pancreatic mass, accompanied by blood sampling with subsequent separation of plasma for the detection of circulating tumor DNA. Part of biopsy sample was left native in a stabilizing solution and part as cytological smear. Samples (native aspirates, cytological smears, plasma) were examined for the presence of KRAS mutation by heteroduplex analysis, denaturing capillary electrophoresis.

Results: Among 147 patients with pancreatic masses, 118x were diagnosed as cancer, 26x chronic pancreatitis, 3x neuroendocrine tumor. In total 147 native aspirates, 187 cytological smears and 94 plasma samples were examined. The highest sensitivity of KRAS mutation was reached in the group of pancreatic cancer patients using cytology, in which 90% of KRAS mutation was detected (106/118 of the samples). When using the native cellular aspirates, mutation was detected in 78% (92/118 samples), and examination of plasma was positive in 70% (66/94 samples).In 44 patients with chronic pancreatitis KRAS mutations was detected, although none has been cytologically confirmed as a cancer. Two of these four patients were confirmed in the course of the disease as a cancer, one patient died because of alcoholic delirium and the last one was indicated for surgery recently.

Conclusion: Examination of KRAS mutations can be performed in all patients undergoing EUS-FNA, with the cytology being the most reliable type of sample for genetic tests. KRAS examination would be reasonable to introduce into routine clinical practice in a group of patients with unclear differential diagnosis of chronic pancreatitis, especially in those with suspicion of cancer in inflammatory terrain. Financial support by The Ministry of Defence and Armed Forces of the Czech Republic MO 1012.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1437 DO BILARY STENTS REDUCE THE DIAGNOSTIC PERFORMANCE OF EUS BIOPSY IN PATIENTS WITH A MASS IN THE HEAD OF THE PANCREAS?

N. L. Bekkali1, M. Nayar1, L. Thornton1, S. J. Johnson2, B. Haugk3, A. Darne2, J. S. Leeds1, R. Charnley1, K. Oppong1

Introduction: Self-expanding metal stents (SEMS) are increasingly preferred to plastic stents (PS) for preoperative drainage and palliation of biliary obstruction secondary to a stricture in the head of pancreas (HOP). Their use has increased over the last 5-6 years. Endoscopic ultrasound (EUS) with fine needle aspiration or biopsy (FNA/FNB) is commonly utilised to make a tissue diagnosis and to aid in staging in those with borderline resectable tumours. Stents may reduce diagnostic performance of FNA/FNB by reducing the visible mass to puncture. There have been 2 studies that assessed the impact of stenting on EUS-FNA performance, one found no difference in yield and sensitivity among patients with or without stents and between SEMS and plastic. Whilst a more recent study found lack of stent use was significantly reduced by the presence of a stent.

Aims & Methods: The aim was to assess whether stents (SEMS or PS) impair diagnostic performance of EUS tissue acquisition, in a retrospective study of all patients with a HOP mass undergoing EUS biopsy between January 2010 and June 2016. Stenting information was obtained from the EUS report and images. Biopsies reported as malignant were considered as such, all other reports were considered benign. A definitive diagnosis of cancer was based on positive pathology or follow up with signs of progression. A benign diagnosis required negative pathology, stable imaging and symptoms for a year or more. Patients with cystic lesions were excluded.

Results: A total of 1861 patients had EUS-FNA/FNB of which 731 were for HOP lesions, mean age 65 yrs (410 F), with tissue sensitivity of 72% for all types of needles used. Tissue accuracy was significantly different between the 3 groups (p = 0.0001); SEMS 67%, PS 71% and 83% in the unstented group. The difference in accuracy was significant between the unstented group versus SEMS (p = 0.0002) and PS (p = 0.03) and not significant between PS and SEMS. Stepwise multiple-variable analysis revealed significant difference for accurate tissue diagnosis favouring size needle 25G (OR 1.7 [95% CI 1.1-1.7] and tumour size (OR 1.04 [1.02-1.07]) and not affected by presence of stent (SEMS OR 0.3 [0.2-0.6]) or PS (OR 0.5 [0.3-0.8]). Other needle sizes (19G or 22G), number of passes or types of needle did not significantly affect tissue accuracy.

Conclusion: Our results show a significant adverse impact of both SEMS and PS on tissue accuracy via EUS FNA/FNB. The effect is greatest with SEMS. These results suggest that where possible EUS and biopsy if required should be performed before stent placement.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


K. Oppong1, M. Wangermez2, P. Ah-Soune3, P. Bichard4, Y. Le Baleur5, J. Privat6, J. S. Leeds1, R. Charnley3, K. Oppong1

Introduction: Solid-pseudopapillary neoplasm (SPN) is a rare condition, first described by Frantz in 1939. It occurs mostly in young women, and surgical resection is recommended. Its local recurrence rate is less than 10% and usually occurs within 4 years after surgery. Before such a surgery, especially in young people, EUS-FNA (Endoscopic ultrasonography with fine needle aspiration) is discussed to confirm diagnosis but rarely performed due to suspected needle tract contamination by neoplastic cells. The aim of our large multicenter study was to assess the short- and long-term safety of preoperative EUS-FNA in SPN.

Aims & Methods: This study is a multicenter retrospective register of all SPN diagnosed in the last decade in 14 European expert centers (GRAPHE task force). Inclusion criterion was realization of preoperative EUS-FNA followed by surgical resection. Patient and tumor characteristics were collected, as the EUS-FNA technique (number of passes, needle size, trans-gastric or trans-duodenal access). Immediate or late complications of EUS-FNA and recurrence of SPN were then recorded.

Results: During the period study, 49 patients (41 women/8 men) with preoperative EUS-FNA for SPN were recorded. Mean age of patients was 37 ±15y. A positive EUS-FNA (OR 2.4 [1.9-3.0] for 25G vs 0.7 [0.5-0.9] for 22G and 0.8 [0.6-0.9] for 19G) was considered benign. A definitive diagnosis of cancer was based on positive pathology or follow up with signs of progression. A benign diagnosis required negative pathology, stable imaging and symptoms for a year or more. Patients with cystic lesions were excluded.

Conclusion: In this large multicenter retrospective series, a systematic preoperative EUS-FNA did not seem to modify the SPN recurrence rate. Therefore this study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be completed on the day of presentation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

2. Cell Pathology, Royal Victoria Infirmary, Newcastle upon Tyne/United Kingdom
3. Hepatobiliary and Pancreatic Surgery, Freeman Hospital, Newcastle Upon Tyne, United Kingdom, Newcastle, United Kingdom

Contact E-mail Address: noorbekkali@hotmail.com

P1439 DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMOURS USING SUREPATH CYTOLOGY AND IMMUNOHISTOCHEMISTRY WITHOUT NEED FOR EXCISION BIOPSY

C. Meredith1, H. Dixson2, P. Irandoust1, P. Baird3

1Gastroenterology And Hepatology, Bankstown-Lidcombe Hospital, Bankstown/ Australia/NSW
2Endoscopy Unit, CHU Saint Antoine, Paris/ France
3Gastroenterology, CHU La Cavale Blanche, Breizh/ France

Introduction: Pancreatic neuroendocrine tumours (PNETs) are relatively rare, i.e., 1/100,000 individuals per annum, and account for only 1-2% of all pancreatic tumours. They are separated into 2 major categories: 1) well-differentiated (WD-NETs) which have a diffuse architecture with an irregular nucleus and less cytoplasmic and finely granular cytoplasm and 2) poorly-differentiated (PD-NETs) which have round to oval nuclei, coarsely stippled chromatin and finely granular cytoplasm. They occur in the head of the pancreas in 70% of cases and in the body or tail in 30% of cases. They most commonly affect men aged 50-60 years with mean tumour size of 2-5 cm. They are considered malignant if they have a diameter of >2 cm. They can be divided into Functioning and Non-functioning tumours. The most common functioning tumours are Insulinomas and Glucagonomas. The most common non-functioning tumours are Somatostatinomas and VIPomas.

Aims & Methods: The aim of this study was to use a new diagnostic technique, the surepath™ tissue preparation kit, to diagnose pancreatic neuroendocrine tumours without the need for excision biopsy of the tumour. The kit incorporates a SurePath cell preservative solution which is collected through a needle or fine needle aspiration (FNA). The SurePath technique allows the cells to be collected in a cytology aliquot and studied without the need for excision biopsy of the tumour. The study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be completed on the day of presentation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. N. L. Bekkali1, M. Nayar1, L. Thornton1, S. J. Johnson2, B. Haugk3, A. Darne2, J. S. Leeds1, R. Charnley1, K. Oppong1

Introduction: Self-expanding metal stents (SEMS) are increasingly preferred to plastic stents (PS) for preoperative drainage and palliation of biliary obstruction secondary to a stricture in the head of pancreas (HOP). Their use has increased over the last 5-6 years. Endoscopic ultrasound (EUS) with fine needle aspiration or biopsy (FNA/FNB) is commonly utilised to make a tissue diagnosis and to aid in staging in those with borderline resectable tumours. Stents may reduce diagnostic performance of FNA/FNB by reducing the visible mass to puncture. There have been 2 studies that assessed the impact of stenting on EUS-FNA performance, one found no difference in yield and sensitivity among patients with or without stents and between SEMS and plastic. Whilst a more recent study found lack of stent use was significantly reduced by the presence of a stent.

Aims & Methods: The aim was to assess whether stents (SEMS or PS) impair diagnostic performance of EUS tissue acquisition, in a retrospective study of all patients with a HOP mass undergoing EUS biopsy between January 2010 and June 2016. Stenting information was obtained from the EUS report and images. Biopsies reported as malignant were considered as such, all other reports were considered benign. A definitive diagnosis of cancer was based on positive pathology or follow up with signs of progression. A benign diagnosis required negative pathology, stable imaging and symptoms for a year or more. Patients with cystic lesions were excluded.

Results: A total of 1861 patients had EUS-FNA/FNB of which 731 were for HOP lesions, mean age 65 yrs (410 F), with tissue sensitivity of 72% for all types of needles used. Tissue accuracy was significantly different between the 3 groups (p = 0.0001); SEMS 67%, PS 71% and 83% in the unstented group. The difference in accuracy was significant between the unstented group versus SEMS (p = 0.0002) and PS (p = 0.03) and not significant between PS and SEMS. Stepwise multiple-variable analysis revealed significant difference for accurate tissue diagnosis favouring size needle 25G (OR 1.7 [95% CI 1.1-1.7] and tumour size (OR 1.04 [1.02-1.07]) and not affected by presence of stent (SEMS OR 0.3 [0.2-0.6]) or PS (OR 0.5 [0.3-0.8]). Other needle sizes (19G or 22G), number of passes or types of needle did not significantly affect tissue accuracy.

Conclusion: Our results show a significant adverse impact of both SEMS and PS on tissue accuracy via EUS FNA/FNB. The effect is greatest with SEMS. These results suggest that where possible EUS and biopsy if required should be performed before stent placement.

Disclosure of Interest: All authors have declared no conflicts of interest.
mitotic index derived from Ki67 staining helps identify WD-NETs which can be monitored with NETs which need aggressive treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1440 EFFECTS OF IGF2BP2 ON GROWTH AND PROLIFERATION OF PANCREATIC TUMOR CELL LINES

L. Niefeld1, F. Sperling1, K. Theuerkorn1, H. Griesmann1, S. Krug1, S. Hättemüller2, P. Michl1
1Internal Medicine I, Martin-Luther-University Halle-Wittenberg, Halle (Saale)/Germany
2Institute Of Molecular Medicine, Martin-Luther-University Halle-Wittenberg, Halle (Saale)/Germany

Contact E-mail Address: lars.niefeld@uk-halle.de

Introduction: Pancreatic neuroendocrine neoplasms (PNE) are highly angiogenic tumors which despite of various targeted options including mTOR and VEGF inhibition frequently develop secondary drug resistance. IGF2BP2 (IGF2 mRNA-binding proteins) represent a family of canonical RNA-binding proteins (RBP) comprised of three members (IGF2BP1-3) which have been described to promote stem and/or progenitor cell maintenance with reported expression and oncogenic roles in aggressive cancers. IGF2BP2 shows a differential expression pattern in various solid tumors including pancreatic neuroendocrine tumors.

Aims & Methods: We aimed to characterize the role of IGF2BP2 in progression and resistance of pancreatic neuroendocrine neoplasms. We used three different siRNA-pools (IGF2BP2) to inhibit the different IGF2BP isoforms in pancreatic neuroendocrine BON1 tumor cells. Cellular effects were investigated by Western blot analyses, flow cytometry, clonogenic survival, cell viability and migration assays.

Results: In the pancreatic neuroendocrine tumor cell line BON1, knock-down of IGF2BP1 resulted in a significant reduction of cell viability. Cell cycle analysis by FACS showed a decreased S phase progressionparalleled by a reduction in the proliferation marker PCNA and a markedly reduced MEK/ERK activation. In contrast, Akt signaling was unaffected. Moreover, knock-down of IGF2BP2 significantly reduced clonogenic growth as assessed by colony formation assays and led to decreased cell migration as determined by scratch assays. Interestingly, knock-down of IGF2BP1 was insufficient to induce apoptosis, as assessed by PARP and caspase-3 cleavage as well as annexin-V FACS. Rather, si-IGF2BP1 increased the expression of both the anti-apoptotic and pro-survival factor BCL-2 and the cell cycle inhibitor CDKN1B. In contrast to IGF2BP1, knock-down of IGF2BP3 rather induced cell viability, whereas IGF2BP2 modulation had no impact on cell viability and cell cycle progression indicating opposing effects of the three IGF2BP isoforms on PNE progression. These in vitro findings were paralleled by distinct expression patterns of IGF2BP proteins in human and murine PNE tumor tissues.

Conclusion: In summary, our data suggest that IGF2BP1 promotes tumor progression by enhancing cell cycle progression and clonogenic growth, whereas IGF2BP2 and -3 exert no tumor-promoting role in PNE.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1442 EFFECTS OF LOW-DOSES ASPRIN ON CLINICAL OUTCOME AND DISEASE PROGRESSION IN PATIENTS WITH GASTRO-ENTERO-PANCREATIC NEUROENDOCRINE TUMORS: RESULTS OF A MULTICENTRIC RETROSPECTIVE STUDY

S. Massironi1, S. Pusceddu2, F. Cavalcoli1, A. Zilli1, G. Tamagno3, D. Femia3, N. Prinz1, C. Ciabardini1, D. Conte1
1Gastroenterology And Endoscopy Unit, Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milano/Italy
2Medical Oncology, Unit 1Enets Center Of Excellence, Fondazione IRCCS Istituto Tumori Milano, Milan/Italy
3Department Of Endocrinology/Diabetes, Mater Misericoardi University Hospital, Dublin/Ireland

Contact E-mail Address: cavalcoli.federica@gmail.com

Introduction: The chemopreventive effect of aspirin (ASA) and other NSAIDs has been observed in the setting of colorectal cancer, showing a reduction in the incidence and mortality. However, the impact of aspirin use on clinical outcome of patients with gastro-entero-pancreatic neuroendocrine tumors (GEP-NEN) has not yet been evaluated.

Aims & Methods: Aim of the study was to retrospectively evaluate the clinical outcome of GEP-NEN patients treated with ASA at three different European referral Centres for NENs. All the GEP-NENs patients followed up in three European Centres (Fondazione IRCCS Ca’ Granda Ospedale Policlinico Milano, Italy; Fondazione IRCCS Istituto Tumori Milano, Italy; Mater Misericoardi University Hospital, Dublin, Ireland), from January 2005 and September 2016, were retrospectively enrolled. The possible association between ASA and disease grading, staging, primary site, overall OS and PFS were evaluated. At the time of enrolment, clinical data and biochemical parameters were collected for every patient. Chromogranin A (CgA) and specific circulating peptides were evaluated. Morphological and functional imaging (computed tomography, magnetic resonance and Gallium 68PET) were performed to follow up the patients at each Centre.

Results: In the 253 patients included (121 M, median age 64 yrs), the primary neuroendocrine tumor was located at the stomach (#35), pancreas (#82), small bowel (#80), appendix (#27), colon (#19) or unknown (#7). Grading was G1 in 154 patients, G2 in 64, G3 in 5 and not available in 28. TNM staging was I in 99 patients, II in 16, III in 32 and IV in 86. No clear impact on OS or PFS was evaluated.

Conclusion: At present data, ASA therapy seems not to have a direct clinical impact on disease progression or survival of NENs, even if it is associated with lower Ki-67 values and less node involvement. Further studies are needed to confirm this observation.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1443 PANCREATIC LESIONS IN VON HIPPEL-LINDAU SYNDROME: CLINICAL AND EPIDEMIOLOGICAL DATA FROM A SINGLE CENTER
L. Venezia1, P. Cortegoso Valdivia1, C.G. De Angelis2
1Gastroenterology, A.O.U. Città della Salute e della Scienza, Torino/Italy

Contact E-mail Address: cortegosoblog@yahoo.it

Introduction: Von Hippel-Lindau disease (VHL) is a rare heritable genetic syndrome that may affect different systems and organs: pancreatic manifestations of the disease are frequent during lifetime of the patients. The key feature is the presence of simple cysts, but serous cystadenomas (SCAs) or neuroendocrine tumors (NETs) can be frequently found as well. The aim of this study is to describe pancreatic manifestations in patients with VHL, considering the peculiarity and rarity of this disease.

Aims & Methods: All patients who referred to the established multi-disciplinary team in our center (Molinette Hospital - Turin) for management and follow-up of VHL were included in the study. We considered the ones with pancreatic involvement (simple cysts, SCAs or pNETs). We collected data about the patients, demographics and medical history, about the lesions (imaging features, hystological and cytological analysis) and about the management.

Results: A total of 24 patients, 18 of which (75%) had a pancreatic involvement. Simple multiple pancreatic cysts were found in 13 patients, SCAs were found in 2 patients and NETs in 7 patients. The mean age of the patients with pancreatic lesions was 42 (min 25 - max 75), 11 were males and 7 females (1.6:1 M:F). Similarly affected 13 patients were always multiple (ranging from 12 to 80 mm) mostly in the head. 3 patients underwent surgery for symptomatic disease. All pNETs were well differentiated (G1, K67 < 2%); 7 were located in the head and 2 in the tail (2 patients had multiple tumors). 5 of the 7 pNET patients underwent surgery. The two SCAs were multiple (max 65 mm), mostly affecting the head in 1 case and the tail in the other. No surgery was performed.

Conclusion: 75% of our VHL patients showed pancreatic involvement, mostly in males compared to females. 72% of patients with pancreatic lesions suffered from simple cysts, 39% from NETs and 11% from SCAs. To note that all NETs were G1 and behaved in a benign fashion. Surgery was performed only in patients with NETs in the pancreatic head and in patients with symptomatic cystic disease. The mean age of incidence of VHL-related pancreatic lesions was lower than in sporadic cases, thus confirming literature data. Although all lesions in our patients were benign or stable, constant monitoring is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1445 THE LARGEST FAMILY IN TURKEY WITH MULTIPLE ENDOCRINE NEOPLASIA-TYPE 1 AND A NOVEL MUTATION
A. Čeşin1, D. G. Duman2
1Internal Medicine, Marmara University School of Medicine, Istanbul/Turkey
2Gastroenterology, Marmara University Hospital, Istanbul/Turkey

Contact E-mail Address: alicectdrn@gmail.com

Introduction: Multiple Endocrine Neoplasia type 1 (MEN-1) occurs usually sporadically but because it is an autosomal dominant disorder it may affect other family members too. The combination of parathyroid, pituitary and anterior pituitary tumors is characteristic of MEN-1 although it may be accompanied by a substantial number of non-endocrine tumors. The mutations in MEN-1 result in inactivation of MEN1 gene (whose product is a nuclear export protein encoded by this gene) and is responsible for tumor-suppression under normal circumstances. Herein we present the largest MEN1 family in Turkey to the best of our knowledge and a newly discovered mutation in MEN1 that effects this family.

Aims & Methods: The family inherited the specific MEN-1 mutation is originally § ekinarahanis, Giresun and most of the members have moved to Istanbul and Yalova. Consanguineous marriages have been practiced within the family. Family mapping was structured and contained fifty-five members. Among them, eleven patients underwent biochemical, radiologic and if necessary endosonographic evaluation along with the genetic testing. Additionally, we learnt that 2 members of the family had died of pancreatic malignancy. Diagnostic criteria for familial MEN-1 include: 1 - the presence of at least one MEN1-associated tumor that are from parathyroid, pituitary, or GEP tract origins, 2 - at least one first-degree relative with one or more of these endocrine tumors and/or 3 - positive genetic testing for abnormal MEN1 mutation. For our index case, DNA sequencing of the MEN1 gene performed using Sanger sequencing. Our index case was ZK who had hypophysis adenoma, parathyroidectomy and pancreatic neuroendocrine tumour and had whipple operation. A three nucleotide deletion p.ser560argfs*3(c.1680_1683 del TGAG) mutation was detected. Seven out of ten who were analysed were tested positive for the mutation. Genetic counseling and information about pre-implantation genetic diagnosis (PGD) was given to all patients who are tested positive for the mutation. All 7 patients had p.ser560argfs*3(c.1680_1683 del TGAG) three nucleotide deletion same with that of index case. Of out 15 patients, MEN1-diagnosis was confirmed in 11. Tumours detected at patients with MEN1-diagnosis were; nonfunctional pancreatic neuroendocrine tumour at three, parathyroid adenoma/hyperplasia at 6 patients and hypophysis adenoma

Results (SEER) database. Clinicopathologic features were retrospectively analyzed. Survival was calculated by the Kaplan-Meier method. Multivariable Cox regression models with hazard ratios (HRs) were constructed to analyze survival outcomes and risk factors. Cubic spline analysis was used to assess relationship between tumor size and probability of metastasis.

Univariate analysis showed that tumor size was significantly correlated with survival (P<0.001), no matter surgery was performed or not. However, subgroup analysis suggested this association to be linear for patients with localized and regional tumours (P<0.001), but stochastic in patients with distant stages (P=0.703). On multivariate analysis, tumor size was an indicator for metastasis (HR = 1.010, 95% CI: 1.008-1.012, P=0.001 and size <20 mm for good survival (HR = 1.211, 95% CI: 1.048-1.399, P=0.009 for size of 21-40 mm; HR = 1.282, 95% CI: 1.161-1.474, P<0.001 for size >40 mm). For tumours ≤20mm, surgical treatment was associated with significantly improved survival compared with those patients who did not undergo operation (P<0.001).

Conclusion: Tumor size affects the probability of metastasis. Its prognostic impact on survival is restricted to patients with localized and regional disease. For tumours with tumour size <20mm, surgical treatment should be considered preferably.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Results: A total of 5424 patients were identified. There were 1226 patients (22.6%) with tumour size of 2cm or less. The probability of metastasis increased in a non-linear fashion with increasing tumours size. Univariate analysis showed that tumour size was significantly correlated with survival (P<0.001), no matter surgery was performed or not. However, subgroup analysis suggested this association to be linear for patients with localized and regional tumours (P<0.001), but stochastic in patients with distant stages (P=0.703). On multivariate analysis, tumor size was an indicator for metastasis (HR = 1.010, 95% CI: 1.008-1.012, P=0.001 and size <20 mm for good survival (HR = 1.211, 95% CI: 1.048-1.399, P=0.009 for size of 21-40 mm; HR = 1.282, 95% CI: 1.161-1.474, P<0.001 for size >40 mm). For tumours ≤20mm, surgical treatment was associated with significantly improved survival compared with those patients who did not undergo operation (P<0.001).

Conclusion: Tumor size affects the probability of metastasis. Its prognostic impact on survival is restricted to patients with localized and regional disease. For tumours with tumour size <20mm, surgical treatment should be considered preferably.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1446 PROGNOSTIC VALUE OF THE DIFFERENT PRE-TREATMENT BIOMARKERS FOR PATIENTS WITH NEUROENDOCRINE TUMOURS

R.R. R. Grigorescu1, C. Gheorghe2, I. M. Stanel1, A. Croitoru1, I. Dinu1, V. Croitoru1

1Dept. Of Gastroenterology, Instituto Clinico Fandeni, Bucuresti/Romania
2Dept. Of Oncology, Fandeni Clinical Institute, Bucuresti/Romania

Contact E-mail Address: ralucargrigorescu@yahoo.com

Introduction: Several inflammatory response materials could be used for prediction of prognosis in cancer patients. The neutrophil lymphocyte ratio (NLR), platelet lymphocyte ratio (PLR), thrombocytosis (the platelets number >400*10³/mm³) have been introduced for prognostic scoring system in various cancers.

Aims & Methods: The objective of this study was to determine whether the NLR, the PLR or thrombocytosis could predict the clinical outcomes in G1-G2 neuroendocrine tumors. We performed a retrospective review of 31 patients with neuroendocrine tumors with ki 67 below 20% diagnosed in Fandeni Clinical Institute between 2011-2017. Data about site of the primary tumor, presence of metastasis, NLR, PLR, thrombocytosis (platelet count > 400) and survival were collected and analysed.

Results: The patients characteristics were: primary tumor location was: 61.29% pancreas, 22.58% gastrointestinal tract, 16.13% unknown, 61.29% had hepatic metastasis, 6.45% had locally advanced tumor. The primary tumor was resected in 35.48% patients. The overall 2-year survival rate was 77.42%. The Ki 67 index (p < 0.04), PLR (cut off > 300) p < 0.01 have statistical significant impact on survival. Univariate analysis and on multivariate analysis (P < 0.05). Other factors like ki 67 index, metastatic disease, thrombocytosis and NLR have an impact on survival statistical significant on multivariate analysis.

Conclusion: This study demonstrates the prognostic role of different variables like ki 67 index, PLR and PLT value, thrombocytosis and metastasis. This factors may be integrated in different scoring systems for prognosis that could guide clinicians for a better management in patients with neuroendocrine tumors.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


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P1447 FUNCTIONAL RELEVANCE OF THE OVEREXPRESSION OF PLAC8 IN NEUROENDOCRINE PANCREATIC TUMORS

M. Hutzer1, M. Hajati2, H. Schmidt1, R. Lawlor3, A. Scarpa4, T.M. Gress1, M. Buchholz2,3

1Department Of Gastroenterology, Philipps-University Marburg, Marburg/Germany
2Department Of Pathology And Diagnostics, University and Hospital Trust of Verona, Verona/Italy

Contact E-mail Address: marina.hutzler@staff.uni-marburg.de

Introduction: Neuroendocrine pancreatic tumors represent the second prevalent entity of malignant tumors of the pancreas and show an overall mortality of about 60%. At the moment surgical resection is the only option of potentially curative therapy, as with the currently available chemo- and radiotherapeutic approaches an inhibition of tumor growth but no regression of the tumor can be achieved. Therefore for about 80% of pNET patients no curative therapy can be offered. To obtain the identification of novel potential target genes for the development of new therapeutic strategies, primary tissues from pNET patients were analyzed. Amongst others Plac8 (Placenta-specific 8) was identified, which is a small protein of unknown function, showing different forms of cellular localization depending on the cell type analyzed, indicating at its ability to fulfill a variety of physiological functions.

Aims & Methods: In the course of this study, the function of Plac8 in neuroendocrine pancreatic tumors is to be unveiled to evaluate its value as a potential target for pNET therapy. Therefore primary tumor tissue of about 100 pNET patients were analyzed for Plac8 expression by quantitative realtime PCR and immunohistochemistry. Furthermore established pNET cell lines from human origin where transfected with siRNAs against Plac8 and there proliferative activity and apoptosis were analyzed by MTT and MT assay. Changes in these important characteristics of tumor cells were further examined by westernblot analyzes of key regulators of apoptosis and cell growth.

Results: Plac8 is highly expressed in primary human pNET tissue on RNA- as well as in protein level. Functional in vitro analyses show that the siRNA-mediated knockdown of Plac8 not only in human but also in rat cell lines leads to significantly reduced proliferative activity and reduced cell growth. These effects come along with indicative changes in the expression of central regulators of cell cycle while cell cycle pathways seem to be affected.

Conclusion: Overexpression of Plac8 in neuroendocrine tumors of the pancreas promotes the proliferative phenotype of the tumor cells while the inhibition of Plac8 inhibits cell growth and metabolism. Therefore in the future Plac8 could represent a very interesting target molecule for the treatment of pNETs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1448 CLINICAL OUTCOMES OF SUPERFICIAL LARYNGOPHARYNGEAL CANCER WITH LYMPHO-VASCULAR INVASION AFTER ENDOSCOPIC LARYNGO-PHARYNGEAL SURGERY

H. Ishida1, R. Nakamura2, T. Omori2, S. Mayanagi3, K. Fukuda1, K. Suda1, N. Wada1, H. Kawakubo1, Y. Kitagawa1

1Surgery, Keio University School of Medicine, Tokyo/Japan
2Departemen Of Surgery, Kawasaki Municipal Kawasaki Hospital, Kawasaki/Japan

Contact E-mail Address: hishida223@gmail.com

Introduction: Since the majority of laryngopharyngeal carcinomas are detected at an advanced stage, most cases are treated with concurrent chemotherapy and radiation therapy. The key to improving the prognosis and quality of life is early detection of the primary cancer and treatment using minimally invasive surgery. We previously reported the good oncologic outcomes with ELPS (Endoscopic laryngopharyngeal surgery) for superficial laryngopharyngeal carcinoma. However there is no clinical evidence for an additional treatment nor prognosis about the cases conducted endoscopic resection which were diagnosed to be superficial carcinoma with lympho-vascular invasion histopathologically.

Aims & Methods: This study aimed to investigate the optimal additional treatment and clinical course for the superficial laryngo-pharyngeal carcinoma with lympho-vascular invasion. We analyzed clinicopathological data in 9 patients showed Lympho-vascular invasion receiving ELPS between 2007 and 2014.

Results: Positive lympho-vascular invasion was found in 9 cases. Detected the tumor depth was SEP in 7 lesions and MP in 2 lesions. Mean alcohol consumption is 9.9 abw units. Average smoking history is 38.9 pack years. 5 cases are low activity ALDH2 heterozygotes and have alcohol flushing reaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


3. Plac8 is highly expressed in primary human pNET tissue on RNA- as well as in protein level. Functional in vitro analyses show that the siRNA-mediated knockdown of Plac8 not only in human but also in rat cell lines leads to significantly reduced proliferative activity and reduced cell growth. These effects come along with indicative changes in the expression of central regulators of cell cycle while cell cycle pathways seem to be affected.

4. Positive lympho-vascular invasion was found in 9 cases. Detected the tumor depth was SEP in 7 lesions and MP in 2 lesions. Mean alcohol consumption is 9.9 abw units. Average smoking history is 38.9 pack years. 5 cases are low activity ALDH2 heterozygotes and have alcohol flushing reaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1449 LONG-TERM OUTCOMES OF EARLY GASTRIC CANCER WITH LATERAL MARGIN POSITIVE AFTER ENDOSCOPIC RESECTION

H. Kim1, D. Yang2, J. Park3, B.W. Bang2, Y.W. Shin3

1Gastroenterology, Inha University Hospital, Incheon/Korea, Republic of
2Division Of Gastroenterology, Department Of Internal Medicine, Inha University School of Medicine, Incheon/Korea, Republic of

Contact E-mail Address: kimhg@inha.ac.kr

Introduction: The positive lateral margin after endoscopic resection(ER) of early gastric cancer(EGC), additional surgery or endoscopic submucosal dissection(ESD) are recommended. However, the additional surgery often difficult due to advanced age or patient’s comorbid conditions.

Aims & Methods: The aims of this study is to investigate of appropriate manage- ment in patients with positive lateral margin after ER. We analyzed

Wednesday, November 01, 2017 09:00-14:00

Endoscopy and Imaging III - Hall 7
PI450 EFFICACY OF THE FORCED COAGULATION MODE WITH LOW-FREQUENCY POWER SETTING DURING ENDOSCOPIC SUBMUCOSAL DISSECTION
T. Ishida1, T. Toyonaga2, Y. Ohara2, R. Aiyoshi1, F. Kawara1, S. Tanaka1, Y. Morita1, E. Umegaki1, N. Hoshi1, T. Azuma1
1Gastroenterology, University Graduate School of Medicine, Kobe/Japan
2Dept. Of Endoscopy, Kobe University Hospital, Kobe/Japan
Contact E-mail Address: tishida@med.kobe-u.ac.jp
Introduction: Bleeding control is one of the most important factors to success of endoscopic submucosal dissection (ESD) in safety. We have reported the endoscopic precoagulation technique using soft coagulation mode (S method) is effective in reduction of the bleeding during the ESD. The aim of this study was to evaluate the efficacy of the vessel precoagulation by using forced coagulation mode (F1-10 method) with low frequency power setting (F1-10 method) in endoscopic submucosal dissection (ESD).
Methods: We investigated the times of vessel bleeding before vessel precoagulation by using S method and F1-10 method in clinical study. The recorded data were analyzed using the software of SPSS for Windows 11.3 version.
Results: A total of 105 patients (58 males, 47 females) with mean of 66.5 (20-91) years old and mean size of duodenal tumors 27.0 (11-80) mm in diameter were treated with ESD. Of medical endoscopists (physician and surgical trainees) were compared with non-medical endoscopists (NME). Results: 885 trainee portfolios were analyzed (765 medical and 120 NMEs), with a median procedural count of 276 (IQR 124). The median number of therapeutic entries and DOPS were 4 (IQR 11), and 1 (IQR 3) respectively. Overall rates for endotherapy and DOPS were 2.9% and 0.8% per procedure. When stratified by therapy, the median exposure to each therapy was either 0 or 1, with means displayed in Table 1. 25.2% of trainees had no exposure to any type of endotherap–y (67.5% of NME and 18.6% of medical endoscopists, p < 0.0001). Of medical endoscopists awarded certification, 37.1% had not performed band ligation, 50.7% had not placed a clip, and 54% had not used heater probe. NME had significantly less exposure to each modality of endotherapy considered (overall odds ratio 0.10, p < 0.0001).

Table 1: Mean procedural counts at the point of UGI certification

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Medical</th>
<th>Non-medical</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banding</td>
<td>2.6</td>
<td>1.69</td>
<td>0.143</td>
</tr>
<tr>
<td>Clipping</td>
<td>2.1</td>
<td>0.30</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Injection</td>
<td>4.0</td>
<td>0.30</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Conclusion: Training on endotherapy prior to certification is limited. The current UGI certification process does not incorporate any exposure to endotherapy for UGBI. In response, the JAG QA team have recently released new DOPS forms specific to UGBI, and are consulting on introducing formal certification in endotherapy for UGBI.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. GMC National Training Survey Results 2016, Gastroenterology.
P1452 ELECTRONIC CHROMOENDOSCOPY WITH MAGNIFICATION IN THE DETECTION OF DYSPLASIA IN BARRETT’S ESOPHAGUS
C. Carames1, J.C. Carames2, M. Xiu1, M. Carames2, M. Gaidhane1, M. Kahaleh1
1Well Cornell Medical College, New York/United States of America
2Santander Hospital, Reynosa/Mexico
Contact E-mail Address: jccaram@gmail.com
Introduction: Barrett’s esophagus (BE) is a known premalignant condition with risk for progression to esophageal adenocarcinoma. Electronic chromoendoscopy with magnification (ECM) is an evolving imaging technology being investigated as a novel imaging modality to identify dysplasia in BE to assist with higher yield BE surveillance and improve the diagnostic yield of esophageal biopsies for BE.

Aims & Methods: This is a single-center study to evaluate the efficacy of ECM (Scan by Pentax) in the detection of BE and dysplastic BE in a screening, average risk population with BE in Northeast Mexico. We conducted a retrospective study of 100 consecutive patients (41 males) with known BE (confirmed by pathology) during surveillance upper endoscopy for dysplastic BE between

Disclosure of Interest: None.

Reference

Reference

Reference
March and September of 2016. All patients underwent EC with iScan. The esophagus was inspected with a ECM capable endoscope (EG- 2990-Zi) and deliberate biopsies were taken from tissue identified by ECM that suggested BE. All biopsies were confirmed by a GI pathologist. Primary endpoint was the correlation between visual inspection diagnosis of dysplastic BE by ECM versus pathologic diagnosis of BE as the gold standard.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>47.7</td>
</tr>
<tr>
<td>Male</td>
<td>41/100</td>
</tr>
<tr>
<td>Endoscopic diagnosis: nondysplastic BE</td>
<td>96/100</td>
</tr>
<tr>
<td>Endoscopic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: nondysplastic BE</td>
<td>94/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: benign gastric mucosa</td>
<td>1/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: esophageal ulcer</td>
<td>1/100</td>
</tr>
</tbody>
</table>
| Accuracy        | 98%
| Sensitivity     | 100% [95% CI (96%–100%)] |
| Specificity     | 0% [95% CI (0%–84%)] |
| Positive predictive value | 98% [95% CI (93%–99.7%)] |
| Negative predictive value | NA |

Results: In our cohort 41% were male, with mean age of 47.7 years. Endoscopic diagnoses by ECM were divided into nondysplastic BE (96/100) and suspected dysplastic BE (4/100). On pathology nondysplastic BE was found in 94/100 patients, BE with low-grade dysplasia was found in 4/100 patients. Benign gastric mucosa with no alterations (1/100), and ulcerated esophagitis (1/100). The overall accuracy of endoscopic diagnoses using ECM against pathology diagnosis was of 98%, with sensitivity of 100% [95% CI (96%–100%)], and positive predictive value of 98% [95% CI (93%–99.7%)].

Conclusion: Endoscopic diagnosis of BE by directed biopsies of esophageal tissue with use of ECM is highly accurate. Future prospective studies are needed to validate our preliminary findings and assess inter-observer variability.

Disclosure of Interest: M. Xu: Grants from ASC, Xlumena, Cook, Olympus, M. Haferman4, M. Rugge3, S. Realdon2, M. Kuhale: Grants from BSC, Xlumena, Cook, Olympus, Merit Endotek, Gore, ASGE.

P1454 SAFETY, EFFICACY AND CLOSURE TECHNIQUES OF ENDOSCOPIC FULL THICKNESS RESECTION-INITIAL CLINICAL EXPERIENCE

A. Bapaye1, T. K. Bharadwaj1, M. R. Mahadik1, S. G. Vare1, R. Pujari1, S. Date1, N. Dubale1, J. A. Bapaye1, A. Kulkarni1
1Shivnath Desai Center For Digestive Disorders, Deenanath Mangeshkar Hospital Digestive Diseases & Endoscopy, Pune/India

Introduction: Endoscopic full-thickness resection (EFTR) for sub-epithelial lesions (Sets) of GI tract is less frequently described; possibly due to technical challenges involved in dissection and need for resultant defect closure. Current study describes single-center experience of EFTR for treatment of SETs.

Aims & Methods: Prospective database of patients undergoing EFTR for SETs over 6-years (2011–2017) was abstracted. Patient selection for EFTR-endoscopy, endoscopic ultrassound (EUS) and CECT. Inclusion criteria: mesenchymal lesions, predominantly endophytic component and absence of features of invasive malignancy. Exclusion criteria: patients unfit for general anesthesia or major intraoperative, uncorrectable coagulopathy or high risk features for malignancy. All procedures performed under general anesthesia with endotracheal intubation. High-definition endoscope (GIF-HQ-190 or CF-HQ-190, Olympus Corp., Japan) with distal transparent hood and carbon dioxide insufflation used in all. All submucosal (SM) elevation by Gelofuscin, mucosal incision and SM dissection performed to expose SET. Encapsulated SET enucleated maintaining intact capsule. Adherent and attached muscularis propria (MP) layer fibers divided. IT or Dual-knife12 used for dissection and coag-grasper for hemostasis. Resultant MP layer defect closed endoscopically.

Results: Total N = 18 (M:F–11:7), mean age-53.6 (Range-28–78). Presentation: GI bleed-7(38%), abdominal pain-4(22%), non ulcer dyspepsia-1, rectal mass-1 and asymptomatic, incidentally diagnosed-6(33%). Layer of origin-MP layer in all. Location-stomach-13(72%), duodenum-2, rectum-2, proximal jejunum-1. Mean size of SET-3.3 cm (range 1–7). Mean procedure time-182 mins (60–345), and mean hospital stay was 4 days. Adverse events-two (11%)-esophageal laceration during specimen retrieval–1 (closed using endoclips), failure–1 (due to undetected large exophytic component-surgical resection). Histopathology with

Abstract: P1453

Final Diagnosis (FD)

<table>
<thead>
<tr>
<th>BO without DYS/OAC</th>
<th>BO with DYS/OAC</th>
<th>BO with DYS/OAC and visible lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO without DYS/OAC</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>BO with DYS/OAC</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>BO with DYS/OAC and visible lesions</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Admitting Diagnosis (AD)

<table>
<thead>
<tr>
<th>AD</th>
<th>Group 1 BO without DYS/OAC (n = 82)</th>
<th>Group 2 BO with DYS/OAC but no visible lesions (n = 33)</th>
<th>Group 3 BO with DYS/OAC and visible lesions (n = 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
IHCl-GIST*(93.0%):neuroendocrine tumor –3(16%), leiomyoma –1, schwannoma –1. The localization cyst-1, leiomyoma cell hyperplasia-1. Closure 16/18 (2 defects in distal extra peritoneal rectum left open intentionally for healing by secondary intention); techniques—through-the-scope (TTS) clips-7, over-the-scope clip-4, omental patch + clip -2 (TTS – 1, OTS – 1), endoscopic suturing – 1, endoloop + clip -1. Mortality–nil. Follow up endoscopy at 4 weeks healing in all 17 patients. Mean follow up –2 months.

Conclusion: EFTR is safe and effective for resection of SET. Pre EFTR EUS and CECT may be useful to select appropriate candidates. Secure closure of defect is necessary for intumescence. Full-thickness defects. Further studies comparing EFTR and surgery are recommended.

Disclosure of Interest: A. Bapaye: Speaker-Boston scientific corporation, Cook endoscopy, Olympus and TaeWoong medical

All authors have declared no conflicts of interest.

P1455 PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS: EFFICACY AND SAFETY OF ENDOSCOPIC VARICAL LIGATION

1Gastroenterology, Centro Hospitalar e Universitário Coimbra, Coimbra, Portugal, 2Coinbra/Portugal

Contact E-mail Address: es18497@gmail.com

Introduction: In the natural history of chronic liver disease, variceal bleeding represents a life-threatening complication of portal hypertension, with high risk of mortality and recurrence. Current guidelines define vasoconstrictive therapy or endoscopic variceal ligation (EVL) in primary prophylaxis and the combination of both in secondary prophylaxis.

Aims & Methods: We aimed to evaluate the efficacy of EVL therapy in both prophylaxis of variceal bleeding in cirrhosis and to establish the patient’s clinical outcome. This was a retrospective observational cohort study of a total of 44 EVL procedures performed in 250 cirrhotic patients, who were admitted in a gastroenterology department of a tertiary centre, between 2004-2016, as prophylaxis of gastrointestinal bleeding. Sessions of ligation were repeated every two to three weeks in order to reach variceal eradication. The clinical outcome included the recurrence of bleeding (primary endpoint), the eradication success rate of oesophageal varices, EVL-related complications and overall and bleeding-related mortality.

Results: The mean follow-up period for all 250 cirrhotic patients enrolled in the study was 73.2/10 months, with mean age of 63.9±10.8years and a predominance of male gender (80.4%;n=201). At initial endoscopy, 257 (93.4%) had active or inactive varices. One patient (0.4%) had variceal bleeding severe in 168 (67.2%); EVL was performed as primary prophylaxis in 50.9%(n=226) and secondary prophylaxis in 49.1%(n=218). Varices were obliterated in 209 (83.6%) patients with mean number of EVL procedures necessary to eradicate varices of 1.8±0.95 and a maximum of procedures of 6. Recurrent bleeding occurred in 11.2%(n=28) of cases with a mean time to re-bleeding occurrence of 8.1±14.2months. Major and significant complications were verified in 8.1%(n=36) of patients. The mean complications were bleeding related to post-banding ulceration (75.0%(n=27) and infection (22.2%(n=8)), with mean time between EVL and complication occurrence of 11.1±11.8days (minimum:0;maximum:43). Intra-procedure complications occurred in 11(2.5%) patients with no death, despite of two cases of Sengstaken-Blakemore tube necessarity. The overall mortality was 5.8%(n=24), being 0.4%(n=2) related to varical bleeding.

Conclusion: EVL seems to be an efficient, safe and relatively simple therapeutic option for the primary and secondary prophylaxis of variceal bleeding in cirrhotic patients. Since the main complications occurs over 1 week after EVL procedure, the majority of patients can be safely treated in an ambulatory setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1456 THE VALUE OF ENDOCOPIC FULL-THICKNESS RESECTION FOR GASTRIC AND DUODENAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULARIS PROPRIA LAYER

1Endoscopy Center, Zhongshan Hospital, Shanghai/China

Contact E-mail Address: whitleily.chen@aliyun.com

Introduction: Given diminishment of quality of life caused by surgery in the stomach and duodenum, a minimally invasive treatment is desirable for gastric and duodenal submucosal tumors (SMTs).

Aims & Methods: We aimed to assess the value of endoscopic full-thickness resection (EFTR) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscularis propria (MP) layer. A total of 276 patients with single gastric SMTs originating from the MP layer were performed EFTR between January, 2010 and February, 2014. The tight adhesion of the tumor to the gastric or duodenal serosal layer could be seen in every case from endoscopic ultrasound (EUS) before the procedure. The SMTs oriented endoscopically were performed EFTR using a standard ESD technique without laparoscopic assistance under direct endoscopic view. The defect of gastric and duodenal wall was closed after resection.

Results: A total of 276 patients included 94 males and 182 females. Their median age was 57.8 years (range, 30-81 years). Among all the 276 SMTs in our study, 165 located in gastric fundus, 96 located in gastric body, 8 located in the antrum, 1 located in the pylorus and 5 located in duodenal bulb. The angle of curvature 1, lesion 16/18 (2 defects in distal extra peritoneal rectum left open intentionally for healing by secondary intention); techniques—through-the-scope (TTS) clips-7, over-the-scope clip-4, omental patch + clip -2 (TTS – 1, OTS – 1), endoscopic suturing – 1, endoloop + clip -1. Mortality–nil. Follow up endoscopy at 4 weeks healing in all 17 patients. Mean follow up –2 months.

Conclusion: EFTR is safe and effective for resection of SET. Pre EFTR EUS and CECT may be useful to select appropriate candidates. Secure closure of defect is necessary for intumescence. Full-thickness defects. Further studies comparing EFTR and surgery are recommended.

Disclosure of Interest: A. Bapaye: Speaker-Boston scientific corporation, Cook endoscopy, Olympus and TaeWoong medical

All authors have declared no conflicts of interest.
P1458 LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION(ESD) FOR RELATIVE INDICATION GROUP OF EARLY ESOPHAGEAL SQUAMOUS CARCINOMA (EESCC) IN AGED PATIENTS

Z. Qi1, Y. Zhong1, P. Zhou1
1Endoscopy Center, Zhongshan Hospital Fudan University, Shanghai/China

Contact E-mail Address: poem001@qq.com

Introduction: According to the Japanese Esophagus Society Guidelines, Early Esophageal Squamous Cell Carcinoma (EESCC) involving the muscularis mucosa or <200 μm invasion of the submucosa, and circumferential extent of >2/3 were relative indications (RI) for ESD. Additional treatment (AT, including esophagectomy or chemoradiotherapy) may be needed after ESD. But in aged RI patients, most will refuse AT due to higher rates of debilitating symptom in China.

Aims & Methods: The aim of this study was conducted to evaluate the long-term outcomes of aged RI patients without AT after ESD.

Results: Between January 2008 and December 2013, a total of 158 aged EESCC patients were included in the present retrospective study. Prognosis outcomes were analyzed.

Discussion: Aged RI EESCC patients without AT( esophagectomy or chemoradiation) showed comparable prognosis outcomes with AI group after ESD. So follow up may be recommended, substituted for AT in aged RI group.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1459 RETROSPECTIVE ANALYSIS ON SUSPICION OF FOREIGN BODY INGESTION AND FOOD IMPACTION ON GASTROENTEROLOGY EMERGENCIES

J. T. Correia De Sousa1, D. Libanio1, P. Lago1, R. Marcos-Pinto1, I. Pedroto1
1Gastroenterology, Centro Hospitalar do Porto, Porto/Portugal

Contact E-mail Address: joao.correia.de.sousa@gmail.com

Introduction: Suspicion of foreign body (FB) and food impaction (FI) are one of the most common motives for endoscopic emergency. This retrospective study reviewed 288 cases of suspicion on FB/FI, by the frequency of endoscopic alterations, predictive factors to presence, types of FB found, and therapeutic approach.

Aims & Methods: Unicentric retrospective cohort study of endoscopies performed during one year of gastroenterology emergency setting.

Results: In 2015, 288 endoscopies were performed on suspicion of FB/FI (22% of total endoscopies, n = 1309, of them 61.5% (n = 199) were performed during the night. Patients’ median age was 58 years, and 52.8% were women. The presence of FB/FI was confirmed in 71.2% (n = 205); of them 61.5% (n = 126) were complete FB/FI. The most frequently found foreign bodies were meat bones (18.5% (n = 37) and fish bones (14.6% (n = 30). Most FB/FI were found on the proximal esophagus (56.1%, n = 115). Endoscopic removal was performed on 129 cases (63.4%), endoscopic mobilization in 54 (26.3%), and in 22 endoscopic removal wasn’t achieved (10, where referred to otolaryngology; 2 for surgery and 10 were deferred to endoscopy with sedation, in operating room).

Endoscopy under sedation was performed in 20 cases (9.7%). About ¼ had associated comorbidities, the most common were esophageal ring in 22 (10.7%) and benign stenosis in 178.3%) patients. Major complications were rare: 1 perforation (0.3%) and 3 deep esophageal lacerations (1.5%). Age (>55years), presence of comorbidities, and previous episodes were associated with presence of FB/FI on Endoscopy (Odds Ratio 2.01, 3.39 and 4.63 respectively).

Conclusion: Endoscopy is frequently preformed for suspicion of FB/FI in our emergency setting. Presence is confirmed in the majority of the cases. Predictive factors for presence were identified. Most FB/FI were removed with success with low complication rates. This data favor the endoscopic approach on suspicion of FB/FI.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1460 LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC NEOPLASMS; LOW-VOLUME SINGLE-CENTER EXPERIENCE

S.T. Kim, T.H. Kim, S. Na
Internal Medicine, Jeju National University Hospital, Jeju/Korea, Republic of

Contact E-mail Address: panzervor@paran.com

Introduction: Endoscopic submucosal dissection (ESD) has become a standard therapy for early gastric neoplasia. There is no consensus yet about the number of experiences required for performing ESD alone.

Aims & Methods: We aimed to investigate the learning curve of ESD performed by a single beginner endoscopist focusing on developing the performance of dissection, shortening the procedure time, and preventing complications.

Methods: Records of 120 consecutive ESD procedures performed by a single beginner endoscopist with an ESD knife from March 2012 to February 2016 were collected. For analysis of the learning curve, total procedures were divided into four periods, each comprising 30 sequential ESD. The parameters assessed were the en-bloc resection rate, complete resection rate, procedure time, and related complications.

Results: In the procedure time according to the number of experiences, the procedure time decreased from 300 minutes to 290 minutes. However, there was no statistical difference from the first (63.5 ± 54.0) to the second quarter (44.7 ± 51.4, p = 0.19), to the third quarter (40.7 ± 27.8, p = 0.08), and to the fourth quarter (40.8 ± 23.1, p = 0.09). There was no procedure that exceeded 100 minutes from the third quarter. There were a total of seven perforations, four of which were in the first quarter, two in the second, and one in the third. In the procedure time according to the location of the lesions, upper lesion (92.4±43.7) showed longer procedure time than middle (46.6±40.2, p < 0.01) and lower third (39.5±27.5, p < 0.01) with statistically significant difference. In addition, in the fibrotic lesions, regardless of size and location, all took a very long time, more than 100 minutes.

Conclusion: It needs accumulate experience with the help of a professional expert up to 30 cases, and to the more advanced level, about 90 procedures are needed. And, the location of the lesion is the important factor in determining the difficulty of the procedure. Therefore, it is best to avoid the upper third lesion as far as possible until experience 90 cases or at least 30 procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Inaccuracy of Cambridge Protocol for Complete Examination of MDP.

Aims & Methods: Prospective, randomized, blinded, controlled, non-inferiority crossover study. Subjects scheduled for elective EGD were randomized to undergo CA-EGD (group A) or SVE (group B) before undergoing a second examination by the alternate method. Imaging of the MD was evaluated, after image processing, by three blinded multicenter-experts. Our primary outcome measure was complete examination of the papilla. Secondary outcome measures were image quality of mucosal pattern, ability to obtain an overview of the papilla and overall satisfaction of the evaluators. For secondary outcomes, a score was given from 1 to 10 (1 = poor, 10 = excellent).

Results: A total of 62 patients were randomized and completed the study. Complete examination of the papilla was achieved in 59 patients using CA-EGD compared to 60 patients using SVE (95 vs. 97%, p = 0.10). CA-EGD had mean scores of 8.7 ± 1.3, 7.1 ± 0.86 and 7.9 ± 1.1 regarding mucosal pattern, overview and overall satisfaction, respectively, versus 5.3 ± 1.6 (p < 0.001), 8.3 ± 0.9 (p < 0.001) and 7.6 ± 0.6 with SVE (p < 0.01).

Conclusion: CA-EGD is non-inferior to SVE for complete examination of MDP. CA-EGD had significantly higher scores than SVE regarding the image quality and overall satisfaction, while SVE had a better overview. CA-EGD is a safe and effective method for examination of MD and can replace the SVE for diagnostic indications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Results: 19 patients underwent EA, with a mean age of 63.5 ± 17.7 years and a male to female ratio of 0.7. "En bloc" resection was done in most cases 15/19 (79.8%). Bleeding occurred in 6 cases (31.6%) and two patients (10.5%) developed acute pancreatitis. One patient died due to severe bleeding. The average days of hospitalization after endoscopic ampullectomy were 5.7 with a range from 2 to 25 days. Adenocarcinoma was described in the final histopathological result in 4/19 cases (21.1%). One year follow-up noted a recurrence rate of 15.8% (3/19 cases).

Conclusion: In conclusion, endoscopic ampullectomy is a difficult procedure with an increased risk of complications but performed by experienced endoscopists is safe and surgical interventions can be avoided.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1466 PER ORAL ENDOSCOPIC MYOTOMY: UPDATED RESULTS FROM A UNITED KINGDOM CASE SERIES
S. Gulati1, A. Emmanuel1, H. Inoue2, A. Haji3, B. Hayee1
1Endoscopy, King’s Institute of Therapeutic Endoscopy, RS/United Kingdom
2Digestive Disease Center, Showa University Koto-Toyou Hospital, Tokyo, Japan

Contact E-mail Address: shraddha.gulati@nhs.net

Introduction: Per-oral endoscopic myotomy (POEM) has been adopted as a minimally invasive treatment option for achalasia and even spastic oesophageal conditions.

The first case of POEM was performed at the King’s Institute of Therapeutic Endoscopy (KITE) in 2013. Here we present our initial case series including the first UK case of diffuse oesophageal spasm (DES).

Aims & Methods: Prospective data was collected for consecutive patients undergoing POEM including demographics, POEM technique, the use of Endoluminal Functional Lumen Imaging Probe (EndoFLIP) and adverse events. Clinical success was defined as a reduction of Eckardt score (ES) to <2 or a reduction in 4 points from baseline. Follow up data at 3 and 12-24 months (post-POEM) was analysed using the Wilcoxon signed ranks test to compare pre- and post-POEM ES and 4sIRP and pre and post-treatment GORD-HRQoL score. Repeated-measures ANOVA was used for multiple time-point comparisons.

Results: POEM was performed in 51 patients (22F, age 48.6±13.5 years). Further baseline data is presented in table 1. Median gastric and oesophageal myotomy was 3 cm (2–4) and 10 cm (3–18) respectively with a selective circular myotomy in all cases and a posterior approach in 11. POEM was clinically successful in 48/51 (94%) eligible for review at 3 m. Reduction in ES at 3m: 8.5 (5–12) vs 0 (0–7) p < 0.001 was sustained in 31 patients with median follow up of 15 m (3–36); 8.5 (5–12) vs 2 (0–7) ANOVA P < 0.0001. Reduction in IRP-4s was observed 24.05 ± 10.47 mmHg vs 7.81 ± 4.91 mmHg (p = 0.0001). Revision of POEM was performed in n = 3 at 6, 16 and 27 m after POEM (Clavien-Dindo Grade IIIb). There were no cases of mortality, perforation, infection or major bleeding.

Table 1: Baseline characteristics

<table>
<thead>
<tr>
<th>Patient Demographics</th>
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<tr>
<td>Age (mean, SD, range) (years)</td>
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<tr>
<td>Male (n) (%)</td>
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<tr>
<td>Female (n) (%)</td>
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<tr>
<td>Clinical Data</td>
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<tr>
<td>Duration of disease (mean, SD, range) (years)</td>
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<tr>
<td>Eckardt Score (median, range)</td>
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<tr>
<td>Chicago Subcategorisation</td>
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<tr>
<td>Achalasia Type I (n) (%)</td>
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<td>Achalasia Type II (n) (%)</td>
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<tr>
<td>Achalasia Type III (n) (%)</td>
</tr>
<tr>
<td>DES</td>
</tr>
<tr>
<td>Uncategorised (EndoFLIP used)</td>
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<tr>
<td>Non-Sigmoid Oesophagus (n) (%)</td>
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<tr>
<td>Sigmoid Oesophagus (n) (%)</td>
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<tr>
<td>Treatment History</td>
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<tr>
<td>Prior Achalasia Treatment</td>
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<tr>
<td>Prior Botulinum Toxin Injection; BTX (n) (%)</td>
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<tr>
<td>Prior Pneumatic Dilatation; PD (n) (%)</td>
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<td>Prior Heller Myotomy; LHM (n) (%)</td>
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Conclusion: This is the largest UK case series of POEM for achalasia including the first successful UK POEM procedure for DES. At our institute, POEM was performed successfully in a potentially more challenging cohort where 52.9% had prior endoscopic/surgical treatment with intervention. Our results are in line with international consortia and ASGE findings that POEM is a safe and efficacious procedure for the treatment of achalasia and oesophageal spastic disorders for both short term and sustained symptomatic benefit.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
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P1467 NEW CHALLENGE FOR SAFER ENDOSCOPIC SUBMUCOSAL DISSECTION USING CO2 LASER
Y. Morita, R. Ariyoshi
Gastroenterology, Kobe University, Kobe/Japan

Contact E-mail Address: ymorita@med.kobe-u.ac.jp

Introduction: Endoscopic submucosal dissection (ESD) is increasingly accepted as a minimally invasive treatment for the patients with early gastrointestinal cancers. However, ESD demands high maneuverability technique, and the success of the operation is dependent on each operator’s skill. We have developed a novel laser surgery system for ESD to overcome such difficulties of ESD, which is composed of a CO2 laser source and a disposible flexible hollow fiber probe. Compared to conventional ESD (C-ESD) using electric surgical knives, ESD using CO2 laser (E-ESD) had an advantage of less risk of perforation and massive thermal damage, because the CO2 laser is strongly absorbed by water such as saline or sodium hyaluronate. Further more, the cutting point can be precisely recognized by another visible guide laser. Due to non-contact laser irradiation and adequate visualization of treatment area, the laser system facilitates more precise and safer treatment and provides high quality and stable dissection. We hypothesized that performing ESD using CO2 laser with a submucosal laser absorber could be a safer and simpler ESD technique.

Aims & Methods: The aim of this study was to evaluate the feasibility of E-ESD and the quality of the resected specimen obtained by L-ESD in living porcine compared with C-ESD. We performed ESD for a total of 14 hypothetical lesions in three porcine stomachs (L-ESD: 7 lesions; C-ESD: 7 lesions) under general anesthesia. En-bloc resection rate, procedure time, adverse events, and the quality of the resected specimen were evaluated. To evaluate the smoothness of the cutting surface in the resected specimens, we compared the length of the resected side of the submucosa (LRS) with the length of the muscularis mucosa (LMM). Results: The en-bloc resection rate was 100% in both groups. Although the mean L-ESD procedure time was 23.3 ± 10.8 minutes, and was significantly longer than that of the C-ESD group (9.4 ± 6.6 minutes; p < 0.05), there was no uncontrollable bleeding or perforation in either group. The mean ratio of LRS to LMM was 107.3 ± 33.3% in the L-ESD group, and was significantly lower than that of the C-ESD group (138 ± 28%)(P < 0.005).

Conclusion: ESD using CO2 laser might be a feasible and effective method for the treatment of early gastrointestinal cancers.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. Sudipta@emcvellore.ac.in

Introduction: Acute corrosive ingestion (ACI) is a common and serious medical problem accounting for a number of hospital admissions. ACI causes significant mortality and morbidity. These patients are at risk of developing luminal strictures of the upper gastrointestinal tract in the long term. This is more in patients with high-grade injury.

Aims & Methods: The present study aimed at assessing the long-term outcomes of high-grade (Zargar’s grade ≥Grade 2A) corrosive-induced injury of upper gastrointestinal tract (1). This was a prospective study conducted in the Department of Gastroenterology at Christian Medical College, Vellore. The study period was between January 2008 to December 2014. All patients were managed by a standard protocol which included doing a gastroscopy within 24 hours of ACI. In this study we included patients ≥3 years with high-grade injury (Zargar’s grade

Table 1 Continued

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<th>Patient Demographics</th>
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<td>Prior POEM (n) (%)</td>
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<td>Prior 2 or &gt;2 prior treatments (n) (%)</td>
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<tr>
<td>ASA Physical Status Classification</td>
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<td>ASA grade I (n) (%)</td>
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<tr>
<td>ASA grade II (n) (%)</td>
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<td>ASA grade III (n) (%)</td>
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Table 1 Continued: Patient Demographics

| Prior POEM (n) (%) | 3 (6) |
| Prior 2 or >2 prior treatments (n) (%) | 4 (8) |
| ASA Physical Status Classification |  
| ASA grade I (n) (%) | 21 (41) |
| ASA grade II (n) (%) | 22 (43) |
| ASA grade III (n) (%) | 8 (16) |

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Supported by a grant from Ministry of Health of the Czech Republic, No. 16-2764HA. Clinical trial registration was done at another hospital were excluded from the study. The study was approved by the Institutional Ethics committee and was funded by a fluid research grant received from Institutional Review Board at Christian Medical College, Vellore, India. The data was analyzed using SPSS version 17. The categorical continuous variables were expressed as mean ± SD and the non parametric continuous variables were expressed as median. Comparison between groups was done using Fisher’s exact test.

**Results:** During the study period a total of 112 patients presented with ACI. In all 82 patients were included in the study. Amongst them, 53% of the patients were females and the mean age was 36.5 ± 15.5 years. The intent of corrosive ingestion was suicidal in 70% and accidental in 30%. In majority (50%) of patients the nature of ingested material was not known. Nasogastric tube placement was done in 50%, nasojejunal tube placement in 32% and 8% no tube was placed. Surgery as needed in 19% (tracheostomy or feeding jejunostomy or a definitive surgery). Amongst the 82 patients who were included in the study, 11 were lost to follow up within 31 months, however 67 patients in whom the medical follow up period was 31 months (range 2-72 m) during which 12 (16.9%) patients expired (73% related to ACI). Amongst the 59 patients, that were alive 16(27%) were symptomatic, 12(20%) had dysphagia, 5(6%) had regurgitation, 4(5%) had chest pain, 67% had weight loss and 11(18%) patients required hospitalization. In all, 43(73%) patients underwent barium study during follow up and strictures were noted in 21(36%). The site of stricture was esophageal in 11(53%), stomach in 8(38%) and combined esophagostomy and stomach in 20%(39%). Esophageal stricture was seen in all patients with Grade III B esophageal stricture. 27% (6/22) with Grade III A injury and 19%(5/27) with Grade II B injury. None of the patients with Grade II A injury developed stricture. Stricture in stomach developed in 22(32%) patients with Grade III B injury (15/27 cases) and Grade III A injury, 10%(1/10) with II B injury and 20%(5/25) with II A injury.

**Conclusion:** Acute corrosive ingestion is associated with significant morbidity and mortality. There needs to be stringent control on sale, use and storage of such chemicals.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


**P1469**

**PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY (pCLE) FOR IN VIVO DIAGNOSIS OF ESPHAGEAL AND GASTRIC LESIONS - RESULTS OF A PROSPECTIVE, CONTROLLED, CROSS- OVER STUDY

**M. kollar**1, J. Krajcova 2, J. Malusova 2, M. Kment 2, Z. Vackova 2, J. Spicak 2, J. Martinek 3

1Clinical And Transplant Pathology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

2Department of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

3Internal Medicine, University of Medicine and Pharmacy, Timisoara/Romania

Contact E-mail Address: malookollar1@seznam.cz

**Introduction:** Probe-based confocal laser endomicroscopy (pCLE) provides real-time microscopic visualization with 1000-fold magnification, allowing endoscopic access to the histological evaluation of gastrointestinal lesions. pCLE may thereby be helpful in guidance of endoscopic therapy. However, histopathological assessment still remains a gold standard for histological diagnosis so far, while pCLE-based diagnosis has not been generally accepted yet. Therefore, more studies assessing diagnostic accuracy of pCLE are warranted.

**Aims & Methods:** The aim of the study consisted in the analysis of the accuracy of three risk scoring systems used in non-variceal upper digestive bleeding for assessing patient’s prognosis, previously estimated to be predictive for re-bleeding/death after gastrointestinal bleeding. We assessed prospectively a batch of 1872 patients admitted in the Gastroenterology Department of Emergency County Hospital Timisoara in a 12-year period, in which we calculated 3 risk scoring systems, Rockall, Cedars-Sinai and Baylor, based on clinical and endoscopic data. We compared their accuracy for assessing patient’s prognosis, expressed as the need of blood transfusions, number of hospitalization days, re-bleeding, surgery and death. Discriminative ability was assessed using the area under the receiver operating characteristic curve (AUROC).

**Results:** The batch included 1014 (54.6%) male and 738 (39.4%) female, mean age 62 ± 7.8 years. Regarding the need of blood transfusions, the predictive ability of the scores is as follows: Rockall AUROC 0.59 (CI (0.55-0.62), sensitivity(Se) = 81.7%, specificity(Sp) = 35.5%, positive predictive value (PPV) = 28.4%, negative predictive value (NPV) = 86.1% (p < 0.0001); Cedars-Sinai AUROC 0.59 (CI(0.55-0.63), Se = 72.4%, Sp = 41.3%, PPV = 28.5%, NPV = 82.3% (p < 0.001); Baylor AUROC 0.56 (CI(0.49-0.63), Se = 41.9%, Sp = 75.5%, PPV = 40.6%, NPV = 76.5%. Number of hospitalization days: Rockall AUROC 0.66 (CI(0.55-0.77), Se = 61.5%, Sp = 65.2%, PPV = 90%, NPV = 25% (p < 0.003); Cedars-Sinai AUROC 0.63 (CI(0.50-0.75), Se = 53.1%, Sp = 73.9%, PPV = 89.5%, Sp = 27.4%; Baylor AUROC 0.52 (CI(0.51-0.73), Se = 47.06%, Sp = 66.6%, PPV = 84.2%, NPV = 52%. Rebleeding: Rockall AUROC 0.55 (CI (0.67-0.73), Se = 61%, Sp = 65%, PPV = 93%, NPV = 40.4%; Cedars-Sinai AUROC 0.41 (CI (0.41-0.56), Se = 35.1%, Sp = 81.2%, PPV = 16.2%, NPV = 94.2%; Surgery: Rockall AUROC 0.67 (CI (0.61-0.73), Se = 71.2%, Sp = 59%, PPV = 16%, NPV = 98.1%; Cedars-Sinai AUROC 0.72 (CI (0.66-0.78), Se = 58%, Sp = 77.4%, PPV = 93%, NPV = 97.9%; Baylor AUROC 0.55 (CI (0.41-0.68), Se = 50%, Sp = 66.2%, PPV = 5.1%, NPV = 94%. Death: Rockall AUROC 0.85 (CI (0.78-0.92), Se = 84.7%, Sp = 78.1%, PPV = 18.2%, NPV = 99.5% (p < 0.0001); Cedars-Sinai AUROC 0.71 (CI(0.66-0.76), Se = 83.1%, Sp = 48.1%, PPV = 10.2%, NPV = 97.6%; Baylor AUROC 0.75 (CI (0.67-0.83), Se = 76.9%, Sp = 72.3%, PPV = 19.2%, NPV = 97.2%. There were no statistically significant differences encountered in predicting the need of blood transfusions and surgery between the scores (p > 0.05). Baylor score was superior to Rockall in estimating the hospitalization period (p = 0.04) and the need of rebleeding (p = 0.004), and Cedars-Sinai proved to be superior to Baylor score in predicting re-bleeding (p = 0.002) and to Rockall score in predicting death (p = 0.006).

**Conclusion:** On our cohort of patients, Cedars-Sinai score proved to be the best in predicting the re-bleeding and death in patients with NV-UDB in comparison to Rockall and Baylor scores.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1471**

**PERCUTANEOUS ENDOSCOPIC GASTROSTOMY: A SAFE PROCEDE EVEN IN CANCER PATIENTS

**J. Pinho**1, J. Lage2, D. Libanião3, S. Ferrar3, N. Silva3, M. Dinis-Ribeiro3, C. Brandão3

1Gastroenterology, Centro Hospitalar Tondela/Viseu, Viseu/Portugal

2Gastroenterology, Instituto Português de Oncologia do Porto, Porto/Portugal

Contact E-mail Address: julianapinho18@gmail.com

**Introduction:** Dysphagia and malnutrition is a common feature in up to 64% of patients with advanced cancer and the need of radiotherapy or chemotherapy often worsens these symptoms. Percutaneous endoscopic gastrostomy (PEG) is the preferred route of feeding and nutritional support in these patients. Although generally considered to be a safe procedure, it has been reported that PEG tube placement complications in cancer patients may be superior when compared to non-cancer patients.

**Aims & Methods:** The aim of this study was to evaluate the complications rate after PEG tube placement in cancer patients. We did a single-centre prospective database including all patients with PEG tube insertion between March 2014 and June 2016, evaluating the complications during 6 months follow-up.

**Results:** A total of 265 patients (83% men, mean age 59 years) underwent PEG tube insertion. 224 patients (84.5%) had head and neck cancers and 33 patients

**Disclosure of Interest:** All authors have declared no conflicts of interest.
(12.5%) had esophageal cancer; 207 patients (78.1%) had stage IV disease. At the time of diagnosis, 138 patients (52%) had grade 3 dysphagia and the mean body mass index (BMI) was 20.9 Kg/m2. All the patients underwent anti-biotic prophylaxis previous to the procedure. There was an increase on BMI to 23.8 Kg/m2 at 6 months follow up. Eight patients (3.8%) had immediate complications after the procedure (bleeding from the PEG tract; 6; anesthetic complications - 2). The overall complication rate at the first month of follow up was 14.4%, at the third month 20.5% and at the sixth month 11.7%. The overall peri-PEG infection rate was 14%, and was the main complication at the first month of follow up. Development of hyper-granulation tissue was the most frequent complication at the third month of follow-up. Buried bumper syndrome occurred in 10 patients (3.7%). None of the patients had tumor seeding at the gastrostomy site. Overall mortality was 26.4%, none of the deaths attributable to PEG tube insertion.

Conclusion: PEG placement is a safe and effective technique in cancer patients. The rate of major complications and tube site infection were similar to the results found in literature for non-cancer patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1472 A PROSPECTIVE, SINGLE-CENTER, CROSS-OVER CONTROLLED TRIAL OF CONFOCAL LASER ENDOMICROSCOPY ASSESSMENT OF PERSISTENT OR RECURRENT INTESTINAL METAPLASIA AND RECURRENCE OF NEOPLASIA AFTER ENDOSCOPIC TREATMENT OF BARRETT’S ESOPHAGUS-RELATED NEOPLASIA (BORN)

J. Krajcová1, M. Kollár2, J. Malásková2, M. Kmenť2, Z. Vucková1, J. Spíčak1, J. Martiník1
1Department Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic
2Clinical And Transplant Pathology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

Contact E-mail Address: krajcejikem.cz

Introduction: Probe-based confocal laser endomicroscopy (pCLE) has been developed to overcome limitations of the current endoscopic sampling techniques. pCLE allows detailed examination of cellular structures and may examine larger areas compared to standard biopsy. Patients after endoscopic treatment of Barrett’s esophagus (BE)-related neoplasia (BORN) should undergo endoscopic surveillance with biopsies to detect persistence or recurrence of intestinal metaplasia (IM) or neoplasia (N).

Aims & Methods: The aim of this prospective study was to evaluate the efficacy of pCLE (vs. standard biopsies) in detection of persistent/recurrent IM/neoplasia in patients after endoscopic treatment of BORN. A single-center, prospective, controlled and pathologist-blinded (still ongoing) study in patients undergoing surveillance for Barrett’s esophagus (BE) after endoscopic treatment of BORN. pCLE images were obtained from the neo-Z-line (a few cases including macroscopically visible tongues), the cardia and the esophagus. Thereafter, standard biopsies were taken and sent for histopathological analysis (4 biopsies from macroscopically normal neo-Z-line, 2 biopsies from the cardia and the esophagus and targeted biopsies from visible abnormalities, if present). BE was defined in pCLE as columnarlined epithelium with dark mucin in goblet cells, a villiform pattern, and regular-shaped capillaries in the mucosa. The dysplastic BE was characterized by black cells with irregular borders and shapes, high dark contrast to the surrounding tissue, and irregular leaking capillaries in the mucosa.

Results: We examined 29 patients, from these 14 patients (48%) had the initial diagnostic procedure. A total 148 patients (52%) had high-grade intraepithelial neoplasia (HGIN) and 8 patients (28%) had an early adenocarcinoma (EAC). Persistent/recurrent IM was detected at the level of neo-Z-line in 10 patients (34.5%) by both standard biopsies and pCLE. pCLE but not biopsies detected persistent/recurrent IM in 2 patients (6.7%), another 2 patients had IM present in biopsies but not in pCLE. pCLE diagnosed one patient with recurrent LGIN in a macroscopic visible tongue arising from neo-Z-line, which was not confirmed in biopsies. Sensitivity and specificity of pCLE detection of persistent/recurrent IM was 83.3% (95% CI 51.6–97.9) and 89.47% (95% CI 66.9–98.7), respectively, with positive predictive value 83.3% (95% CI 51.6–95.0) and negative predictive value 89.5% (95% CI 70.4–96.8). Agreement of pCLE and histopathological findings was 86%.

Conclusion: pCLE seems to be comparable to detection of persistent/recurrent IM after endoscopic treatment of BORN. Nevertheless, these results need to be confirmed in a larger cohort of patients. Supported by a grant from Ministry of Health of the Czech Republic, No. 16–27684A.

ClinTrials reg number: NCT02922049

Disclosure of Interest: All authors have declared no conflicts of interest.

P1473 FLEXIBLE ENDOCOSCOPIC SEPTUM DIVISION (FESD) OF ZENKER’S DIVERTICULUM: OUTCOMES FROM A TERTIARY CENTER USING A NEW SYMPTOMS SCORE

Humanitas Research Hospital, Rozzano/Italy

Contact E-mail Address: roberta.maselli@humanitas.it

Introduction: The Surgical Zenker’s sepsum division (ZSD) can be treated by flexible endoscopic septum division (FESD) as a minimally invasive alternative to surgery or to rigid endoscopic procedure. There is still a lack of standardization of the FESD as well as data on late outcome are scarcely reported. Moreover, ZD symptoms are differently reported in available literature and no specific scores have been yet validated.

Aims & Methods: We aim to report the outcome of all ZD treated by FESD in our institution by using a new symptoms score. We retrospectively reviewed consecutive patients with ZD treated by FESD in a single tertiary-care academic medical center between April 2014 and Feb 2017. All patients were included in a prospectively maintained database. A dedicated new score was created to obtain reliable and objective evaluation of outcome of our patients. This score (Milans-Zenker score, MZ-score) is based on the three main ZD symptoms: dysphagia, regurgitation and weight loss. The ZD score (maximum score, 9) is the sum of the symptom scores for dysphagia, regurgitation (for both: 0; absent; 1; occasional; 2; daily) and for weight loss (0, none; 1, <5 kg; 2, 5–10 kg; and 3, >10 kg). The main outcome was clinical success, defined as MZ score ≤2 at the latest follow up. Patient’s symptoms were evaluated at 1 month and at every 6 months after the procedure. Adverse events were recorded and classified as intraprocedural, postprocedural (<14 days), and late (>14 days).

Results: 100 patients underwent FESD, with a mean age of 70.3±12.2 years (range 39–95) and prevalence of male gender (66%). Twenty-nine (29%) of treated ZD were re-intervention: 20(69%) after previous FESD; 8 (27.8%) after previous surgery; 1 (3.4%) after previous surgery and FESD. Mean initial MZ score was 4.5±1.8 (range 1–8). Intradiprocedural bleeding was observed in 5 patients (5%), with all of successfully treated by clips. No postprocedural/late bleedings were recorded. One perforation was observed and treated conservatively. The mean follow up period was 14 months (range 3–35). Overall clinical success was obtained in 78.5% of patients. Mean post treatment ZD score was 1.3±1.5, significantly lower than initial MZ score (p < 0.0001).

Conclusion: FESD represents a safe and effective treatment for symptomatic patients with Zenker’s diverticulum. Our experience suggests that the MZ score could represent a useful tool to monitoring post-procedural symptoms and guide subsequent management.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1474 HOW ACCURATE ARE THE SYMPTOMS IN PATIENTS WITH FOOD IMPACTION AND FOREIGN BODIES INGESTION?

A. Laranjo1, J. Mocanu2, M. M. Carvalho1, S. Pires3, N. Veloso1, L. Gonçalves1, R. Godinho1, I. Medeiros1
1Gastroenterology Department, Hospital Espírito Santo de Évora, Évora/Portugal
2Hospital Espírito Santo, Évora/Portugal

Contact E-mail Address: anamalaranjo@gmail.com

Introduction: Food impaction (FI) and foreign body ingestion (FBI) remain the most frequent indications for emergency esophagegastroduodenoscopy. The symptoms in these patients are often nonspecific and their location is not immediately recognizable. The endoscopist should be confident with the endoscopic findings and to assess its management and complications. This was a retrospective uncenter cohort study including patients with suspected FI and FBI during three years (2013–2016). Statistic analysis were performed using IBM SPSS Statistics 22 with p < 0.05 deemed to be statistically significant.

Results: 198 patients were included (90 patients with FI, 70 patients with FBI, 38 patients with esophageal foreign body ingestion and 3 patients with FESD). The symptoms in patients with suspected FI and FBI were more frequent in the esophagus (83.3%) and FI was identified by esophagoduodenoscopy in the distal esophagus in 58.9% of those patients. There was more correlation between the location of symptoms and the endoscopic findings in patients with FI compared with the patients with FBI. The symptoms in patients with FI were predominantly localized in esophagogastric junction (83.3%) and FI was identified by esophagagogastroduodenoscopy in the distal esophagus in 58.9% of those patients. At comparison, the symptoms in patients with FBI were predominantly localized in esophagogastric junction (83.3%) and FBI was identified by proximal esophagus in 55.7% of those patients. There was more correlation between the location of the symptoms and the endoscopic findings in patients with FI compared with the patients with FBI (FI 65.6% VS 47.1%; p < 0.05). In FI patients, the most frequent symptoms were nausea (34.7%), abdominal discomfort (34.7%) and vomiting (22.9%). In FBI patients, the most common symptoms were nausea (51%) and vomiting (34%). Food impaction was not possible in 4 patients (5.7%). Major complications occurred in 0.5% (1 perforation).
Conclusion: In FI patients, the location of the symptoms has a better correlation with the endoscopic findings compared with FBI patients. The esophagohioido- neosophagectomy is safe and effective in patients with FI and FBI.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1475 GASTROINTESTINAL ENDOSCOPY UNDER SEDATION IS ASSOCIATED WITH PNEUMONIA IN OLDER INPATIENTS—RESULTS OF A RETROSPECTIVE CASE-CONTROL STUDY

C. M. Kollmann, W. Schmiegel, T. Brechmann
Department Of Gastroenterology And Hepatology, Berufsgenossenschaftliches University Hospital Bergmannsheil GmbH, Bochum/Germany

Contact E-mail Address: christopher.kollmann@rub.de

Introduction: Apparent aspiration is a notable adverse event during gastrointestinal (GI) endoscopy under sedation (GES)[1, 2], but about the incidence and the role of inappropriate aspiration is scarce. Furthermore, patients undergoing endoscopies experience respiratory symptoms such as coughing, shortness of breathing, fever and other respiratory adverse events within 24 hours relatively often in more than 5% [3]. Since coughing during endoscopy has been attributed to an increased risk of aspiration-related postprocedural infection [4] respiratory infections might be underreported. Additionally, patients in advanced age are not only determined as a high-risk group for GI adverse events following colonoscopies [5], but are also more likely to develop hospital-acquired pneumonia [2]. Therefore, the aim of the study was to determine the risk of pneumonia, lower respiratory infection (LRI) and systemic inflammatory activation after GIES.

Aims & Methods: A total of 250 consecutive inpatients who had undergone GIES during a hospital stay of at least three days were included in a retrospective cohort study. Age-, gender- and length of hospital stay-matched controls (ratio 1:1) who had not undergone any invasive procedure or sedation served as controls. Living situations of patients had to be available before and three and/or seven days after endoscopy. Primary objective was the occurrence of pneumonia in general and older patients (>65 years). Secondary objectives were the development of LRI, elevation of inflammatory markers (CRP and WBC), initiation of antibiotic treatment, pathogen detection and pulmonary infiltration. Statistics included χ2 test, paired t-test, ANOVA, multiple linear regression analysis.

Results: No significant differences for the occurrence of pneumonia (1.6%, GIES group vs. 0.4%, control group, p = 0.18, χ2 test) and LRI (4.8% vs. 2.0%, p = 0.041 in general, but in the older age group (2.6% vs. 0.0%, p = 0.041, and 7.8% vs. 2.5%, p = 0.034, respectively) were detected. Inflammatory parameters were significantly increased after GIES, particularly on day three. GIES patients received antibiotic treatment more frequent while pulmonary infiltration did not differ.

Conclusion: This study confirms a higher risk of pneumonia due to GIES in the advanced aged population. In general, patients are more likely to develop inflammation and to receive antibiotic treatment suggesting an increased risk of radiologically non-visible inflammation due to micro-aspiration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
3. Friedrich K, Scholl SG, Beck S, et al. Prospective Description of Coughing, Hemoptoic oesophagectomy with gastric transposition are limited. Although commonly only determined as a high-risk group for GI adverse events following colonoscopies [5], but are also more likely to develop hospital-acquired pneumonia [2].

P1477 AN ANALYSIS OF COMPLICATIONS FOLLOWING ENDOSCOPIC SUBMUCOSAL DISSECTION IN A WESTERN SETTING—MAKING THE CASE FOR A SHORTER LENGTH OF STAY

S. Subramaniam1, K. Kandiah1, G. Longcroft-Wheaton2, P. Bhandari1
1Gastroenterology, Queen Alexandra Hospital, Portsmouth/United Kingdom
2Gastroenterology, Portsmouth Hospitals NHS trust, Hampshire/United Kingdom

Contact E-mail Address: shar811@gmail.com

Introduction: Endoscopic submucosal dissection (ESD) is an established technique for the treatment of gastrointestinal (GI) neoplasia in Japan. The high uptake and mastery of the procedure there was in part enabled by the high prevalence of early gastric cancer in Japan. Conventional practice in Japan is to admit patients for 3 to 5 days after the ESD procedure for monitoring in view of the risk of serious complications which is between 1–10%. Cost and resource provision in a publicly-funded Western healthcare setting favours shorter planned stays following ESD.

Aims & Methods: We aimed to identify the type and site of lesions being treated in a Western setting as well as the rate, timing and predictors of complications in order to evaluate current admission practice. An electronic database of all ESD procedures performed in our academic institution from 2012–2017 was analysed. Parameters were the number, type, onset and management of complications following ESD. Significant complications (bleeding and perforation) necessitating hospital admission were categorised as early (within 24 hours) and delayed (24 hours to 28 days) post procedure.

Results: A total of 410 ESDs were performed within the time period (225 colorectal, 117 oesophageal, 52 gastric and 16 duodenal). There were 21 complications (4.8% vs. 2.0% early (p = 0.041, and 4.8% vs. 2.0% delayed (p = 0.034)), 6.1% vs. 2.0%, p = 0.1). 6

Conclusion: This data confirms a higher risk of pneumonia due to GIES in the advanced aged population. In general, patients are more likely to develop inflammation and to receive antibiotic treatment suggesting an increased risk of radiologically non-visible inflammation due to micro-aspiration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Reference numbers are incomplete.

P1476 SYMPTOMATIC RESPONSE OF PYLORIC PNEUMATIC DILATATION, BOTTOX INJECTION OR COMBINATION THERAPY IN PATIENTS WITH GASTROPARESIS OR DELAYED GASTRIC EMPTYING POST-GASTRIC TRANSPOSITION

A. Gupta, M. A. Eversson, R. Haidry, M. Banks, S. Bown, D. Graham, R. Ganatra, A. Ramasubramani, L. Lovat, R. Swes
Department Of Gastroenterology, University College London Hospital, London, United Kingdom

Contact E-mail Address: absgupta@aol.com

Introduction: Therapeutic options for gastroparesis or delayed emptying following gastrointestinal surgery are limited. Although commonly performed without a defined indication, 2 patients (33%) had a partial or good response, both of which had combination therapy. Partial or good response was observed in 93% (13/14); treatment with Botox alone (18 procedures) or as part of combination therapy

Aims & Methods: 33 patients (13 male; mean age 45, range 17–80) underwent a total of 113 endoscopic procedures over 2 years. Treatments were either 100 IU units of Botox injected into 4 quadrants of the pylorus or pneumatic dilatation (PD) incrementally up to 16–20 mm (Hercules; Cook Medical). Patients with gastric malignancy, previous pyloric surgery or no documented follow-up were excluded. Post-therapeutic responses were assessed at first follow-up post procedure and graded as ‘good’, ‘partial’ or ‘none/poor’. Patients were grouped according to type of therapy and indication.

Results: There were no immediate or late complications observed. 31 procedures were performed for gastroparesis with a mean post-procedure follow-up of 11 weeks. Overall, a partial or good response was observed in 81% (25/31). Specific treatment with Botox alone (18 procedures) or as part of combination therapy (10 procedures) led to a good or partial response in 86% (24/28) compared to 33% (1/3) who had PD alone (p = 0.03). 14 procedures were performed in the post-surgical group with a mean post-procedure follow-up of 10 weeks. Overall, a partial or good response was observed in 93% (13/14); treatment with Botox alone or as part of combination therapy led to a good or partial response in 100% (10/10) compared to 75% (3/4) who had dilatation alone (p = 0.1). 6 therapies were performed without a defined indication, 2 patients (33%) had a partial or good response, both of which had combination therapy.

Conclusion: Pyloric intervention with Botox, PD or combination therapy are safe and effective treatment options for patients with gastroparesis or delayed gastric emptying following gastric transposition. Subjective treatment without a clear indication shows little improvement.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Reference numbers are incomplete.
factor for delayed bleeding. Given that the majority of delayed complications occurred within 5 post-procedure, a standardized 5 day inpatient stay would prove futile in our cohort.

Disclosure of Interest: P. Bhandardar: Educational grants from Fujifilm, Olympus and Pentax. All other authors have declared no conflicts of interest.

P1478 PREDICTIVE FACTORS AND MANAGEMENT OF REFRACTORY BENIGN OESOPHAGEAL STRICTURES

M. Moura, C. Simões, C. Noronha Ferreira, P. Santos, J.P. Freire, J. Lopes, L. Carrilho Ribeiro, J. Velosa
Gastroenterologia E Hepatologia, Hospital de Santa Maria - Centro Hospitalar Lisboa Norte, EPE, Lisboa Portugal

Contact E-mail Address: cmiguelmour@gmail.com

Introduction: The optimal management and the predictive factors of response to endoscopic dilation of refractory benign oesophageal strictures remains controversial.

Aims & Methods: To evaluate the prevalence and factors predicting response to treatment of benign refractory oesophageal strictures with scheduled endoscopic dilatations

Results: A retrospective analysis of 75 patients submitted to scheduled endoscopic dilation of benign oesophageal strictures between October 2010 and November 2016. Strictures were classified as refractory when ≥3 endoscopic dilations were needed with at least one dilation achieving ≥15mm of diameter during the course of management of the oesophageal strictures.

Conclusion: In our study sample with multiple aetiologies of benign oesophageal strictures, only the maximum dilation diameter and local injection of corticosteroids were associated with improved dysphagia scores.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1480 TRENDS IN CERTIFICATION FOR GASTROINTESTINAL ENDOSCOPY AND VARIATIONS BETWEEN TRAINEE SPECIALTIES: RESULTS FROM THE UK TRAINEE ENDOSCOPY DATABASE

*JAG Working Group For The Quality Assurance Of Training, Joint Advisory Group, London/United Kingdom

Contact E-mail Address: keith@siau.org

Introduction: In the UK, endoscopy certification is overseen by the Joint Advisory Group. Since 2011, certification has been awarded for upper and lower GI endoscopy online via the JAG Electronic Training System (JETS). We aimed to analyse trends in endoscopy e-certification, and assess for differences between trainees in gastroenterology (GI), surgical (GS) and non-medical specialties (NME).

Aims & Methods: We prospectively identified trainees awarded certification for gastroscopy, flexible sigmoidoscopy (FS) and colonoscopy from the JETS database. For each specialty, we collected data on lifetime procedural counts, formal assessments, and key performance indicators (KPIs) at the time of certification. Comparisons between specialties were analysed using a combination of chi², Mann-Whitney and median tests.

Results: Between June 2011-Dec 2016, 2857 applications were awarded certification. Most certifications were awarded to GI trainees (Figure 2). Median procedural numbers (p < 0.001) and formatative DOPS counts (p < 0.001) pre-certification varied for each modality in the order of NME > GI > FS. Caecal intubation rates (CIR) at full certification were similar between GI (95.6%) and FS (95.6%, p = 0.81), but lower in NME (93.6%, p = 0.002 vs. GS, p = 0.006 vs. GI), despite no differences at provisional certification (median CIR 95.6%, p = 0.32). Rates of D2 intubation (median 98.7%) varied across groups (GS > GI > NME, p = 0.002). Certification awarded at first attempt were similar across specialties (mean 89.4%, p = 0.19), but varied for gastroscopy (NME 95.5%, GS 90.1%, GI 89.7%, p = 0.01).

Conclusion: Despite variations amongst trainee specialties, endoscopy certification is a transparent and robust benchmark for assessing competency, as evidenced by recent changes to certification, and if variations in KPIs exist following certification.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1479 LOCAL CORTICOSTEROIDS IMPROVE EARLY CLINICAL OUTCOMES IN PATIENTS UNDERGOING ENDOSCOPIC DILATION OF BENIGN OESOPHAGEAL STRICTURES

M. Moura, C. Simões, C. Noronha Ferreira, P. Santos, J.P. Freire, J. Lopes, L. Carrilho Ribeiro, J. Velosa
Gastroenterologia E Hepatologia, Hospital de Santa Maria - Centro Hospitalar Lisboa Norte, EPE, Lisboa Portugal

Contact E-mail Address: cmiguelmour@gmail.com

Introduction: Local corticosteroids have been shown to improve outcomes in patients undergoing endoscopic dilation of peptic strictures.

Aims & Methods: To evaluate factors predicting early clinical response to endoscopic dilation of benign oesophageal strictures. Retrospective analysis of 75 consecutive patients submitted to scheduled endoscopic dilation between October 2010 and November 2016. Clinical improvement was defined as dysphagia grade ≤1. IBM SPSS®/21 was used for statistical analysis.

Results: The study sample included 42 (56%) male patients and the mean age was 52±18 years. Dysphagia scale at baseline: solids (1)–17 (22.7%), semi-solids (2)–23 (30.7%), liquids (3)–23 (30.7%) and complete (4)–12 (16%). Body mass index (BMI) at baseline was 22±5 Kg/m². The aetiology of the benign strictures was: surgical–31 (41.3%), peptic–15 (20%), caustic–10 (13.3%), radiotherapy–10 (13.3%) andthers–9 (12%). The location of the oesophageal strictures was as follows: proximal: third–34 (45.3%), middle third–12 (16%), distal third–27 (36%) and multiple locations–2 (2.7%). Stricture type: simple–44 (58.7%), complex–31 (41.3%). Patients underwent a median of 4 (1–26) endoscopic dilation over a median period of 19 weeks (1–229). Dilations were done with Savary-Gilliard dilators–35 (46.7%), TTS-balloons–24 (32%) or both–16 (21.3%). The mean dilation diameter of achieving was 15.7±2.2 and a dilation diameter of ≥15mm was achieved in 56 (74.6%) patients. Local injection of corticosteroids (dexamethasone 5 mg) was performed at least once in 39 (52%) patients and in ≥25% of dilations in 39 (52%) patients. From the study sample, 25 (33.3%) patients fulfilled criteria of refractory strictures. In this subgroup, there was a significant association with post-surgical aetiology (p = 0.042), lower rate of local injection of corticosteroids (p < 0.001) and higher dilation diameter (p < 0.001). Refractory strictures were significantly associated with the need for local corticosteroid injection (OR 8.95, 95%CI 3.35–23.0, p = 0.002) by binary logistic regression analysis. However, none of the other factors were found to be independent predictors of response to therapy.

Conclusion: Surgical aetiology was significantly associated with refractory benign oesophageal strictures and these patients were significantly more likely to require local corticosteroid injections during scheduled endoscopic dilations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1481 EFFICIENCY AND SAFETY OF ENDOCUTANCibal PAPILLECTOMY FOR TREATMENT OF DUODENAL PAPILLA TUMORS

Y. Chiu, M. Xu, P. Zhou, C. Zhang
1Endoscopy Center And Endoscopy Research Institute, Fudan University Zhongshan Hospital, Shanghai/China

Contact E-mail Address: xu.meidong@zs-hospital.sh.cn

Introduction: A duodenal papilla tumor is an uncommon neoplasm in the upper gastrointestinal tract. In the early stage, patients often have no complaints and the tumors are usually occasional found during gastroduodenoscopy examination. Endoscopic papillectomy can be achieved with curative resection for benign adenoma and some early papillary carcinoma. However, some complications are accompanied with the procedure, like pancreatitis and bleeding. This retrospective study is to evaluate therapeutic effect and safety of endoscopic papillectomy on duodenal papilla tumors.

Aims & Methods: From June 2009 to November 2016, the information of patients who received endoscopic papillectomy was recorded, which included basic characteristics and clinical outcomes, such as recurrence rate, bleeding, pancreatitis. Among 31 cases of patients (totally 40 cases) received endoscopic papillectomy. The procedure was completed with gastroscope in 32 cases and duodenoscope in 8 cases. Endoscopic mucosal resection (EMR), endoscopic piecemeal mucosal resection (EPMR) and endoscopic submucosal dissection (ESD) was performed in 21, 17 and 2 cases respectively. None of the lesions invaded the submucosal layer.

bleeding (≥ 1). Surgery was performed in 10 patients (13.3%) (refractory strictrues) and post dilation perforation (n = 3). Improvement of dysphagia symptoms was only associated with the maximum dilation diameter (p = 0.026) and local injection of corticoids (p < 0.001) as confirmed by binary logistic regression wherein both maximum dilation diameter (OR: 4.92, 95%CI 1.05–20.4, p = 0.027) and topical injection of corticosteroids (OR: 7.22, 95%CI 0.021–0.55, p = 0.007) were strongly associated with improved dysphagia scores.

Conclusion: In our study sample with multiple aetiologies of benign oesophageal strictures, only the maximum dilation diameter and local injection of corticosteroids were associated with improved dysphagia scores in patients undergoing endoscopic dilation of benign oesophageal strictures.

Disclosure of Interest: All authors have declared no conflicts of interest.
Pancreatic stents and biliary stents were inserted in 9 and 12 patients respectively. In general, 5% (2/40) and 12.5% (5/40) cases had intraoperative and postoperative bleeding respectively, 20% (8/40) cases suffered from pancreatitis, of which mild, moderate and severe happened in 3, 4 and 1 cases. Six patients had tumor recurrence. And 3 patients received repeat endoscopic papillectomy, two received pancreatie-coduodenectomy and one received no other treatments with close follow-up. Two patients died from failures of treatment for papillary tumors and one patient died due to other unrelated cause.

Characteristics and adverse events of endoscopic papillary in cases

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male Female</th>
<th>29 8</th>
</tr>
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<tbody>
<tr>
<td>Age (years, mean ± SD)</td>
<td>55.1 ± 10.0</td>
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</tr>
<tr>
<td>Endoscope type</td>
<td>Gastroscope Duodenoscope</td>
<td>32 8</td>
</tr>
<tr>
<td>Rejection method</td>
<td>EMR EPMR ESD</td>
<td>21 17 2</td>
</tr>
<tr>
<td>Pathological results</td>
<td>LGD, HGD, Tis, Tim, Tsm, Non-tumor</td>
<td>12, 24, 0, 2, 0, 2</td>
</tr>
<tr>
<td>Longer diameter, Shorter diameter</td>
<td>2.02 ± 0.88, 1.50 ± 0.69</td>
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</tr>
<tr>
<td>Biliary Stent</td>
<td>Yes, No</td>
<td>12, 28</td>
</tr>
<tr>
<td>Pancreatic stent</td>
<td>Yes, No</td>
<td>9, 31</td>
</tr>
<tr>
<td>Hospital stays (days, mean ± SD)</td>
<td>6.7 ± 13.4</td>
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<tr>
<td>Follow-up time (months, mean ± SD)</td>
<td>36.6 ± 28</td>
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<tr>
<td>Adverse events</td>
<td>Intraoperative bleeding</td>
<td>5% (2)</td>
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<tr>
<td>Postoperative bleeding</td>
<td>12.5% (5)</td>
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<tr>
<td>Perforation</td>
<td>2.5% (1)</td>
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<tr>
<td>Cholangitis</td>
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<tr>
<td>Pancreatitis, Mild, Moderate, Severe</td>
<td>20% (8), 7.5% (3), 10% (4), 2.5% (1)</td>
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<tr>
<td>Recurrence</td>
<td>16.2% (6)</td>
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<tr>
<td>Surgery</td>
<td>7.9% (3)</td>
<td></td>
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<tr>
<td>Mortality</td>
<td>7.9% (3)</td>
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</table>

Conclusion: Endoscopic papillary is proved to be efficient in treating papilla tumours without submucosal invasion. However, adverse events like pancreatitis and bleeding should be taken seriously and managed properly.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1484 PROTECTIVE VACUUM SPONGE IMPLANTATION AND CONTINUOUS EVACUATION OF BILE AND PANCREATIC JUICE FOR PREVENTION OF SECONDARY PERFORATION AFTER PRIMARY SUCCESSFUL ENDOSCOPIC RESECTION OF WIDESPREAD D2/D3 DUODENAL AND PAPILLARY ADENOMATA

J. Hochberger1, M. Loss2, C. Von Heymann3, C. Jung2, E. Wedl2, M. Hofmeyer1
1Gastroenterology, Vivantes Klinikum Friedrichshain, Berlin/Germany
2Visceral Surgery, Vivantes Klinikum Friedrichshain, Berlin/Germany
3Anesthesiology, Vivantes Klinikum Friedrichshain, Berlin/Germany
4Service D’endoscopie Digestive, Hôpitaux Universitaires Strasbourg, Strasbourg/France

Contact E-mail Address: jehochber@mac.com

Introduction: Endoscopic resection of duodenal adenomata carries an increased risk of perforation compared to other locations in the upper or lower GI tract.1,2

Additionally in endoscopic resection of widespread adenomata (Spiegelman III/IV) at the level of D2/D3 there is an increased risk of secondary perforation due to auto-digestion of the denuded duodenal wall by pancreatic enzymes and bile independent of the primary endoscopic resection method. We recently reported of the successful implantation of a mini-vacuum sponge with extended length of the suction tube and reduced in volume compared to a standard esophageal vacuum sponge.3

Aims & Methods: From September 9th, 2015 to March 20th, 2017 endoscopic resection of widespread duodenal or papillary adenomata of >2 cm in D2/D3 was performed in five patients. There was a surgical indication for Whipple’s resection as primary intervention or in case of failure in all patients. All patients agreed and gave their informed consent to the procedure.

Results: Five patients with widespread duodenal adenomata were included (2x papilla, 3x D2/D3 extrapapillary adenomata; 3x tubular; 3x HGIN, 2x LGIN). The macroscopic mean maximum diameter and perpendicular diameter of the lesions were 4 x 2.8 cm (largest 7.5 x 3.7 cm; smallest 2.2 x 1.8 cm). In all cases the implantation of a mini-vacuum sponge (EVAc) reduced in volume to 1.2 x 1.5 cm (dia, length) with extended suction tube; Braun Corp., Melsungen). Continuous suction was applied over several days (~125 mm Hg; ActiVac, KCI Medical, Wiesbaden) depending on the size of the resection area and healing status (n = 10 days, 4–14 days). An endoscopic/radiologic vacuum sponge exchange was performed every 3–5 days. In 4 cases additional atrumatic over-the-scope-clips (OTSC, Ovesco Tuebingen) were placed during the procedure and in 5 cases additional hemoclips were applied to secure the wall and for hemostasis. In 5/5 cases (100%) an excellent healing could be observed during follow-up. No patient had to be operated during or following the intervention (FU 2–14 mo.). In all cases the resection was curative with ‘en bloc’ resection, though in one case the specimen ruptured during retrieval into three parts (4x HGIN, 1x LGD: 4x R0, 1x Rx). In one case 10 days after resection an acute bleeding occurred with the need of endoscopic clipping and prophylactic radiologic coiling of the gastroduodenal artery with uneventful course. In a second case a minor bleeding occurred without necessity of transfusion during ablation of an OTSC three mo after the primary intervention. All patients were asymptomatic during follow-up.

Conclusion: The endoscopic resection of large duodenal adenomata in D2/D3 is feasible and was safe in our collective using the application of a duodenal mini-vacuum local drainage of bile and pancreatic juice as alternative to Whipple’s resection. The results in this first small collective should be reproduced in a prospective multicentric trial. 

Disclosure of Interest: J. Hochberger: Fujifilm Europe: research support, honoraria for lectures Boston Scientific Europe and US; research support, honoraria for lectures ERBE Elektromedizin: research support All other authors have declared no conflicts of interest.

Contact E-mail Address: keith@siau.org

Introduction: DOPS are validated tools for assessing competence in endoscopy. Previously, DOPS were scored on a 4-point competence-based scale, with scores of 3 and 4 signifying competence. In July 2016, the DOPS rating scale changed to a 4-point scale, hence a score of 4 on new DOPS = Scores 3 or 4 on old DOPS, and scores on the new and old DOPS compared using the Mann-Whitney U-test. Reference: P1177 DOPS (77.7% new and 22.3% old) were included for analysis.

Overall, there were variations in distributions of all scores (p < 0.001) between forms (Figure 1). Compared to new DOPS, scores of 1 were underutilised on old DOPS (0.6% vs. 3.0%, p < 0.001). Frequencies of low scores (pooled scores of 1 & 2) were similar for gastroscopy (p = 0.33) and sigmoidoscopy (p = 0.34), but not for colonoscopy (11.9% vs. 13.9%, p < 0.001) and polypectomy (new 6.8% vs. 19.9%, p < 0.001). Trainees on old DOPS were more likely to be rated as competent (score 3 or 4) compared to new DOPS (86.4% vs. 55.8%, p < 0.001).

On subgroup analysis, this was evident for gastroscopy (86.3% vs. 49.1%, p < 0.001), colonoscopy (86.1% vs. 58.2%, p < 0.001), sigmoidoscopy (90.6% vs. 62.0%, p < 0.001), but not polypectomy (80.1% vs. 67.9%, p = 0.12).

Conclusion: Endoscopy assessors are applying a greater range of scores using a new DOPS rating scale based on degree of supervision, in two cohorts of trainees matched for experience. This indicates better construct validity with the new rating scale. Further work is underway to determine the reliability of the new DOPS to inform summative assessment and certification for UK endoscopy trainees.

Disclosure of Interest: All authors have declared no conflicts of interest.
References


P1485 ENDOSCOPIC CLOSURE OF ACUTE PERFORATIONS OF THE GASTROINTESTINAL TRACT IN ANIMAL MODELS: A SYSTEMATIC REVIEW AND META-ANALYSIS

A. Gahle1, N. Ammar2, M. El Houssein2, M. Rutter3
1East Kent University Hospitals NHS, Margate/United Kingdom
2Public Health Department, Ain Shams University, Cairo/Egypt
3Gastroenterology, University Hospital of North Tees, Stockton on Tees/United Kingdom

Contact E-mail Address: ahmedgahle@hotmail.co.uk

Introduction: Acute perforations are one of the recognized complications of both diagnostic and therapeutic gastrointestinal endoscopy. For decades, surgical treatment has been the standard of care, but endoscopic closure has become a more popular approach due to feasibility and the reduction of the burden of surgery, combined with the availability of various endoscopic closure devices.

Aims & Methods: We aimed to assess the technical and clinical success and safety of endoscopic closure, in total, and for each endoscopic device used in closing acute perforations in animal models. Medical literature (Choiry library: EMBASE, MEDLINE) from 1966 till September 2016 was searched. A systematic review and meta-analysis were performed on studies reporting technical and clinical success of endoscopic closure of acute perforations, according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines.

Results: 46 studies on animal models were identified. 15 studies, including 4 prospective studies in human is needed. Of these studies, 46 studies on animal models were identified. 15 studies, including 4 prospective studies in human is needed. Further confirmation from prospective studies in human is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1486 RISK FACTORS FOR COLORECTAL POLYP IN ASYMPTOMATIC YOUNG ADULTS UNDER THE AGE OF 50

Y. Myung
hyundai UVIS hospital, Incheon/Korea, Republic of

Contact E-mail Address: dittomyung@gmail.com

Introduction: Current guidelines recommend that adults age 50 to 75 be screened for colorectal cancer (CRC). However, CRC incidence rates have increased among young adults and have decreased among older adults.

Aims & Methods: The aim of this study was to investigate the risk factors of colorectal polyps in young adults aged <50 years. From January 2016 to December 2016, we compared the risk factors of colorectal polyp group with non-polyp group in patients aged <50 years who underwent screening colonoscopy. The risk factors examined included body mass index (BMI), meto-sodium, smoking, alcohol consumption, and family history.

Results: Of the 1862 patients, prevalence of colorectal polyps and adenomatous polyps were 13.1% and 7.8%, respectively. Multivariate analysis revealed that metabolic syndrome (OR, 1.89; 95% CI, 1.13–3.17, P = 0.015) was independent predictor for colorectal polyp. Age over 50 years (OR: CI, 1.48 4.14) and metabolic syndrome (OR, 1.59, 95% CI, 0.87–3.30) were independent predictors for adenomatous colorectal polyps.

Conclusion: Metabolic syndrome is risk factor of colorectal polyps in young adults aged <50 years. Age over 40 years old is additional risk factor of adenomatous polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1487 COMPARISON BETWEEN AN ASYMMETRIC (SMALL DOSE IN THE MORNING) AND A SYMMETRIC SPLIT-DOSE REGIME OF POLYETHYLENE GLYCOL PLUS BISACODYL FOR BOWEL PREPARATION FOR SCREENING COLONOSCOPY: A RANDOMIZED NON-INFERIORITY CLINICAL TRIAL

P. Andreozzi1, C. Bezzio2, G. De Nucci3, S. Saibeni4, M. Devanji5, I. Arena6, R. Reati1, E. Mandelli1, D. Redaelli1, D. Morganti1, B. Omazzi1, G. Manes1
1Clinical Medicina And Surgery, University Of Naples 2 Federico II, Naples/Italy
2ASST Rhodense, Garbagnate Milanese/Italy
3Clinical Medicina And Surgery, University Of Naples 2 Federico II, Naples/Italy

Contact E-mail Address: paoloandre85@gmail.com

Introduction: Bowel cleansing has a critical role to increase the quality and effectiveness of colonoscopy. International guidelines recommend the use of split-dose regimens of PEG solutions. However, the adoption of split dose regimens in clinical practice remains sub-optimal, in particular in early morning.

Aims & Methods: We aimed to compare the efficacy of bowel preparation using an asymmetric split-dose regimen (approximately 25% of the dose is given on the day of the procedure and 75% of the dose is given on the day before) with the standard split-dose regimen in patients undergoing screening colonoscopy. We prospectively enrolled consecutive outpatients undergoing screening colonoscopy. All subjects received a split-dose preparation with a 2L PEG-citrate-simethicone plus Bisacodyl. Patients were randomly assigned to: group A, asymmetric split dose regimen (1.5 L of PEG + bisacodyl the day before and 0.5 L 3 hours before colonoscopy); group B, symmetric split dose regimen (1 L of PEG + bisacodyl the day before and 1 L 4 hours before colonoscopy). Bowel preparation was evaluated using the Boston Bowel Preparation Score (BBPS) score. The primary endpoints were the proportion of adequate bowel cleansing (BBPS ≥ 2) and failure of bowel cleansing (BBPS = 1). Moreover, all patients filled in a nurse-administered questionnaire assessing compliance, tolerability and safety of bowel preparation. The threshold for statistical significance in this study was p = 0.05 and a 10% margin was used to demonstrate non-inferiority of asymmetric versus symmetric split-dose regimen.

Results: 179 patients were enrolled (mean age 60 ± 8 years, males 56%, 88 in group A and 91 in group B. Split-dose was taken by 76/88 and by 77/91 patients in group A and B, respectively (85.2% vs 88.5%, p = 0.831). Failure of cecal intubation occurred in 1 patients for each group. In the ITT analysis, bowel cleansing was considered adequate in 71/76 (93.4%) and 70/77 (90.9%) patients respectively in group A and B (p = 0.765). BBPS total score was similar in group A and B (6.1 ± 1.2 vs. 6.9 ± 1.4, p = 0.386). No differences were observed regarding adenoma detection rate [32/76 (42.1%) vs 35/77 (45.4%); p = 0.745] and scores of each colon segment. The full amount of product and adjunctive fluids were taken by 68/76 (89.4) and 71/77 (92.2%) (p = 0.158) in group A and B, respectively. Tolerability and occurrence of adverse events were similar in the two groups.

Conclusion: An asymmetric (low morning-dose) split-dose preparation with a low volume formulation with additional Bisacodyl is not inferior to the standard split-dose regimen in achieving an adequate bowel cleansing in patients undergoing screening colonoscopy. A lower amount of preparation in the morning allow to the patients to wake up later; this regimen could be thus preferred by patients undergoing colonoscopy early in the morning. Further study are needed to determine the efficacy and tolerability of the asymmetric preparation for colonoscopy scheduled in early morning.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1488 SINGLE BALLOON OVERTURE-GUIDED COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A NEW APPROACH TO MANAGEMENT OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION

T. Maehata1, Y. Ochial2, T. Akimoto3, Y. Mitsuanga4, Y. Kiguchi5, A. Fujimoto6, O. Goto7, T. Nishizawa8, T. Uraoka8, N. Yahagi8
1Cancer Center, Keio University, School of Medicine, Tokyo/Japan
2Gastroenterology, National Hospital Organization Tokyo Medical Center, Tokyo/ Japan

Contact E-mail Address: tmaehata@marianna-u.ac.jp

Introduction: Colorectal endoscopic submucosal dissection (ESD) is a technique with remarkably greater difficulty than upper gastrointestinal ESD because of unstable maneuvers and inherent anatomic variability in the colon. Thus, aiming at reducing these restrictions, we have used single balloon (SB) overtube to assist colorectal ESD in cases considered to have difficult operability. In this study, to evaluate the usefulness of a single balloon overtube to assist colorectal ESD.
Aims & Methods: The study included 35 patients with 39 colorectal lesions who underwent ESD (group SB) or did not undergo ESD (group NSB). The mean duration of the lesions in group NSB was significantly longer in group SB (median, 27.5 mm vs 10.6 mm; p < 0.005). No significant differences were found in en bloc resection, complete resection, postoperative bleeding, and perforation rates. No accidental symptom associated with balloon endoscopy was observed.

Conclusion: The reduction of balloon overture can be expected to improve not only access to the lesion but also facilitate scope manipulation for colorectal ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest:

References

Haute Autorité de Sante - Quand faut-il faire une coloscopie de controle aprés une polypectomie?


Aims & Methods: We aimed to add a 360-degree multi-assessor rating scale (MARS) to provide a global assessment of ENTS skills to the existing KPI panel correlating the results against existing caecal intubation rate (CIR) and polyp detection rate (PDR). The validated MARS tool assesses 4 ENTS domains. The main limitation of this study is the endpoint interval after polypectomy and useful to anticipate and prevent complications in therapeutic procedures, for it has been proven that polyp size is one of the main risk factors of complications (bleeding, perforation). Nevertheless, a high degree of subjectivity exists (especially overestimation of polyp size) in polyp size estimation because of a lack of validated and reproducible measurement methods. The aim of this study was to compare a computer-aided polyp measurement (CAPME) to an unassisted visual estimation (UVE) and an endoscopic reference measurement (ERM).

Aims & Methods: This prospective monocentric study was led between November 2015 and July 2016 in the University-affiliated Hospital of Clermont-Ferrand, the Blaise Pascalin (BPI) and the Image Science For Interventional Techniques (ISIT) research unit of Clermont-Ferrand (France). Video-endo-scopic procedures were recorded and secondly used for the CAPME method. The endoscopic acquisition protocol was standardized with a slow back-and-fourth movement of the endoscope and photography of each polyp was taken with an open biopsy forceps placed on the base of the polyp. ERM was then measured thanks to a simple rule of three knowing the fixed size of the open biopsy forceps (8 millimetres, mm). UVE was determined on the same photography without any measurement devices by two different endoscopists. All the measurements were realized blinded of the other results. Accuracy of the CAPME and UVE methods was defined by a variation less than 1 mm with the ERM. We used the Lin discordance correlation coefficient (CCC) to measure the agreement between the variables.

Results: 33 patients and 78 polyps were included in this study. The mean polyp size was 5.3 mm, with 73.1% (n = 57) of polyp less than 5 mm. The Lin CCC with the UVE method was 0.972 (95% CI 0.967-0.976; p < 0.001). Accurate polyp measurement was obtained for 68 polyps with CAPME method (87.2%) versus 36 polyps (71.8%) for UVE assessment (p < 0.01). Inaccuracy was in increasing proportionally to polyp size (40.9% of inaccurate polyp measurement for polyps greater than 10 mm) and we observed a systematic overestimation of supracentimetric polyps for UVE method. Unlike UVE, CAPME accuracy was not impacted by polyp size variation in our study (11.1%; 14.7% for polyps of >10 mm; 5–10 mm and <5 mm respectively).

Conclusion: To our knowledge, this is the first prospective study with significant data analysing a computer-aided polyp measurement in live colonoscopic procedures. In our study, this methods shows more accuracy than the visual estimation, which is the actual gold standard. The main limitation of this study is the endoscopic protocol (back-and-forth movement of the endoscope) that increases the endoscopic procedure. The use of DualFocus might be a solution to overcome this problem.

Disclosure of Interest: All authors have declared no conflicts of interest.

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domains—Communication (COMM), Situational Awareness (SATA), Leadership (LEAD) and Decision-making (DEC). Each MARS domain was represented by 10 items and is assessed on a 7-point scoring scale - endoscopists should score >90 in each domain (80–90 = need for improvement, <80 = suboptimal performance). CIR and PDR measures are routinely calculated for all colonoscopists using the HICCS Electronic Reporting System with manual validation of these data. Feedback is presented on a quarterly basis to practitioners—endoscopists are expected to achieve 90% CIR and 20% PDR. Correlation of these factors with practitioners ENTS scores were measured using the Pearson test.

ENTS, CIR and PDR scores by colonoscopist

<table>
<thead>
<tr>
<th>Operator</th>
<th>COMM</th>
<th>SITA</th>
<th>LEAD</th>
<th>T&amp;D</th>
<th>CIR(%)</th>
<th>PDR(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>96</td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>95.2</td>
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</tr>
<tr>
<td>2</td>
<td>94</td>
<td>94</td>
<td>87</td>
<td>95</td>
<td>83.6</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>99</td>
<td>100</td>
<td>97</td>
<td>98</td>
<td>90.8</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>91.5</td>
<td>47</td>
</tr>
<tr>
<td>5</td>
<td>79</td>
<td>73</td>
<td>73</td>
<td>85</td>
<td>91.7</td>
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<td>6</td>
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<td>34.5</td>
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<td>7</td>
<td>66</td>
<td>59</td>
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<td>69</td>
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<tr>
<td>8</td>
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<td>100</td>
<td>98</td>
<td>99</td>
<td>83.8</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>74</td>
<td>83</td>
<td>84</td>
<td>86</td>
<td>87.5</td>
<td>31.5</td>
</tr>
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</table>

Results: 9 endoscopists with known variability in standard colonoscopy KPIs consented to an assessment of ENTS using the MARS tool. Their ENTS scores were correlated with existing KPIs for each colonoscopist (Oct 2016–Mar 2017), and an overall positive correlation was observed between ENTS domains and CIR (COMM 0.58; SITA 0.66; LEAD 0.66; T&D 0.75) and PDR (COMM 0.49; SITA 0.55; LEAD 0.50; T&D 0.60). Three endoscopists were identified as having sub-optimal scores in all of the ENTS domains (operators 5, 7, 9). Taking into account important KPI thresholds 2 out of (33%) of these endoscopists identified were not meeting CIR targets (c.f. 66% of ENTS competent group) and one (33%) did not meet PDR targets (c.f. 0% in ENTS competent group).

Colorectal cancer (CRC) is the third most common cancer diagnosed in men and second most common cancer in women, affecting 1,361,000 people worldwide each year. CRC is a slow growing tumour that most commonly develops from polyps which form in the inner lining of the colon or rectum. The identification and removal of polyps whilst still in a precancerous state has been shown to be effective in reducing mortality from CRC.

Current clinical practice relies on white light (WL) colonoscopy for detecting colorectal polyps, but this is associated with a detection "miss-rate" of up to 26% for small (<10 mm) polyps and 2% for large polyps (van Rijn et al., 2006). Missed lesions (false negative results) puts patients at an unnecessary risk of late stage detection, when managed suboptimally. Poorly prepared patients in the bivariable study were: age (62.1 vs 56.8 years; p = 0.006), and colorectal cancer on colonoscopy (99% vs 81.82%; p = 0.010), and colorectal cancer on colonoscopy (99% vs 81.82%; p = 0.010).

Introduction: Safety and diagnostic accuracy of colonoscopy depend on the quality of bowel cleansing. Several factors have been reported to affect the quality of bowel cleansing, one of them being hospitalization.

Aims & Methods: We performed a prospective, randomised endoscopist blinded clinical trial between February 2016 and January 2017 included. Our aim was to compare visual educational booklet (EMI-137) enhanced level of cleanliness achieved in hospitalised patients who are undergoing a colonoscopy. Hospitalised patients >18 years undergoing colonoscopy were included. Exclusion criteria were: previous colonoscopy in the last 3 years, previous colectomy, known inflammatory bowel disease, urgent colonoscopy, dementia or refusal to participate in the study. Both groups received 4L polyethylene glycol solution. The intervention consisted of a visual educational booklet (visual cohort). Demographic data, personal history, reason for admission and for colonoscopy, work shift in which it was performed, and findings at endoscopy were collected. The Boston Bowel Preparation Scale (BBPS) was used to assess the bowel preparation. A BBPS score <6 or with at least one segment ≤4 was considered a poor preparation.

Results: One hundred and thirty six patients were included, 51.5% were male, with a mean age of 63.5 ± 17.6 years, and 95.9% of Spanish nationality. The mean body mass index was 27.3 ± 5.2 kg/m2. Educational attainment was below secondary education in 71.05%. Most patients were submitted from the internal medicine ward (72.1%), and the gastroenterology ward (21.32%). Anemia (31.62%), abdominal radiographic findings (16.91%), hematochezia/rectal bleeding (15.44%), diarrhea (11.03%), and abdominal pain (8.82%) were the most frequent indications. Patients characteristics, bowel cleansing and endoscopic findings are shown in table 1. The educational booklet did not suppose a difference in the bowel cleansing attained. Factors that impacted on the level of well and poorly prepared patients in the bivariable study were: age (62.1 ± 18.7 vs 70.5 ± 14.8; p = 0.0193), diabetes mellitus (72.33% vs 42.42%; p = 0.0042), hyper-tension (45.63% vs 69.70%; p = 0.016), cardiovascular disease 14.5% vs 36.3%; p = 0.006), and colorectal cancer on colonoscopy (99% vs 81.82%; p = 0.001).

EMI-137 had a cost of £11,245 per additional QALY. The cost-effectiveness of EMI-137 was sensitive to the time horizon of the model. EMI-137 remained within the NICE recommended cost-effectiveness threshold priced at £500 or less. Value of information analyses revealed that uncertainty in the cost-effectiveness of EMI-137 is primarily driven by uncertainty in the assumption that EMI-137 reduces the risk of future polyps after polypectomy. The results of this modelling exercise have since been used to inform the design of Phase II clinical studies.

Conclusion: The results of this early economic modelling exercise demonstrated that EMI-137 has the potential to be cost-effective for patients participating in the UK National Bowel Cancer Screening Programme. The value of information analyses have highlighted the key parameters for which further evidence is required, and this will be used to inform the design of future clinical studies.

Disclosure of Interest: A. Davies: I am the CMO at Edinburgh Molecular Imaging I. Wilson: I am the CEO at Edinburgh Molecular Imaging All other authors have declared no conflicts of interest.

Reference

Table 1: Baseline characteristics, bowel cleansing and endoscopic findings.

<table>
<thead>
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<th>PATIENTS N = 136 (n)</th>
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<th>Educational booklet</th>
</tr>
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<tr>
<td>Age(12)</td>
<td>66.2 (36.8-78.4)</td>
<td>63.3 (30.3-78.3)</td>
</tr>
<tr>
<td>BMI(13)</td>
<td>26.9 (24.2-29.7)</td>
<td>26.9 (23.5-29.9)</td>
</tr>
<tr>
<td>Diabetes Mellitus (136)</td>
<td>18 (25.71%)</td>
<td>19 (28.79%)</td>
</tr>
<tr>
<td>Hypercholesterolemia (136)</td>
<td>33 (47.14%)</td>
<td>33 (50%)</td>
</tr>
<tr>
<td>Smoking habit (136)</td>
<td>19 (27.14%)</td>
<td>15 (22.73%)</td>
</tr>
<tr>
<td>Alcohol consumption (135)</td>
<td>8 (5.89%)</td>
<td>4 (21.21%)</td>
</tr>
<tr>
<td>Cardiovascular disease(136)</td>
<td>11 (15.71%)</td>
<td>16 (24.24%)</td>
</tr>
<tr>
<td>Chronic kidney disease(16)</td>
<td>5 (3.14%)</td>
<td>9 (13.64%)</td>
</tr>
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Table 1 Continued

<table>
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<tr>
<th>PATIENTS N = 136 (n)</th>
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<th>Educational booklet</th>
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<tbody>
<tr>
<td>(n=70)</td>
<td>(n=66)</td>
<td>p</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmonary Disease (135)</td>
<td>6 (8.57%)</td>
<td>3 (4.55%)</td>
</tr>
<tr>
<td>Obstructive Sleep Apnea Syndrome (136)</td>
<td>8 (11.59%)</td>
<td>9 (13.85%)</td>
</tr>
<tr>
<td>Cirrhosis (136)</td>
<td>2 (2.86%)</td>
<td>3 (3.03%)</td>
</tr>
<tr>
<td>Stroke (135)</td>
<td>8 (11.59%)</td>
<td>12 (18.18%)</td>
</tr>
<tr>
<td>Mild dementia (136)</td>
<td>3 (4.29%)</td>
<td>1 (1.52%)</td>
</tr>
<tr>
<td>Obstructive Sleep Apnea Syndrome (136)</td>
<td>6 (8.57%)</td>
<td>3 (4.55%)</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmonary Disease (135)</td>
<td>6 (8.70%)</td>
<td>5 (7.58%)</td>
</tr>
<tr>
<td>Need for diaper during admission (128)</td>
<td>9 (13.64%)</td>
<td>10 (16.13%)</td>
</tr>
<tr>
<td>Colonrectal cancer</td>
<td>8 (11.43%)</td>
<td>8 (12.12%)</td>
</tr>
<tr>
<td>Adenoma detection rate</td>
<td>29 (41.43%)</td>
<td>18 (27.27%)</td>
</tr>
<tr>
<td>BBPS</td>
<td>2 (2–3)</td>
<td>2 (2–3)</td>
</tr>
<tr>
<td>BBPS*</td>
<td>7 (6–9)</td>
<td>6 (5.7–9)</td>
</tr>
<tr>
<td>Work shift (morning)</td>
<td>58 (82.86%)</td>
<td>59 (89.39%)</td>
</tr>
<tr>
<td>Other surgery (136)</td>
<td>21 (30%)</td>
<td>19 (28.79%)</td>
</tr>
<tr>
<td>Other gynecological surgery (136)</td>
<td>4 (5.71%)</td>
<td>5 (7.58%)</td>
</tr>
<tr>
<td>Hysterectomy (136)</td>
<td>8 (11.43%)</td>
<td>4 (6.06%)</td>
</tr>
</tbody>
</table>

Conclusion: The use of a visual educational booklet for the preparation of colonoscopies does not provide a significant improvement in hospitalized patients in our health area. Health and/or colon cancer were predictors of poor preparation for colonoscopy. An optimized preparation should be considered for this type of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1495 COMPETENCY OF ENDOSCOPIC NON-TECHNICAL SKILLS (ENTS) DURING ENDOSCOPY TRAINING
*JAG Working Group For The Quality Assurance Of Training, Joint Advisory Group, London/United Kingdom

Contact E-mail Address: keith@siau.org

Introduction: Endoscopic non-technical skills (ENTS), comprising of communication and teamwork, situation awareness, leadership and judgement and decision making, are recognised as indicators of quality endoscopy and patient safety. Since July 2016, electronic assessment forms (DOPS) for UK trainee endoscopists have been updated to include ENTERS as an assessable domain. We aimed to assess the uptake and distribution of ENTS scoring in DOPS and their correlation with other endoscopic skills, across all assessable endoscopic modalities.

Aims & Methods: We identified all DOPS submitted between July 2016 and Feb 2017 from the UK endoscopy trainee database (JETS) and acquired data on trainees, procedures and scores. We collated scores for each of the 4 assessable domains (pre-procedural, procedural, post-procedural and ENTERS) into overall outcomes of “not competent” (if any domain items required supervision) or “competent”, and compared this to the overall competence rating. Statistical analysis was performed using chi2 and regression modelling.

Results: 8601 DOPS were prospectively collected, with ENTS assessed in 99.3%. Competency rates of individual ENTS items are summarised in Table 1. Rates of overall ENTERS competency (defined as all items scoring competent) varied across procedures (p < 0.001): ERCP 39.8%, EUS 44.1%, gastroscopy 59.6%, colonoscopy 62.3%, PEG 71.1%, gastrointestinal bleed (71.5%), sigmoidoscopy 72.4% and polypectomy 73.2%. Scores by individual ENTS components are displayed in Table 1. Of DOPS awarded overall competency, 5.9% (240/4077) lacked full competence in ENTS (p = 0.10 across modalities). Across trainee specialties and endoscopic modalities, competency was greatest for “communication and teamwork” (77.1% overall), but least with ‘judgement and decision making’ (68.3%). Competency in ENTS increased with lifetime procedural count (OR 1.008 per increase in procedure, p < 0.001), and correlated strongly with other assessable domains, including overall score (p < 0.001). After adjusting for procedural count, factors predictive of ENTS competency included trainee seniority (OR for ST5 level: 1.96, p < 0.0001), surgical trainees (OR 1.21, p = 0.014), trainees performing polypectomy (OR 2.02, p < 0.0001), and higher procedures count (OR 1.93 per increase in DOPS, p < 0.001).

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Unadjusted ENTS scores by endoscopic modality.

<table>
<thead>
<tr>
<th>ENTS</th>
<th>Communication and Teamwork</th>
<th>Situational Awareness</th>
<th>Leadership</th>
<th>Judgement and Decision Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coloscopy</td>
<td>77%</td>
<td>75%</td>
<td>70%</td>
<td>68%</td>
</tr>
<tr>
<td>Dilatation</td>
<td>78%</td>
<td>78%</td>
<td>64%</td>
<td>64%</td>
</tr>
<tr>
<td>Polypectomy</td>
<td>82%</td>
<td>83%</td>
<td>81%</td>
<td>77%</td>
</tr>
<tr>
<td>ERCP</td>
<td>65%</td>
<td>62%</td>
<td>54%</td>
<td>48%</td>
</tr>
<tr>
<td>EUS</td>
<td>71%</td>
<td>71%</td>
<td>47%</td>
<td>59%</td>
</tr>
<tr>
<td>Sigmoidoscopy</td>
<td>83%</td>
<td>81%</td>
<td>79%</td>
<td>74%</td>
</tr>
<tr>
<td>OGD</td>
<td>73%</td>
<td>70%</td>
<td>67%</td>
<td>64%</td>
</tr>
<tr>
<td>PEG</td>
<td>80%</td>
<td>86%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Gastroduodenal Bypass</td>
<td>85%</td>
<td>83%</td>
<td>83%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Conclusion: ENTS is an assessable domain within endoscopy training, with scores that correlate with other procedure-related skills, demonstrating construct validity. Competence of ENTS develop with procedural count, and vary with trainee seniority and specialty. Longer term data are required to assess the impact of ENTS on certification.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1494 STUDY OF ULCERATIVE COLITIS COMPlicated by PRIMARY SCLEROSING CHOLANGIATIS
S. Murasugi, A. Ito, H. Kambayashi, M. Yonezawa, T. Ohmori, K. Tokushige
Institute of Gastroenterology, Tokyo Women's Medical University, Tokyo/Japan

Contact E-mail Address: murasun0305@yahoo.co.jp

Introduction: Primary sclerosing cholangitis (PSC) is often associated with autoimmune diseases, and approximately 70% of PSC patients in Europe/United States and 32% in Japan also have ulcerative colitis (UC). While the complication of UC is confirmed in about 5% of UC patients, the clinical features of UC associated with PSC differ from those of UC without PSC.

Aims & Methods: We investigated the clinical and colonoscopic features of patients with UC and PSC. We retrospectively examined the clinical features, including the clinical course and colonoscopic findings, of 25 colitis patients with UC attending our hospital between 2000 and 2016.

Results: The male:female ratio was 12:13 and the age at diagnosis of UC was 49 ± 15 years. PSC was the initial diagnosis in 12 patients (48%), while colitis was the first to be diagnosed in 4 patients (16%), and both diseases were found concurrently in 9 patients (36%). Among the 21 patients with the diagnosis of PSC, 10 patients (48%) were concurrently, 12 patients (57%) had the symptoms of UC and the latter was recognized by screening. There were 12 patients with UC (52%) and 11 patients with non-specific UC (48%). Among the 24 patients in whom the disease extent was assessed, 22 had pancolitis, 1 had left-sided colitis, and 1 had proctitis. Inflammation predominantly affected the right colon in 20,22 patients with pancolitis and also involved the terminal ileum in 9 patients (48%). The Mayo score for colonoscopic evaluation of UC was 1 in 16 patients (64%), 2 in 8 patients (32%), and 3 in 1 patient (4%). There were no rectal lesions in 10 patients (40%). Liver biopsy was performed in 17 patients, and Ludwig’s stage was Stage I in 1 patient (6%), Stage II in 12 patients (71%), Stage III in 3 patients (18%), Stage IV in 1 patient (6%). Ludwig’s stage did not correlate with the Mayo score. All patients with PSC and enterococci received oral ursodeoxycholic acid (UDCA), including 13 patients with UDCA only (52%), 2 patients with combination of sulfasalazine (SASP) (8%), in patients with combination of 5-aminosalicylic acid (5-ASA) (20%), 2 patients in combination with prednisolone (PSL) (8%), 1 patient with the combination of SASP+PSL (4%), and 2 patients with 5-ASA + PSL (8%). The UCDA dose was 300 mg in 2 patients (8%), 600 mg in 15 (60%), and 900 mg in 7 (32%).

Conclusion: In colitis patients with UC, there was no clear association between colonic disease activity and the severity of PSC. There was no sex difference and the age at diagnosis of PSC showed a bimodal distribution (30s and 60s). Pancolitis was very frequent and predominantly affected the right colon, but disease activity was low. Rectal lesions were mild or absent. About half of the patients had inflammation of the terminal ileum.

Disclosure of Interest: All authors have declared no conflicts of interest.
PI1496 MAKING COLONOSCOPISTS MORE AWARE OF THEIR ENDOSCOPIC NON-TECHNICAL SKILLS–IMPROVING FEEDBACK FORMATS DERIVED FROM THE MULTI-ASSISTANT RATING SCALE (MARS) TOOL

N. Hawkes, F. Kokwara, B. Davies, J. Cornish
Gastroenterology, Cymru Taf University Health Board, nr Cardiff/United Kingdom

Contact E-mail Address: neilhawkes@aol.com

Introduction: The development of Endoscopic Non-Technical Skills (ENTS) is associated with improved patient outcomes. Whilst ENTS domains have been incorporated into Joint Advisory Group (JAG) Direct Observation of Procedural Skills (DOPS) forms, used as training tools, knowledge of ENTS domains amongst independent practitioners varies. To improve performance in this area of practice requires validated measurement tools and specific feedback against which improvement can be measured. We have previously developed a validated 360-degree multi-assessor rating scale (MARS tool) based on experienced endoscopy assistant ratings for ENTS providing feedback on 4 ENTS domains. Each comprising 10 related but independent practice points. Providing an optimised feedback format for this data is likely to maximise the potential benefits of measuring ENTS performance.

Aims & Methods: We aimed to provide an optimised format for performance enhancing feedback in the ENTS domains and basis for specific auditable outcomes and performance indicators. Local colonoscopists gave consent to application of the ENTS questionnaire. The validated MARS tool assesses 4 ENTS domains – Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) and Judgement & Decision-making (J&DM). Each MARS domain in the administered questionnaire was represented by 10 items and is assessed on a 7-point scoring scale. We sought to develop 1) a format to illustrate an individual’s overall performance in each of the 4 main ENTS domains in comparison to other operators and 2) a detailed domain breakdown highlighting areas of underperformance 3) Collate feedback on the presentation formats.

Results: 9 endoscopists consented to an assessment of ENTS using the MARS tool. The MARS questionnaires were administered during January 2017–relating to the prior 3 months clinical practice. Acceptable performance thresholds were set as >90% good-excellent ratings in each domain. Need for improvement was defined as 80–90% good–excellent ratings (i.e. 10–20% average or poor ratings) and sub-optimal performance as 80% or less good-excellent ratings (i.e. >20% average-poor ratings). Good intra- and inter-rater reliability was demonstrated for these cut-off values during validation of the MARS tool. Scatter plots were used to present the overall domain ratings for COMM, SITA, LEAD and J&DM domains allowing comparison with other endoscopists. To provide more detailed domain-specific feedback to endoscopists an individual report is generated of 4 domain tables summarising the question items and using a ‘traffic-light’ display to help operators quickly identify those specific skills that require areas for improvement. The MARS reports represented the ENTS feedback helpful and indicated that it was ‘likely’ or ‘very likely’ to prompt an alteration in practice. A suggestion to add an additional column to the summary table indicated where performance level has changed in subsequent audit rounds is being considered.

PI1497 OUTCOMES OF ENDOSCOPIC RESECTION OF COMPLEX COLORECTAL LESIONS REFERRED TO A TERTIARY INSTITUTION AFTER FAILED ATTEMPTS AT RESSECTION OR ESSENTIAL TREATMENT A. Emmanuel, S. Gulati, M. Burt, B. Hayee, A. Haji
Endoscopy, King’s College Hospital, London/United Kingdom

Contact E-mail Address: aemmanuel@kch.nhs

Introduction: Substantial manipulation or sampling of large colorectal lesions prior to endoscopic resection can have significant effects on the feasibility and outcomes of endoscopic treatment. Failed attempts at resection and extensive sampling or tattooing into lesions prior to referral to a specialist centre are common in western practice. However, there are few data defining the scope of prior intervention and the effects on outcomes following endoscopic resection. We examined the effect of significant prior manipulation on the feasibility and outcomes of endoscopic resection of complex colorectal neoplasms in a UK tertiary referral centre.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. All lesions were assessed with magnification chromoendoscopy supplemented by colonic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique. Patients were grouped according to whether they had prior attempts at resection, heavy manipulation (≥6 biopsies or tattoo into the lesion), or minimal sampling only (<6 biopsies). Outcomes included initial successful endoscopic resection, complications, recurrence and the need for surgery.

Conclusion: Failed attempts at resection or heavy manipulation of lesions reduces the chance of achieving en bloc resection and increases the risk of complications and recurrence. Nevertheless, specialist management in a dedicated endoscopic resection unit allowed successful endoscopic treatment of these extremely challenging lesions in over 95% of cases with few significant complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI1498 NBi VERSUS BLi WHICH MODALITY IS BETTER FOR OBSERVATION OF MUCOSAL BLOOD FLOW IN THE SMALL AND LARGE BOWEL USING NBi (NARROW BAND IMAGING) OR BLi (BLUE LASER IMAGING)?

M. Yasuda1, Y. Naito2, Y. Itoh2
1Dept. Of Gastroenterology And Hepatology, Uji-Tokushukai Medical Center, Uji, Kyoto/Japan
2Dept Of Gastroenterology And Hepatology, Kyoto Prefectural University of Medicine, Kyoto/Japan

Contact E-mail Address: koutoku7@ia2.so-net.ne.jp

Introduction: In recent years, significant advances and innovations have been made in intraluminal endoscopic technology. The special light observation using a narrow band light source different from conventional white light is one such innovation. The special light observation with a magnifying procedure has mainly contributed to improving the diagnosis of lesions in the colon such as stomach, and large bowel; it is particularly useful for differentiating between benign and malignant lesions and evaluating the depth of invasion. The instruments for narrow band imaging (NBI) were developed by Olympus Co., Ltd., and blue laser imaging (BLi) by Fujifilm Co., Ltd. These systems are applied to magnifying endoscopy in clinical practice. Studies have examined the usefulness of magnifying observation with NBI (m-NBI), BLi (m-BLi), and new and brighter BLi (m-BLi) bright for the diagnosis of neoplastic diseases, especially for the early detection of gastrointestinal cancers. However, there are relatively few reports describing the application of these techniques to benign diseases.

Aims & Methods: This basic study aimed to explore the potential of magnifying observation using narrow band light by evaluating the visualization of mucosal blood flow in the small and large bowel. The subjects were selected from among patients who had undergone colonoscopy since April 2016. They were randomized into three groups: patients undergoing examination with EC-L00ZP, a high-end instrument manufactured by Fujifilm Co., Ltd. (group F), CF-HQ290ZI, a high-end instrument manufactured by Olympus Co., Ltd. (group O1) or PCF-H290ZI manufactured by Olympus Co., Ltd. (group O2). Each group consisted of 25 patients. The visualization of mucosal blood flow in the small and large bowel by magnifying endoscopic observation using narrow band light was evaluated and scored as follows: good visualization 2; partial visualization 1, and no visualization 0. The water method and tip attachment were used in all cases.

Conclusion: The respective mean scores for visualization of the small and large bowel were 2 and 2 in group F, 1.32 and 1.24 in group O1, and 1.48 and 1.40 in group O2. The visualization scores for both the small and the large bowel were significantly higher in group F than in groups O1 and O2. Group O2 had higher scores than group O1, although the difference was not statistically significant. The endoscope used in group F has a bright laser light source and maximum optical magnification levels up to 135 times and maximum electronic magnification levels up to 270 times. On the other hand, the endoscopes used in groups O1
and O2 have relatively dark xenon light sources and maximum optical magnification of 110 times, respectively. Therefore, the differences in visualization of mucosal blood flow in the small and large bowel among the groups were considered to be attributable to differences in instrument efficiency. Conclusion: Our results show that magnifying observation with BLI is superior to that with QID regarding the observation of mucosal blood flow in the small and large bowel. We are planning to conduct a study on the clinical application of magnifying observation with BLI for visualization of mucosal blood flow in the small and large bowel.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1499 MULTIPLE COLORECTAL ADENOMAS WITHOUT APC OR MUTYH GERMLINE MUTATION: A HETEROGENEOUS SUBGROUP OF PATIENTS

I. Sanchez Mete, E. Mannisi, A. Martayan, M. Varanese, V. Sgiliano
Gastroenterology And Digestive Endoscopy, Regina Elena National Cancer Institute, Rome/Italy

Contact E-mail Address: lupe.sanchez@ifo.gov.it

Introduction: Multiple colorectal adenomas (MCRA) can be defined as an endoscopic feature of ≥ 10 colorectal adenomas in patients (pts) without APC or MUTYH germline mutation. At present its clinical features, management and the presence of extracolonic cancer are not well studied.

Aims & Methods: The aim of the present study is to better define the clinical characteristics at diagnosis and during follow-up of MCRA affected patients. For this purpose, colorectal adenomas from 26 males with MCRA (≥ 10 colorectal adenomas), without deleterious mutations of APC or MUTYH genes, were recruited for the study. Clinical features at diagnosis and extracolonic manifestations were recorded. Forty patients underwent annual colonoscopy at our division with a median follow-up of 8.1 years (range 1 to 38y).

Results: The mean age at MCRA diagnosis was 50.1 ± 14.6 years (range 19 to 79 years) and 20 pts (41.6%) had at least a first degree relative affected with colorectal neoplasia. Clinical features at diagnosis: the number of polyps ranged between 10 and 20 in 43.7% of the cases; 21 and 50 in 27.1%; > 50 in 29.2%; 22.9% of pts had one or more adenocarcinomas (ADC): 16.6% had a previously diagnosed colorectal cancer (breast, endometrial, thyroid, lung, bladder, brain, larynx). Twenty-five pts (52%) needed surgery, ten underwent a subtotal colectomy and fifteen a total colectomy. During follow-up twenty-two (55%) pts developed recurrent adenomas and two (5%) had one or more ADC in the resected colorectum; 12.5% of pts developed duodenal adenomas, one had a duodenal adenocarcinoma, we recorded one case of adenocarcinoma of the gall bladder and one cervical adenocarcinoma.

Conclusion: MCRA patients in the present study had similar clinical characteristics to MUTYH associated Polyposis (MAP) affected patients. They were generally diagnosed at a mean age of > 50 years, they had more than 20 polyps (56.3%) at diagnosis, associated with ADC in 22.9% of the cases and required surgery in the majority of cases (52%). During follow-up, pts also developed recurrent adenomas. Clinical characteristics and family history in these patients support the hypothesis that pathogenic alterations in yet unknown genes may be involved. Next-generation sequencing is a promising technology aimed at this purpose. However, these patients should undergo a closer surveillance than those with sporadic adenomas.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1500 EVALUATION THE RELATIONSHIP BETWEEN NUMBERS OF BIOPSIES PER CASE AND DEGREE OF FIBROSIS IN COLON

J. Yang1, Y. Jung1, I. Chung1, Y.S. Cho2, S.J. Han1, T.H. Lee1, S. Park1, H. Cho1, Y. Hwangbo1, S. Kim1

1Department Of Gastroenterological & Hepatology, Department Of Internal Medicine, Soonchunhyang University College of Medicine, Cheonan Hospital, Cheonan, Korea, Republic
2Department Of Pathology, Soonchunhyang University College of Medicine, Cheonan Hospital, Cheonan, Korea, Republic

Contact E-mail Address: soufly99@naver.com

Introduction: A degree of fibrosis on targeted lesion is one of the widely known characteristic factors causing fibrosis of tumor could help sorting patients who are suitable for endoscopic removal of colon tumor. Generally a biopsy is performed on a tumor larger than 2 cm in diameter for a diagnose purpose. Fibrosis can be caused by biopsy performed before resection.

Aims & Methods: We conducted a study to evaluate the relationship between numbers of biopsies and degree of fibrosis in colon. We retrospectively enrolled 144 colorectal adenomas (LS), all ≥ 1 cm, that underwent colonoscopy ESD or EMR between January 2005 and May 2016. All LSTs were larger than 2 cm and conducted en-bloc resection. We included elevated or flat type LSTs and excluded lesions of the depressive or ulcerative type. Each data is compared with O1, O2, and the histologic type of lesions was 60.4% in adenoma, 20.8% of intramucosal cancer, and 18.8% of submucosal cancer, respectively. Signs of fibrosis were present on 45.9% (50/109) of patients with prior biopsy, and 40.0% (16/40) of patients without prior biopsy. (p=0.6)

Results: There was no significant difference in degree (p=0.791) distribution (P=0.941) and depth (P=0.748) of fibrosis between groups with or without prior biopsy. In relationship between pathologic results and the presence of fibrosis, the percentage of adenoma, intramucosal cancer, SM-1(< 1000μm) cancer and SM-2(>1000μm) cancer with fibrosis were 32.3%, 66.7%, 72.7% and 90% (P=0.00). Additionally, the fibrosis rate for tumors <3 cm and >3 cm were 44.1% and 58.97% (P=0.002). When biopsies were performed two or more times on a same lesion, it showed significant difference comparing to patients who only underwent biopsy just once. (OR 4.98, 1.20-20.51, 95% CI, P=0.026)

Conclusion: Degree, distribution and depth of fibrosis were not associated with prior biopsy status. However, the more invasive tumor is, the more presence of fibrosis was found. Moreover, the caution should be needed when performing multiple biopsies because; multiple biopsies are more likely to cause fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1501 ADVANCED NEOPLASIA YIELD IN PATIENTS UNDERGOING COLONOSCOPY AFTER SCREENING FLEXIBLE SIGMOIDOSCOPY: DOES THE DISTAL COLON POLYCHOL PATHOLOGY PREDICTS THE YIELD IN PROXIMAL COLON?

Wolfson Endoscopy Unit, St Mark’s Hospital, Harrow, London/United Kingdom

Contact E-mail Address: r.rameshshanker@nhs.net

Introduction: Currently patients undergoing a screening flexible sigmoidoscopy (Bowel Scope screening) examination at the age of 55 are referred for colonoscopy if the follow up polyp criteria are met: polyp > 1 cm, villous histology, high grade dysplasia, 3 or more adenomas or > 20 hyperplastic polyps (HP).

Aims & Methods: Objective is to assess the proportion of patients who had an advanced adenoma (size > 3 cm, villous or high grade dysplasia on histology) in the proximal colon when referred for a colonoscopy after a screening flexible sigmoidoscopy. A retrospective cross-sectional study of patients who underwent Bowel Scope screening between July 2013 - July 2016 at St Mark’s Bowel Cancer Screening (BCS) Centre was performed. Epidemiological, procedural and polyp data was retrieved from the endoscopy and Bowel Cancer screening database.

Results: 9960 patients had a screening flexible sigmoidoscopy in the time period. Descending colon was reached in 82% of patients. Advanced adenomas were detected in 351 (3.2%) patients. 520 (5.2%) patients had a colonoscopy following flexible sigmoidoscopy for polyps greater than 1 cm or with dysplasia) in the proximal colon. Median age was 55 years (male: female ratio 2:1). Caecal intubation was achieved in 98% (510/520) of cases. At least one adenoma or a sessile serrated adenoma/polyp (SSA/P) was detected, proximal to the extent of flexible sigmoidoscopy examination, in 45% (229/520) of patients (Table 1). An advanced adenoma in the distal colon was an indication for colonscopy in 351/520 patients (68%). Of these, 52 (14.8%) had a synchronous proximal colonic advanced adenoma and 20 (5.7%) had a synchronous SSA/P. Only 5 (1.4%) patients had an advanced adenoma and proximal SSA/P. Detailed examination of the proximal colon. Presence of a distal advanced adenoma was associated with proximal advanced adenoma (p = 0.0006). However, there was no association between presence of distal advanced adenoma and proximal SSA/P (p = 0.47) or advanced SSA/P (p = 0.4).

Table 1: Proximal colonic pathology during colonoscopy

(continued)
Conclusions: Distal colonic advanced adenomas are a marker of synchronous proximal colonic adenomas and sessile serrated polyps. When colonoscopies were performed for other indications (non-adenomatous polyp > 1 cm, multiple distal HP polyps) the yield in the proximal colon was significantly smaller. These “soft” indications for colonoscopy accounted for a significant additional workload that appears unjustified.

Disclosure of Interest: B.P. Saunders: Advisory board member of Olympus UK. All other authors have declared no conflicts of interest.

P1502 LEARNING CURVE FOR OPTICAL DIAGNOSIS OF COLORECTAL POLYPS USING CUMULATIVE SUM ANALYSIS

R. Rameshshanker, A. Wilson, S. Thomas-Gibson, N. Kamperidis, N. O’Shea, B.P. Saunders
Wolfson Endoscopy Unit, St Mark’s Hospital, Harrow, London/United Kingdom

Contact E-mail Address: r.rameshshanker@nhs.net

Introduction: Optical diagnosis for diminutive and small colorectal polyps is an attractive option to reduce costs and streamline patient care. The American Society of Gastrointestinal Endoscopy Preservation and Incorporation of Valuable Endoscopic Innovations (PIVI) established a 90% diagnostic threshold for real time endoscopic assessment of the histology of diminutive colorectal polyps (<5 mm). For adoption of optical diagnosis in clinical practice, colonoscopists must be trained and show on-going competence. The learning curve for trainees to achieve the competency has not been fully explored.

Aims & Methods: Aim is to evaluate the minimum number of polyps to achieve and maintain the optical diagnostic thresholds per PIVI standards using an upward CUSUM plot. Four trainees without previous experience in optical diagnosis at our institution participated in this prospective study. Four weeks before the commencement of the study they were given a training module on optical diagnosis (OD). OD was based on NICE and WASP classification. During the study period (January 2016-August 2016), each trainee documented the optical diagnosis of polyps less than 10 mm in size. Confidence levels of OD were noted at the same time. Patient demographics and polyp details (site, size, Paris classification and histology) were collected prospectively. OD of each polyp was compared against the polyp histology. Polyps without the histological confirmation were excluded from the analysis. Every trainee had on-going feedback on their performance.

Results: A total of 708 polyp observations were performed by trainees during the study period. Total number of adenomas, hyperplastic polyps and sessile serrated adenomas/polyps (SSA/P) were 364, 214 and 52 respectively. Trainees OD performance was plotted on a upward CUSUM plot.

Table 1: Trainees optical diagnostic performance

<table>
<thead>
<tr>
<th>Trainee</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive Predictive Value</th>
<th>Negative Predictive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainee 1</td>
<td>95%</td>
<td>91%</td>
<td>89%</td>
<td>92%</td>
</tr>
<tr>
<td>Trainee 2</td>
<td>96%</td>
<td>87%</td>
<td>94%</td>
<td>92%</td>
</tr>
<tr>
<td>Trainee 3</td>
<td>94%</td>
<td>83%</td>
<td>88%</td>
<td>91%</td>
</tr>
<tr>
<td>Trainee 4</td>
<td>94%</td>
<td>91%</td>
<td>88%</td>
<td>93%</td>
</tr>
</tbody>
</table>

All 4 trainees achieved sustained accuracy (90% threshold) in OD within 12–58 observations. The number of polyps required to reach the plateau varied between 12 to 58. Every trainee’s confidence level improved over time (from 69% to 89%) and the effect was augmented by in-vivo feedback and revision of training module. Table 1 summarises the optical diagnostic performance of all 4 trainees. Negative predictive value for adenomas were above 90% for all trainees.

Conclusion: The CUSUM scores of all 4 trainees in the study reached the PIVI standards plateau by the 58th polyp observation. In-vivo feedback and continued training appears important to maintain the performance. Our preliminary findings could be used as a guide to plan the certification process for implementation of optical diagnosis.

Disclosure of Interest: B.P. Saunders: Advisory board member - Olympus UK. All other authors have declared no conflicts of interest.

P1503 THE CLINICAL VALUE OF ENDOSCOPIC FULL-THICKNESS RESECTION FOR COLORECTAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULARIS PROPRIA: A PROSPECTIVE SINGLE-CENTER STUDY

M. Xu, C. Zhang, Q. Li
Endoscopy Center, Zhongshan Hospital, Shanghai/China
Contact E-mail Address: xumeidong@aliyun.com

Introduction: Given diminishing quality of life caused by colectomy and rectectomy, a minimally invasive treatment is desirable for colorectal submucosal tumors (SMTs).

Aims & Methods: The aim of the current study was to evaluate the clinical efficacy, safety and feasibility of endoscopic full-thickness resection (EFR) for colorectal SMTs originating from the MP layer. A prospective study was carried out, including a consecutive cohort of 56 patients who underwent EFR for colorectal SMTs originating from the MP layer between January 2008 and September 2014 in our center. Among these patients, 21 lesions were located in the colon, 9 located in the intraperitoneal rectum and 26 located in the extraperitoneal rectum. The tight adhesion of the lesion to the serosal layer was identified before EFR in all cases. EFR was performed using a standard ESD technique under direct endoscopic view. The defect of colorectal wall was closed after resection in all cases. Complete resection rate, complications and lesion recurrence were evaluated.

Results: Successful EFR was performed in 54 (96.4%) patients. The other 2 patients were transferred to suffer laparoscopic right hemicolectomy and EFR combining laparoscopic operation respectively, because the lesions involved the external organs and were too difficult to get en bloc resection endoscopically. The endoscopic resection rate and complete resection rate were both 96.4% (54/56) Among 54 cases, 52 of these lesions were performed with EFR without laparoscopic assistance, while 2 needed laparoscopic assistance to get the defect closed after resection. The median operation time was 45 min (range, 20–130 min). The median maximum diameter of resected tumors was 1.5 cm (range, 0.5–5.0 cm). Accurate histopathologic results were acquired from all the resected lesions, including 18 leiomyomas, 11 gastrointestinal stromal tumors (GISTs), 8 fibrous tumors, 3 schwannomas, 11 granulomas, 2 displaced endometrium, and 1 hamartoma. Three patients had local peritonitis and two patients developed postoperative bleeding. All of them recovered after receiving conservative treatments. No single case developed diffuse peritonitis. No lesion residual or recurrence was found during the follow-up period ranging 2–54 months.

Conclusion: EFR appears to be a safe, feasible, and effective procedure for providing accurate histopathologic evaluations, as well as a curative treatment for colorectal SMTs originating from the MP layer. However, it should be performed by the very experienced endoscopists.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1504 COLONIC ESD BY UTILIZING SHORT DOUBLE BALLOON ENDSCOPE—HOW TO TREAT DIFFICULT CASES IN COLONIC ESD

S. Katsuki, T. Fujita, K. Takamushi, E. Waga
Center Of Gastroenterology, Otaru Eki Kaikan Hospital Center of Gastroenterology, Otaru Japan
Contact E-mail Address: sinichi-katsuki@otaru-eki-kaikan.jp

Introduction: Colon ESD has been becoming a standard treatment in the world. However, sometimes it is hard to remove the colon tumor during ESD. When we can not detach the tumor from the colon wall using normal ESD, we have to consider the following three points: if we don’t have enough experience and skill, we should take the training more. If there are lots of vessels and fibrosis in the submucosal layer, it is necessary to choose adequate tools. And if patients have complicated colon, suitable endoscope need to be selected. In such cases we always use DBE.

Aims & Methods: We evaluated the outcomes of colon ESD by using DBE (DBE-ESD). Short DBE we used were EC450B1, EN530Bi and ES180BT (Fujinon Co., Tokyo, Japan). We’ve performed DBE-ESD on 211 lesions in 184 patients. We analyzed the lesions located in the proximal colon, and the following items were examined: arrival time, procedure time, rate of negative margin, perforation rate, length of hospital stay and recurrence rate in the 5th year after the ESD.

Results: There were 159 lesions located in the proximal colons. The median arrival time to the lesion was 7.9 min, operation time 51.1 min, negative rate of horizontal margin 99.4%, vertical margin 99.4%, perforation rate 0%, median length of hospital stay 3.1 days., and recurrence rate in patients with more than 5 year follow-up 0%.

Conclusion: Because the balloons and the overtube retained the scope at stable position, we were able to get good working space. Therefore, DBE should be one option for difficult cases in ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1505 WITHDRAWAL TIME MONITORING AND FULL-SPECTRUM ENDOSCOPY IMPROVE ADENOMA DETECTION RATE

G. De Nucci1, P. Andreozzi2, C. Bezzo3, R. Reati1, D. Morganti1, D. Redaelli1, E. Mandelli1, B. Omazzi3, I. Arena3, S. Saibeni3, G. Manes1
1 ASST Rhodense, Garbagnate Milanese/Italy
2 ASST Rhodense, University Of Naples * federico 1*, Naples/Italy
3 ASST Rhodense, Rho/Italy

Contact E-mail Address: germanudennucci@gmail.com

Introduction: Adenoma detection rate (ADR) is a quality indicator of screening colonoscopy. Monitoring withdrawal time (WT) and use of full-spectrum endoscopy (FUSE) have been suggested to increase the ADR since allow an accurate colonoscopy. Monitoring withdrawal time (WT) and use of full-spectrum endoscopy would be able to increase the ADR. In a prospective non-randomized observational study, consecutive outpatients, aged 18-85 yr, undergoing colonoscopy with different indications were enrolled. In phase 1, endoscopists performed 660 colonoscopies either with standard forward-viewing endoscope (SFVE) (n = 330) or with FUSE (n = 330) without a dedicated WT protocol. In this phase, colonoscopy WTs were measured without the endoscopists' knowledge of being monitored. In phase 2, endoscopists were informed of being monitored and performed further 660 colonoscopies either with SFVE (n = 330) or with FUSE (n = 330).

Results: No differences were observed among the four arms in terms of demographic, clinical features, and indications to colonoscopy. WT was lower in phase 1 arms compared to phase 2 arms (SFVE: 267 ± 96 vs. 387 ± 65, p = 0.001; FUSE: 293 ± 112 vs. 430 ± 93, p = 0.001). When endoscopists were aware of being monitored and used full-spectrum endoscope we observed a higher ADR [phase 1 SFVE 27.3% (90) phase 1 FUSE 33.0% (109) phase 2 SFVE 33.6% (111) phase 2 FUSE 41.8% (138); p = 0.001] and adenoma per colonoscopy (APC) [phase 1 SFVE 0.43 ± 0.85 phase 1 FUSE 0.56 ± 1.08 phase 2 SFVE 0.24 ± 0.72 phase 2 FUSE 0.71 ± 1.08; p = 0.004]. The detection rate of adenoma located proximally to the splenic flexure was higher in phase 2 arms (phase 1 SFVE 11.2% vs. phase SFVE 16.4%, p = 0.056; phase 1 FUSE 12.7% vs. phase 2 FUSE 18.9%, p = 0.033), whereas adenoma located distally to the splenic flexure was higher in the FUSE arms compared to SFVE arms, but these differences were not significant (Phase 1 SFVE 20.0% vs. Phase 1 FUSE 24.8%, p = 0.081; Phase 2 SFVE 21.8% vs. Phase 2 FUSE 27.0%, p = 0.147).

Conclusion: Unmonitored endoscopists have a sub-optimal WT, which increases when they are aware to be monitored. Use of full-spectrum scopes combined with WT monitoring results in increase of adenoma detection rate. In particular, monitoring WT increases the detection of adenoma in proximal colon, whereas the use of FUSE seems to increase the detection of adenomas in distal colon.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1506 HIGH LEVELS OF “PRESUMED POLYP MISS RATE” AT 1 AND 3 YEARS FOLLOWING INDEX SCREENING COLONOSCOPY: NO ROOM FOR COMPLACENCY

Wolfson Endoscopy Unit, St Mark’s Hospital, Harrow, London/United Kingdom

Contact E-mail Address: r.rameshshanker@nhs.net

Introduction: Colonoscopy with polypectomy is considered the optimal method of bowel cancer prevention. Despite improvements in colonoscopy training and technology, it remains as an imperfect tool and the adenoma miss rates vary between 6-27%.

Aims & Methods: Aim is to determine the presumed miss rate for adenomas and sessile serrated polyps (SSA/Ps) after a complete screening colonoscopy. Methodology: A prospective observational study was performed at our bowel cancer screening centre over 12 months from July 2015. Patients who underwent a surveillance colonoscopy following an index colonoscopy were included (one and three-year surveillance). All colonoscopies were performed by experienced, accredited bowel cancer screening colonoscopists. Polyp characteristics and procedural data were prospectively recorded and collected. Polyp histology and epidemiology data were retrieved from our endoscopy database. A polyp was considered as “missed” at the index colonoscopy if it at 1 year surveillance it was not adjacent to a scar (a recurrence) or at 3 years if >5 mm in size and not adjacent to a scar.

Results: 241 patients underwent a surveillance colonoscopy (male: female 2:1, median age 65 years). 90% (241/37.5%) patients had a one-year surveillance colonoscopy. There was no significant difference in the quality of bowel preparation, caecal intubation rate and total procedure time between index and surveillance procedures. Total number of polyps detected during index and surveillance colonoscopies were 815 and 469 respectively. The presumed miss rate of polyps, adenomas, SSA/Ps and advanced adenomas was 37.8% (449/1214), 22.1% (176/798), 41.7% (20/48) and 15.2% (36/236) respectively. More adenomas were detected in the proximal colon when compared to distal colon (26.64% vs 18.04%, p = 0.01). Table 1 illustrates the distribution of missed adenomas in each segment of colon. Adenoma miss rates per size as follows: <5 mm, 6-9 mm and >10 mm were 24.27 and 8% respectively. Higher number of polyps (>3 detected during index colonoscopy independently correlated with high miss rates (84.3% vs 72%, p = 0.04).

Table 1: Missed polyps at different colonic segments

<table>
<thead>
<tr>
<th>Location</th>
<th>Adenoma miss rate (%)</th>
<th>Sessile serrated adenoma miss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectum</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Rectosigmoid junction</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Sigmoid colon</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Descending colon</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Splenic flexure</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Heparic flexure</td>
<td>30</td>
<td>57</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>Caecum</td>
<td>26</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: Our study highlights that there is likely to be a significant miss rate for adenomas and SSA/Ps even after careful index colonoscopy. Miss rate was higher when multiple polyps are seen at the index examination. This finding appears to justify the current BSG (British Society of Gastroenterology) guidelines for an early, 1 year colonoscopy when multiple polyps are seen. The presumed polyp miss rate at 1 & 3 years may be justified as a new quality metric within screening programmes.

Disclosure of Interest: B.P. Saunders: Advisory board member of Olympus UK All other authors have declared no conflicts of interest.

Contact E-mail Address: angelika.dokladanska@meduniwien.ac.at

Introduction: Systemic diseases including several types of cancer have been associated with periodontitis, potentially owing to the constant systemic inflammatory state in those patients. Data on a potential association of periodontal disease and colorectal neoplasia is scarce and conflicting.

Aims & Methods: Data from 25,407 patients undergoing healthy check up assessment periodontal disease according to periodontitis-risk classes (PRC 0-healthy gingiva, PRC 1 - tarter or plaque, PRC 2 - redness or swelling) and screening colonoscopy between 2009 and 2012 in Austria were included. Colonoscopy outcomes were compared between patients with and without signs of periodontal disease using multivariate models adjusting for age, sex, smoking, alcohol consumption, diabetes and BMI.

Results: In multivariate adjusted models, patients with periodontal disease had similar odds for the detection of colorectal polyps as those without signs of periodontal disease [adjOR 1.070; 95% CI: 0.918; 1.247]. Regarding the prevalence of adenomas, patients with periodontal disease, likewise, had similar odds as those with healthy periodontal tissue [adjOR 1.010; 95% CI: 0.840; 1.213]. Similarly, those with periodontal disease had comparable odds for colorectal adenomas as those without signs of periodontal disease [1.055 (0.785; 1.418)].

In the table below the adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) divided into the periodontosis-risk classes.

Table 1: ADR (adenoma detection rate) and AADR (advanced adenoma detection rate) according to the periodontosis-risk classes

<table>
<thead>
<tr>
<th>PRC 0</th>
<th>PRC 1</th>
<th>PRC 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma (ADR)</td>
<td>19.34%</td>
<td>19.56%</td>
</tr>
<tr>
<td>Advanced adenoma (AADR)</td>
<td>5.42%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Conclusion: Periodontal disease has no impact on the adenoma and advanced adenoma detection rates in a large screening colonoscopy cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.
OUTCOMES OF ENDOSCOPIC RESECTIONS OF LARGE NON-POLYPOID LESIONS IN INFLAMMATORY BOWEL DISEASE: A SINGLE UNITED KINGDOM CENTRE EXPERIENCE

S. Gulati, A. Emmanuel, M. Burt, P. Dubois, B. Hayee, A. Haji
Endoscopy, King’s Institute of Therapeutic Endoscopy, RS/United Kingdom

Contact E-mail Address: shraddha.gulati@nhs.net

Introduction: Patients with colitis carry an increased risk for the development of dysplasia compared to those without colitis. The SCENIC consensus statement recommends endoscopic resection of all visible dysplasia. Due to technical challenges and limited experience in the West of large colitis associated non-polypoid endoscopic resections, such patients are often subjected to colectomy.

The King’s Institute of Therapeutic Endoscopy (KITE) is a tertiary centre for endoscopic assessment and resection of large/challenging colorectal polyps. Here we present the largest single-centre case series of large non-polypoid resections associated with colitis.

Aims & Methods: Adults with confirmed colitis (ulcerative colitis extending beyond the rectosigmoid junction and crohn’s colitis affecting at least the left colon) with lesions at least 20 mm in size within the colitis segment were included. Data including demographics, clinical history, lesion characteristics, method of resection and post-resection surveillance were collected prospectively in patients from January 2011 to November 2016. Resection techniques included endoscopic mucosal resection (EMR), endoscopic submucosal dissection (ESD) and hybrid ESD. Surveillance of resection site with magnification chromoendoscopy (mCE) was performed at 3 months with pan colonic mCE at 1-year post resection and annually thereafter.

Results: Thirteen lesions satisfied the inclusion criteria in 13 patients. Patient demographics and clinical data are presented in Table 1. Mean lesion size was 22.4 (20–90) mm. All lesions were non polypoid with distinct margins and no ulceration. High-frequency mini-probe ultrasound confirmed intramucosal lesions in 5 cases where pit/vascular pattern was distorted due to inflammation. En bloc resection was achieved in 6 cases. 69% lesions were deeply scarred of which 66% had experienced prior instrumentation. Resection of a single lesion with intense fibrosis was difficult. Macroscopic evidence of complete resection was achieved in all remaining cases. Endoscopic diagnosis of pre-cancerous lesions of less than 1000 mm were located at right-half colon, 9 at left-half colon and 31 at rectum. The mean duration of disease (mean, SD, range) (years) 19.9, 14.2, 1–50. Disease extent

Table 1: Baseline characteristics.

<table>
<thead>
<tr>
<th>Patient Demographics</th>
</tr>
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<tbody>
<tr>
<td>Age at time of resection (mean, SD, range) (years) 57.31+/−12.7, 30–81</td>
</tr>
<tr>
<td>Male (n) (%)</td>
</tr>
<tr>
<td>Female (n) (%)</td>
</tr>
<tr>
<td>Clinical Data</td>
</tr>
<tr>
<td>Duration of disease (mean, SD, range) (years) 19.9, 14.2, 1–50</td>
</tr>
<tr>
<td>Disease extent</td>
</tr>
<tr>
<td>Spicled Flexure (n) (%)</td>
</tr>
<tr>
<td>Pan-colonic/Extensive (n) (%)</td>
</tr>
<tr>
<td>Primary Serosing Cholangitis</td>
</tr>
<tr>
<td>IBD Medication</td>
</tr>
<tr>
<td>5-ASA* (n) (%)</td>
</tr>
<tr>
<td>Azathioprine (n) (%)</td>
</tr>
<tr>
<td>Biologics (n) (%)</td>
</tr>
</tbody>
</table>

ASA Physical Status Classification (continued)

Conclusion: This cohort series demonstrates that endoscopic resection of large non-polypoid lesions in association with colitis is feasible using an array of resection methods, safe and has good long term outcomes in a western tertiary endoscopic centre.

Disclose of Interest: All authors have declared no conflicts of interest.

References


RESEARCH ON APPLICATION OF TRANSANAL TUBE DECOMPRESSION FOR PREVENTION OF COMPLICATIONS IN COLORECTAL MUCOSAL LESIONS AFTER ESD

L. Bing, Z. Qi, Y. Zhong
Endoscopy Center And Endoscopy Research Institute, Zhongshan Hospital, Fudan University, Shanghai, Shanghai, China

Contact E-mail Address: 13564623431@126.com

Introduction: Endoscopic submucosal dissection (ESD) has been widely used in the minimally invasive treatment of early colorectal mucosa and submucosal lesions. This technique has made it possible to resect even large mucosal or submucosal lesions en bloc, and the recurrence rate is lower. However, due to the thinner colorectal wall and more abundant blood vessels, postoperative complications after ESD is higher in this site. As a result, how to prevent complications related to ESD for colorectal lesions has raised widespread concern. In recent years, more and more researchers placed transanal tube for patients with colorectal cancer resection or intestinal obstruction to promote the early discharge of the gas and liquid in the intestine. The efficacy of this method to reduce incidence of complications and to promote recovery of intestinal function have been verified by a number of studies. Based on this, we applied transanal tube to some patients with colorectal ESD, hoping to provide new ideas for the prevention and treatment of complications.

Aims & Methods: We aimed to evaluate transanal tube for prevention of complications in colorectal mucosal lesions after endoscopic submucosal dissection (ESD). Data of 61 patients with colorectal mucosal lesions undergoing ESD from January to December 2016 were reviewed. All patients were followed up and we analyzed the incidence rate of complications after ESD within one month.

Results: The median age of 61 patients was 61(32–83) years. 21 of all lesions were located at right-half colon, 9 at left-half colon and 31 at rectum. The mean diameter of the lesions was 3.26 ± 2.27 (0.8–12.0) cm. There were no intraoperative complications including serious bleeding and perforation. Delayed bleeding on the eleventh post-ESD day was detected in 1 (1.6%) patient who was cured by transfusion. 3(4.9%) patients suffered post-ESD electrocoagulation syndrome and perforation did not present in all cases. In this group with transanal tube for decompression, the rates of perforation, delayed bleeding and post-ESD electrocoagulation syndrome were all lower than others which was 1.4~8.2%, 0.5~9.5% and 12.1%~40.2% respectively in literature reports.

Conclusion: The application of transanal tube in colorectal mucosal lesions after ESD could effectively reduce the incidence of complications. However, we should do more research to know whether transanal tube need to be placed routinely after ESD or not.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Introduction: Underwater endoscopic mucosal resection (UEMR) is an alternative to traditional EMR for the resection of colonic polyps. With this technique, water immersion is used in place of air or CO2, and submucosal lifting is usually not required, as water-immersed submucosal cushions itself from the muscularis propria. Theoretically, this reduces the risk of diathermy-induced injury, and allows for more complete resection margins. 

Aims & Methods: In this prospective dual-centre study, we aim to evaluate the safety and efficacy of UEMR for clinically significant (≥10 mm) colonic polyps. Studied outcomes included: 1) completeness of UEMR, 2) intra-procedural and 30-day complication rates, 3) percentage requiring submucosal lift, and 4) rates and predictors of polyp recurrence. Procedures were performed by two screening endoscopists accepting tertiary referrals at St. Mark’s Hospital, London, and Russell’s Hall Hospital, Dudley. UK. Recurrence was defined as the presence of any polyp tissue at the resection site. Endoscopy records were examined and correlated with histology. Univariate analyses were performed using Pearson’s χ2 to identify predictors of measured outcomes.

Results: Between June 2014 and March 2017, and a total of 85 patients (median age 69.5 years, interquartile range [IQR] 11.0, 50.6%) male underwent UEMR of 97 colonic polyps (median size 25 mm, IQR 25 mm, range 10–160 mm). 13 (13.4%) were recurrences following previous conventional EMR. Polyps were predominantly left sided (66%) with flat (63.5%) or sessile (35.5%) morphology. 43.8% of polyps were removed en bloc, whilst argon plasma coagulation (APC) was used in 13.7%. Histology comprised of: low-grade dysplasia (80.2%), high-grade dysplasia (12.5%), adenocarcinoma (1.3%) and non-dysplastic sessile serrated polyp (4.2%). Overall, resection at index UEMR was deemed endoscopically complete in 97.9%. Submucosal lift was required in 27.8% and positively correlated with polyp size ≥30 mm (OR 3.58, 95% CI 1.37–9.38, p = 0.01), but not morphology (flat vs. sessile, p = 0.09). The 30-day complication rate was 4.1% (n = 4), consisting of: bleeding (n = 2, average diameters: 35 mm) and delayed rebleeding (n = 2; average diameter: 57.5 mm), with haemostasis achieved for all cases. No cases of perforation or mortality were identified. Of the 60.8% (n = 59) who attended for repeat endoscopy post-UEMR, the rate of recurrence or residual polyp was 14.8% (9/63) at 4 months and 13.9% (22/160) within 1 year. Significant predictors of post-UEMR recurrence included: piece-meal vs. en bloc resection (OR 5.50, 95% CI 1.10–27.6, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03) and recurrent polyp (OR 5.50, 95% CI 1.10–27.6, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03). The 30-day complication rate was 4.1% (n = 4), consisting of: bleeding (n = 2, average diameters: 35 mm) and delayed rebleeding (n = 2; average diameter: 57.5 mm), with haemostasis achieved for all cases. No cases of perforation or mortality were identified. Of the 60.8% (n = 59) who attended for repeat endoscopy post-UEMR, the rate of recurrence or residual polyp was 14.8% (9/63) at 4 months and 13.9% (22/160) within 1 year. Significant predictors of post-UEMR recurrence included: piece-meal vs. en bloc resection (OR 5.50, 95% CI 1.10–27.6, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.03).

Conclusion: UEMR is a safe alternative to conventional EMR for the management of clinically significant colonic polyps. However, our post-UEMR recurrence rate of 22.0% appears higher than other studies, but may be skewed by the tertiary nature of referrals. Although randomised trials are awaited, we suggest that those performing UEMR should attempt en bloc resection where possible, and consider wider resection margins for recurrent polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

P1513 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL LESIONS: THE EXPERIENCE OF A UK TERTIARY REFERRAL CENTRE

A. Emmanuel, S. Gulati, M. Burt, B. Hayee, A. Haji
Endoscopy, King’s College Hospital, London/United Kingdom

Contact E-mail Address: aemmanuel@nhs.net

Introduction: Despite the advantages of endoscopic submucosal resection (ESD) demonstrated in large series from the far east, the procedure is not commonly practiced in the west and its role in standard practice is still debated. Although limited evidence regarding its efficacy in European practice is emerging, very few centres in the United Kingdom perform ESD regularly, if at all. We report the experience of a UK tertiary referral institution using ESD as part of a lesion specific, pragmatic approach to endoscopic resection in a complex patient cohort.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions were included. Lesions were assessed with magnification chromoendoscopy supplemented by colonicomatos ultrasound in selected cases. A lesion specific approach was used to select technique, which included assessment of morphology, pit pattern, risk of submucosal invasion, and presence of submucosal fibrosis or scarring. ESD was used where en bloc resection was deemed essential, or as part of a hybrid procedure to ensure resection of a dominant nodule or suspicious area of a lesion in one piece, or where fibrosis or scarring would make standard EMR impossible. A resection was designated a hybrid procedure if ESD was used to effect submucosal dissection, circumferential incision alone to assist snare resection was not included.

Results: 116 lesions (mean size 58.8 mm) were resected using ESD (n = 58) and hybrid ESD (n = 58). 82 (70.7%) had been subjected to prior attempts at resection (n = 58) or extensive sampling. Only 11 lesions had no prior biopsies performed. En bloc resection was achieved in 93.1% where ESD was used alone, with a mean procedure rate of 4.7% after a mean follow-up of 19 months. There were 6 microperforations treated with either endoscopic clips or antibiotics alone with no adverse sequelae, and one clinically significant perforation requiring surgery. However, the resected lesion in this case contained an invasive adenocarcinoma with deep submucosal invasion—there was no residual tumour in the surgical resection specimen. Post-procedure bleeding occurred in 6 patients, none of whom required treatment. 1 patient was treated with a blood transfusion. The remaining patients were managed expectantly. In all these latter cases spontaneous cessation of bleeding and re-endoathlasia occurred. 25 lesions had a submucosal invasion greater than 150 mm, 17 of which were managed successfully.

Conclusion: The majority of patients with these extensive complex lesions can successfully be treated with endoscopic resection and avoid surgery. However, these patients have a significantly greater risk of complications and recurrence and should be managed in a tertiary institution. Although there is a significant risk of stenosis, it appears that most cases are asymptomatic and spontaneously improve with expectant management.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

P1514 RISK OF STENOSIS AND OUTCOMES FOLLOWING ENDOSCOPIC RESSECTION OF LARGE COLORECTAL LESIONS INVOLVING MORE THAN 75% OF THE LUMINAL CIRCUMFERENCE

A. Emmanuel, S. Gulati, M. Burt, B. Hayee, A. Haji
Endoscopy, King’s College Hospital, London/United Kingdom

Contact E-mail Address: aemmanuel@nhs.net

Introduction: Little is known about the risk of stenosis and outcomes following endoscopic resection of lesions in the colorectum which leave extensive mucosal defects. A limited number of studies suggest significant stenosis rates, although reports on outcomes and suggested management are conflicting. We determined the risk of stenosis and outcomes of endoscopic resection of colorectal lesions leaving mucosal defects ≥75% of the circumference.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. Lesion assessment and selection in western practice should be improved to reduce the incidence of prior heavy manipulation and guide appropriate referral.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline
Introduction: Although it is well recognised that the risk of invasive carcinoma in adenomatous polyps of colorectal neoplastic lesions differs according to morphology, the incidence of invasive cancer varies between studies and there is limited data from large western series to inform practice. The importance of appropriate resection techniques, including the use of ESD, is increasingly recognised in western practice. It is therefore imperative that the risk of submucosal invasion is assessed as accurately as possible to prevent inappropriate attempts at resection. We determined the risk of submucosal invasion and high-grade dysplasia (HGD) in different morphological sub-types of large colorectal lesions subjected to endoscopic resection.

Aims & Methods: Colorectal lesions ≥2 cm subjected to endoscopic resection were included. Lesions were assessed with magnification chromoendoscopy. Clinicopathological data recorded included morphological type according to Paris classification, sub-types of laterally spreading tumours (LST), degree of dysplasia, presence of submucosal invasion and outcomes following resection.

Results: 435 colorectal lesions ≥2 cm were resected. Mean lesion size was 55.2 mm (range 20 mm–160 mm). The frequency of and the incidence of high-grade dysplasia and invasive adenocarcinoma in the different morphological sub-types are shown in Table 1. The incidence of high-grade dysplasia (8.6%) and invasive adenocarcinoma (1.2%) was very low in LST granular homogenous lesions.

<table>
<thead>
<tr>
<th>Morphology</th>
<th>Mean size (mm)</th>
<th>High-grade dysplasia (%)</th>
<th>Invasive adenocarcinoma (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is</td>
<td>36.7</td>
<td>2 (33.3)</td>
<td>1 (16.7)</td>
</tr>
<tr>
<td>Isp</td>
<td>37.8</td>
<td>21 (27.6)</td>
<td>7 (9.2)</td>
</tr>
<tr>
<td>Ha</td>
<td>27.2</td>
<td>5 (10)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Ha + Ic</td>
<td>35.0</td>
<td>3 (100)</td>
<td>26 (66.6)</td>
</tr>
<tr>
<td>LST G H</td>
<td>54.3</td>
<td>15 (8.6)</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td>LST G MN</td>
<td>83.3</td>
<td>49 (43.0)</td>
<td>12 (10.0)</td>
</tr>
<tr>
<td>LST NG</td>
<td>45.0</td>
<td>4 (36.4)</td>
<td>2 (18.2)</td>
</tr>
</tbody>
</table>

LST G H = LST granular homogenous LST G MN = LST granular mixed nodular LST NG = LST non-granular ESD or hybrid ESD was used to resect 97 lesions. 53% of lesions had been subjected to previous failed attempts at resection, ≥6 biopsies or had tattoo injected at their base prior to referral. Of 29 invasive adenocarcinomas, 9 were deemed curable by endoscopic resection (superficial submucosal invasion with no adverse prognostic features). Of the remaining 20, 5 patients refused surgical resection, 5 were unfit for major surgery and 10 had had residual tumour in the surgical resection specimen, 5 had local recurrence at their referring institution. Only 2 patients with initially benign lesions developed adenocarcinoma in subsequent lesions—all of these were early cancers without nodal metastases at surgical resection.

Conclusion: In one of the largest European series reporting the incidence of invasive carcinoma in different morphological sub-types of colorectal neoplastic lesions, we confirm that LST granular homogenous type lesions have a very low incidence of invasive carcinoma and that care should be taken in the choice of resection technique for other sub-types of LST which more frequently harbour malignancy. Accuracy of preoperative assessment and classification to aid metachronous lesion selection is essential to this process.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1517 OUTCOMES OF ENDOSCOPIC RESECTION OF RECURRENT COLORECTAL LESIONS TREATED AT A UK TERTIARY REFERRAL CENTRE

A. Emmanuel, S. Gulati, M. Burt, B. Hayee, A. Haji

Introduction: Endoscopic resection of large colorectal lesions, especially by piecemeal EMR, carries a significant risk of recurrence. Although several series examine the outcomes and risk of recurrence following endoscopic resection, few focus on the outcomes of patients being treated for recurrence after initial expert resection, and these mostly focus on one technique to deal with recurrence. We evaluated the outcomes after recurrence of colorectal lesions after apparent successful endoscopic resection in a specialised UK tertiary institution employing a range of resection techniques.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. All lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique. Outcomes were evaluated for patients treated for recurrent lesions.

Results: Of 396 colorectal lesions ≥2 cm initially resected, recurrence occurred in 48 patients. 36% of these patients had already had a mean of 1.6 previous failed attempts at resection prior to referral to our institution, and 66% had had either a failed attempt at resection or extensive sampling involving ≥6 biopsies or tattoo placed under the lesion. 69% of patients were successfully treated with further endoscopic resection and avoided surgery. 27 recurrent lesions larger than 20 mm were treated with endoscopic resection, with a mean lesion size of 48.3 ± 19 mm. Techniques used were EMR (n = 16), ESD (n = 2), Hybrid ESD and EMR (n = 9). The remaining lesions < 2 cm were resected using EMR. A mean of 1.4 ± 0.75 procedures were required to achieve successful endoscopic treatment of recurrence. Of 23 patients who were ultimately successfully treated with endoscopic resection, 15 required a single further endoscopic resection after recurrence, 8 patients required 2 or more further resections. 8 patients required surgery, 3 as a result of developing invasive adenocarcinoma with the recurrence.

There were no perforations as a result of endoscopic resection of recurrent lesions 2 cm initially resected, recurrence occurred in 48 patients. 36% of these patients had already had a mean of 1.6 previous failed attempts at resection prior to referral to our institution, and 66% had had either a failed attempt at resection or extensive sampling involving ≥6 biopsies or tattoo placed under the lesion. 69% of patients were successfully treated with further endoscopic resection and avoided surgery. 27 recurrent lesions larger than 20 mm were treated with endoscopic resection, with a mean lesion size of 48.3 ± 19 mm. Techniques used were EMR (n = 16), ESD (n = 2), Hybrid ESD and EMR (n = 9). The remaining lesions < 2 cm were resected using EMR. A mean of 1.4 ± 0.75 procedures were required to achieve successful endoscopic treatment of recurrence. Of 23 patients who were ultimately successfully treated with endoscopic resection, 15 required a single further endoscopic resection after recurrence, 8 patients required 2 or more further resections. 8 patients required surgery, 3 as a result of developing invasive adenocarcinoma with the recurrence.

There were no perforations as a result of endoscopic resection of recurrent lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1518 THE EFFECTIVENESS OF NEW TECHNIQUE WITH SELF-EXPANDABLE METALLIC STENT INSERTION IN TREATING RIGHT-SIDED COLONIC OBSTRUCTION

C.B. Ryu1, M.S. Lee1, J.Y. Bae2

1Digestive Disease Center And Research Institute, Department Of Internal Medicine, SoonChunHyang University School of Medicine, Bucheon/Korea, Republic of

2Department Of Internal Medicine, Seoul Medical Center, Seoul/Korea, Republic of

Introduction: Self-expandable metallic stent (SEMS) is widely used to treat malignant colorectal obstruction. However, most reports about SEMS insertion have concentrated on the left colon and very tough to insert SEMS on the right colon, especially distal ascending colon.

Aims & Methods: This study aimed to (1) investigate the effectiveness of new insertion technique with SEMS for right-sided colonic obstruction and (2) compare the safety, accuracy and technical success of SEMS insertion.

Results: A total of 109 patients were screened for enrollment;749 total colonic obstructions were studied: 383 men (51.1%) and 366 women (48.9%). Colic preparation was good (Boston score ≥ 6) in 49.4% of patients. Colonic obstruction was normal in 434 cases (57.9%). Colonic polyps were detected in 197 patients (26.3%). The mean number of polyps detected per colonoscopy (MND) was 2.31 (min. 1, max: 25). The mean polyp diameter was 6.8 millimeters (1 to 50 mm). The mean withdrawal time was 8.2 minutes (4 to 20 minutes). Overall PDR was 26%. G1 included 599 colonscopies and G2 included 150 colonscopies. PDR in G1 was 28.04% versus 20% in G2, the difference between the two groups was not significant (p: 0.7). As for the MNP, it was significantly higher in G1: 2.29 versus 1.86 in G2 (p: 0.049).

Conclusion: In our study, a withdrawal time exceeding seven minutes was significantly associated with the number of polyps detected in colonoscopy. Further studies may be helpful to confirm these results ideally by comparing these parameters in the same patients.

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compilation (0.10). Concerning SEMS insertion, the technical difficulty and safety of SEMS insertion were similar between right- and left-sided colonic obstructions.

Conclusion: A new technique of curved type guiding tube with SEMS insertion for right-sided colon, especially distal ascending colon is significantly more effective than straight type guiding tube, and this procedure was safer and less technically challenging than expected. SEMS insertion should be considered for treating right-sided malignant colonic obstruction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1523 DIFFERENCES BETWEEN BOWEL PREPARATION QUALITY OF SURVEILLANCE AND SCREENING COLONOSCOPY
Department Of Internal Medicine III, Division Of Gastroenterology & Hepatology, Medical University of Vienna, Vienna/Austria

Aims & Methods: This prospective non-interventional study compared bowel preparation quality according to the Harefield Scale, performance quality measures and patients satisfaction in screening colonoscopies performed within an Austrian quality assurance program.

Results: Colonoscopies performed by 20 endoscopists were included in this study. 50.3% of screened individuals were women. Because of the unequal patient count using CifraFlex® (CF, n = 261), Picoprep® (PP, n = 2678), Klean-Prep® (KP, n = 804) and Moviprep® (MP, n = 1252), PC and CF were grouped as a single cohort (LV). Age and gender adjusted success rates and ADR per purgative were 97.0% and 23.3% for LV, 97.5% and 32.5% for KP and 93.5% and 26.0% for MP. Women had higher success rates than men (p = 0.007) and success rate decreased with patients’ age (p = 0.008). The difference regarding completion of the entire volume was best with LV (89.2%, KP 87.6%, MP 83.7%), which had a significant effect on success rate p = 0.027. 93.5% of patients in the LV group would use the same purgative again compared to 68.4% in the KP and 73.2% in the MP group.

Conclusion: All investigated purgatives met the required quality standards of ≥90% rate of adequate bowel preparation according to the current ESGE guidelines. Success rates were higher in women and younger patients. Although only <9% of patients consumed the whole volume, the majority of patients would use the same purgative again.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1524 DIFFERENCES IN QUALITY OF BOWEL PREPARATION AT SCREENING COLONOSCOPY IN PRIVATE PRACTICES AND HOSPITALS
Department Of Internal Medicine III, Division Of Gastroenterology & Hepatology, Medical University of Vienna, Vienna/Austria

Aims & Methods: Data from screening colonoscopies performed within quality certificate in Austria (2012-2017) provided by 245 endoscopists were evaluated. The recording of the quality of the bowel preparation was described as one of the Austrian quality assurance program. Improvement Initiative”, 90% of colonoscopies should have adequate bowel preparation. The aim of this study was to investigate whether there is a difference in quality between private practices and hospitals.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1525 RISK FACTORS FOR RESIDUAL NEOPLASIA AFTER ENDOSCOPIC MUCOSAL RESECTION OF LATERALLY SPREADING TUMORS
N. Brogyuk1, T. Grega1, M. Voska1, O. Ngö2, O. Majek1, M. Zavoral1, S. Suchanek1
1Section For Clinical Biometrics, Center for Medical Statistics, Informatics And Intelligent Systems, Medical University of Vienna, Vienna/Austria
2Institute Of Biostatistics And Analyses, Masaryk University, Faculty of Medicine, Brno/Czech Republic

Aims & Methods: This retrospective study in a high-volume tertiary-referral center examined patients who had undergone EMR between 2013 and 2015 and who had had at least 1 surveillance colonoscopy after the initial treatment. LRN was defined histologically as the presence of neoplastic tissue in the post-EMR site.

Results: 160 laterally spreading tumors were diagnosed in 138 patients (62% men, mean age 67 years). Mean follow-up interval for surveillance colonoscopy was 6 months. Residual neoplasia at surveillance endoscopy was present following 21% of EMRs. Single variate analysis showed increased risk of residual neoplasia for LST ≥ 20 mm (p = 0.006), villous adenomas (p = 0.01), piecemeal resection (p = 0.011) and G-type morphology (p = 0.003). In multivariate analysis, only size of the lesion (p = 0.080) and villous component (p = 0.043) were found to be a significant risk factor for LRN.

Conclusion: This retrospective study shows that the occurrence of LRN is frequent. Careful colonoscopic surveillance after EMR and the use of new methods to further reduce residual neoplasia are needed.

Disclosure of Interest: All authors have declared no conflicts of interest.
Familial adenomatous polyposis (FAP) is an autosomal dominantly inherited colorectal cancer with a lifetime risk for colorectal cancer close to 100%. Thus prophylactic colectomy is recommended for patients with FAP. Colectomy with ileorectal anastomosis (IRA) is the surgical option of choice in the majority of patients, given the complications and morbidity associated with ileal pouch-anal anastomosis. Therefore, annual endoscopic surveillance is recommended after surgery to prevent cancer in the rectal remnant (CRR).

Aims & Methods: The aim of this study was to determine the impact of endoscopic surveillance on CRR prevention in FAP patients after surgery. We did a retrospective single center study on findings of follow up endoscopies and determination of the cumulative risk of adenomas and prevalence of high risk adenomas (HRA) (villous histology, high-grade dysplasia and ≥ 10 mm) and CRR.

Results: 30 patients submitted to IRA were included (50% women), with a mean age of 43 years, 2 patients with attenuated phenotype. Nine patients had adenocarcinoma in the resected colon. Six patients started chemoprophylaxis after surgery (sulindac 4 – celecoxib 1). The median time to adenoma appearance was 5 years (95% CI 3.4–6.6) and to HRA/CRR 12 years (95% CI 5.2–18.8), with a decreased median time to both adenomas and HRA/CRR in patients under chemoprophylaxis. The cumulative risk of adenomas was 20% at 1 year after surgery, 34.1% at 3 years and 57.4% at 5 years. During the follow up period, 27% of IRA patients developed in 17 patients (56.7%) HRA –12 patients (40%); intramuscular carcinoma -2 patients (6.7%); invasive adenocarcinoma -3 patients (10%). None of the patients died with CRR. The cumulative risk of HRA/CRR was 21.8% at 5 years, 46.1% at 10 years and 66.3% at 15 years. All the patients with HRA/CRR had rectal involvement prior to surgery (p = 0.008) and a higher number of adenomas resect in the rectal remnant (p = 0.017).

Conclusion: The FAP endoscopic surveillance program allowed detection of HRA/CRR in a high percentage of patients. Based on these results, an intensive surveillance program should be suggested but endoscopic surveillance intervals widen in the first 5 years after surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P5157 BOWEL PREPARATION FOR FLEXIBLE SIGMOIDOSCOPY: COMPARISON OF POLYETHYLENE GLYCOL ELECTROLYTE SOLUTION (PEG-ES) AND PHOSPHATE ENEMA IN 4,949 PATIENTS AT TWO UK HOSPITALS
A. Youaf, S. Paranahewa, A. Jeevagan, P. Mayhead Gastroenterology, East Sussex Healthcare NHS Trust, Eastbourne/United Kingdom

Contact E-mail Address: abdyas12@nhs.net

Introduction: Flexible sigmoidoscopy is increasingly used to optimise the diagnostic yield of the test, and also to minimise the number of repeat procedures. However, the optimum bowel preparation for this procedure has consistently been debated. Aims & Methods: Both phosphate enema and (PEG-ES) are commonly used for bowel preparation in flexible sigmoidoscopy at both hospitals participating in this study. We therefore wanted to compare the outcomes for these two methods. We retrospectively reviewed all the patients who underwent flexible sigmoidoscopy from January 2014 to December 2016 using each hospital’s electronic endoscopy reporting system. We analysed their demographics, type of bowel preparation used in each case, and the quality of their individually achieved examination.

Results: In total 6196 patients underwent flexible sigmoidoscopy during the study period (males 2885 (46.58%), mean age 62.80 years, range 16–101 years). 1247 (20.15%) patients were excluded from further analysis for the following reasons: N / A (n = 127), patients who performed the examination at another hospital (n = 451), non-compliance of the quality of the bowel preparation (n = 657), and non-(PEG-ES) oral preparation used (n = 139). A total of 4949 patients were included in the study, of whom 2103 had (PEG-ES) (42.49%) (males 986 (46.89%), mean age 60.97 years, range 18–95 years) and 2846 (57.50%) (males 1269 (44.59%), mean age 63.98 years, range 17–101 years) had phosphate enema. The results are summarised in the table below.

Type of bowel preparation Excellent Adequate Inadequate Total Adequate Excellent Inadequate
(PEG-ES) (n = 2103) 1126 (53.54%) 770 (36.61%) 1806 (80.16%) 207 (9.84%)
Phosphate enema 624 (21.93%) 1297 (45.57%) 1921 (67.50%) 925 (32.50%)
Total (n = 4949) P < 0.0001

Conclusion: Our large retrospective study showed that oral preparation with (PEG-ES) gave significantly better results than phosphate enema, which gave acceptable results in only 67.5% of the patients. As a result of this study, PEG-ES is now the preferred option at our hospitals, if there is no contraindication for this.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P5158 MANAGEMENT OF RESECTION OF LARGE COLONIC LESIONS IN A REAL-LIFE SETTING: THE SCALP STUDY
A. Amato1, F. Radadei2, V. Cennamo3, E. Di Giulio4, L. Fucchio5, G. Manes6, G. Tarrantino6, G. Fiorei7, M. De Bellis8, A. Budai9, P. Piggi10, P. Cesaro11, A. Anderloni12, P. Ochepiniati13, G. Felicangeli14, P. Dullerco11, A. Maso15, G. Gullotti11, M. Giardini16, B. Mangiavillano17, S. Paggi2, C. Hassan18, A. Repicì19
1Gastroenterology Division, Valdaste Hospital, Como, Italy, Como/Italy
2Maggiore Hospital, Bologna/Italy
3AO Sant Andrea, Rome/Italy
4Pollicino Sant’Orsola Malpighi, Bologna/Italy
5ASST Rho, Arzano, Garbagnate Milanese/Italy
6Gastroenterology And Digestive Endoscopy, San Giuseppe Hospital, Empoli/Italy
7European Institute of Oncology, Milan/Italy
8National Cancer Institute, G. Pascale Foundation, Naples/Italy
9Gastroenterology: And Digestive Endoscopy Unit, Ospedale di Feltre, Feltre/Italy
10Asa Modena, Gastroenterology and Digestive Endoscopy Unit, Modena/Italy
11Fondazione Poliambulanza, Brescia/Italy
12Humanitas Research Hospital, Milan, Italy... Rozzano/Italy
13Gastroenterology Unit, "Mater Domini" Hospital, Novara/Italy
14Macerata Hospital, Macerata/Italy
15Genou University, Genoa/Italy
16Citii della Salute e della Scienza, Turin/Italy
17AOU Policlinico G. Martino, Messina/Italy
18Urbino Hospital, Urbino/Italy
19Gastrointestinal Endoscopy Unit, Humanitas - Mater Domini, Castellanza (VA) / Italy
20Gastroenterology, Nuovo Regina Margherita Hospital, Italy/Italy

Contact E-mail Address: armamato@gmail.com

Introduction: Endoscopic resection of large colonic lesions (LCLs, > 20 mm) is effective and it is associated with an acceptable incidence of incomplete resection and complications when performed by appropriately trained endoscopists in resource centers1–22. Scanty data on the management of these lesions outside referral centers are reported in the literature.

Aims & Methods: Aim of present study is to evaluate the management of endoscopic resection of LCLs and intra-procedural complications in a real-life setting. In a prospective, multicenter, observational study in 20 centers, data from consecutive endoscopic resections of LCLs performed over a 6-month period were collected by a web-database. All patients undergoing LCLs resection were enrolled at procedure-time and followed-up at 15 days for adverse events and at 6 months for endoscopic/histological recurrence.

Results: 1453 LCLs (mean size 30.6 mm, SD 12.4; 41.4% lateral spreading tumor, 28.1% sessile, and 30.5% pedunculated) removed in 1329 patients (58% males, mean age 66±11.4 years) were analysed. An endoscopic mucosal resection (EMR) was performed in 57.9%, snare polypectomy in 57.4%, underwater EMR in 1.2% and endoscopic submucosal dissection in 6.2% of the lesions. Patients with LCLs, 19.4% were on AT (62.5% aspirin, 12.2% thienopyridines, 4.8% dual antiplatelet, 15.4% vitamin K antagonists [VKAs], 5.1% direct oral anticoagulants [DOACs]). Aspirin and/or thienopyridines were withheld before resection in 53.6% and 91.7% of patients, respectively. Overall, intra-procedural bleeding requiring endoscopic therapy occurred in 8.1% of patients; 28% of them were on ATT, which had always been withheld, but in 48% of patients on aspirin. At multivariate analysis, intra-procedural bleeding was correlated with increasing polys size (Odds Ratio 1.02 95% Confidence Interval 1.01–1.04), and inversely with execution of pre- and post-resection prophylaxis maneuvers (Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 and Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 respectively). As concerns
comparisons, delayed bleeding occurred in 4.5% of the subjects, whereas per-
fusion occurred in 1.5% (0.9% early and 0.6% delayed) of patients, 86.7% of whom were successfully managed endoscopically. At the moment, 6-months follow-up is available for 35% of the patients, with a positive sessile and/or histological recurrence documented in 22.8%.

Conclusion: The management of resection of LCLs varies widely. The incidence of intra-procedural bleeding correlates with polyp size and prophylactic maneuvers, and its endoscopic management is successful in most of cases. Overall, complication rate is marginal and efficacy is good, even in a real-life setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1529 ENDOSCOPIC REMOVAL OF HIGH-RISK COLORECTAL ADENOMAS: SAFE AND EFFECTIVE?

M. Rutka1, K. Farkas2, A. Fabiani3, R. Bot3, A. Balint1, A. Milasinn3, Z. Szepes1, T. Molnar3
1First Department Of Internal Medicine, University Of Szeged, Szeged/Hungary

Contact E-mail Address: rutka.marianna@gmail.com

Introduction: The incidence and mortality of colorectal cancer (CRC) can be decreased trough the removal of precancerous adenomas. Endoscopic removal of polyps over 2 cm is considered a high-risk procedure both for complications and malignant transformation.

Aims & Methods: The aim of this study was to evaluate the outcome and complication rate after endoscopic removal of polyps over 2 cm. In this retrospective study clinical and demographic data of patients undergoing polypectomy due to colorectal adenoma over 2 cm between 2012 and 2017 were collected. Data of endoscopic procedures, complications of polypectomy and histological assessments of the removed polyp were obtained.

Results: Data of 100 patients (male/female: 58/42) was analyzed in the study. Fifty-two of the 106 removed polyps proved to be pedunculated, 21 were sessile and 34 flat. Six patients had more than one large polyp (>2 cm). The locations of the removed polyps were rectum in 33, sigmoid colon in 38, coecum in 12 and other parts of the colon in 23 patients. In 65 cases, polyps were excised with endoscopic mucosal resection (EMR) or hybrid endoscopic submucosa dissection (ESD). In 41 cases snare was used to remove the polyps in one or more pieces. Based on histological findings 54 (50.9%) polyps were shown to be low-grade adenomas, 34 (32.07%) high-grade adenomas, 1 (0.9%) polyp was hyperplastic, and 17 (16.03%) proved to be malignant among which complete endoscopic removal was achieved in 9 patients (52.9%). Additional smaller polyps were found in 39 patients and a synchronous cancer in 7. During polypectomies 91 hemoclips were deployed to close suspected perforation (8 cases) to cease bleeding (19) or for prevention. Postpolypectomy syndrome developed in 8 cases. Second-look colonoscopy was required in 8 cases due to bleeding within a mean of 4 days after the first examination. Hemoclip insertion was needed in 5 cases and epinephrine injection in 1 case. The bleeding stopped spontaneously in 2 cases. Surgical intervention was not needed in any case.

Conclusion: Malignant transformation was revealed in 16% of the polyps over the size of 2 cm. Complete endoscopic removal of these polyps was successfully performed in half of the patients. Endoscopic removal of high-risk polyps is safe in experienced hand.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1530 WHAT IMPROVED AND WHAT REMAINS TO BE ACHIEVED IN ORDER TO COMPLY WITH THE NEW RECOMMENDATIONS OF POLYPECTOMY BY THE EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY

1Gastroenterology, CHVNG/E, Vila Nova De Gaia/Portugal
2Gastroenterology, Centro Hospitalar Vila Nova de Gaia/Espinho, Vila Nova De Gaia/Portugal

Contact E-mail Address: jamepeter@gmail.com

Introduction: The choice of polypectomy technique differs according to regional preferences and availability. This year, in order to standardize the approach to this techniques, the European Society of Gastrointestinal Endoscopy (ESGE) published recommendations for colorectal polypectomy and endoscopic mucosal resection (EMR).1

Aims & Methods: We aimed to evaluate the recent years evolution of the adherence to the recommendations of colorectal polypectomy and EMR at a tertiary center. We conducted a univariate analysis of polypectomy and mucosectomy techniques performed consecutively between January and June of 2011 and 2016 at a tertiary center. According to the recommendations, the excision of sessile and flat polyps is considered adequate when performed with cold biopsy forceps or cold snare for polyps <3 mm, cold snare or 4-mm, cold or hot snare if 10-19 mm and EMR if ≥20 mm. Polypectomy of pedunculated polyps is considered adequate when performed with a diathermic loop in polyps <20 mm, always in association with any prophylactic therapy when polyp size ≥20 mm.

Results: We included 1721 endoscopic procedures of polypectomy and EMR, concerning 1769 patients (64.2% male, mean age 64.2 ± 11.0 years). 1381 (80.2%) sessile polyps, 153 (8.9%) flat lesions and 187 (20.9%) pedunculated polyps were identified, with a mean size of 7.9 ± 7.0 mm. Regarding sessile and flat polyps, one of the recommended excision techniques was performed in: 84.6% (n = 270) of ≤3 mm polyps (75.7% in 2011 vs. 98.5% in 2016; p < 0.001); 22.2% (n = 109) of 4-5 mm polyps (12.5% vs. 36.5%; p < 0.001); 13.4% (n = 59) of 6-9 mm polyps (5.4% vs. 23.8%; p < 0.001); 100% (n = 206) of 10-19 mm polyps and 100% (n = 88) of ≥20 mm lesions. For pedunculated polyps, the excision technique was adequate in: 99.3% (n = 134) of polyps of size <20 mm (100% vs. 97.6%; p > 0.05) and in 84.6% (n = 44) of those ≥20 mm (82.6% vs. 86.2%; p > 0.05). Overall, 52.3% (n = 900) of endoscopic procedures of polypectomy or EMR were performed as recommended; 42.7% (n = 410) in 2011 vs. 64.5% (n = 490) in 2016; p < 0.001.

Conclusion: Even before publication of the European recommendations, there has already been an increase in the proportion of polypectomies performed adequately in the different groups of lesions. There is still a need to adjust clinical practice in some subgroups, especially in polyps of size 4-9 mm, in order to strictly comply with the recommendations.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1531 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) OF SUPERFICIAL COLORECTAL NEOPLASMS AT THE ANAL CANAL AND ILEOCOEAL VALVE

1Ospedale S. Giuseppe, Albano L., Rome, Italy, UOC Gastroenterologia ed Endoscopia, Albano Lazio/Italy
2Endoscopy Division, National Cancer Center Hospital Endoscopy Division, Tokyo/Japan
3Division Of Gastroenterology And Hepatology, Department Of Medicine, Nihon University School of Medicine, Tokyo/Japan
4Ospedale S. Giuseppe, UOC Pathology and Cytology, Marino/Italy
5Ospedale S Giuseppe, UOC General Surgery, Albano Lazio/Italy
6Digestive Endoscopy Unit, Università Cattolica del Sacro Cuore, Roma/Italy

Contact E-mail Address: federico.iacopini@gmail.com

Introduction: Endoscopic resection of superficial neoplasms at the perianal rectum is difficult due to pain sensitivity, narrowness of the anal canal, presence of internal rectal plexus, whereas that of at the ileocecal valve (ICV) due to the variable morphology of the ICV itself and ileal involvement.

Aims & Methods: Aim was to assess the feasibility and outcomes of ESD in these locations. Prospectively collected database in a single nonacademic center. From 2010 to 11.2016, all consecutive patients scheduled to ESD for a superficial neoplasm in the perianal rectum (distal margin <30 mm from the dentate line) and at the ICV were compared to those in the pelvic rectum and in the cecum and ascending colon, respectively. ESD was performed with the standard technique. Follow-up was scheduled at 3 and 6 months within the first year and then yearly. Biopsies were taken from the scar of the resection site if a residual tissue was detected.

Results: A total 16 neoplasms at ICV were compared to 110 neoplasms in the cecum and ascending colon; 30 neoplasms in the perianal rectum were compared to 58 cases in the pelvic rectum (Table). Features of neoplasms in the perianal and pelvic rectum were no different as well as neoplasms at the ICV and cecum and ascending colon. ESD en bloc rates were lower in the perianal rectum and at the ICV, but no significant differences were found with the respective control groups (P = 0.490 and 0.404, respectively). ESD R0 rate was significantly lower at the ICV (P = 0.021). Adverse events were not different, although 3 perforations occurred in the cecum and ascending colon. During follow-up (median 36 months; range 24-84): residual tissue was diagnosed at the ICV in 2 (13%) cases, in the cecum and ascending colon in 2 (2%) cases (P = 0.078); in the perianal rectum in 4 (13%) cases and pelvic rectum in 2 (3%).

Conclusion: The ESD of neoplasms at the ICV and perianal rectum is feasible and effective. The complete resection rate is low due to the challenging anatomy of
that precludes conducting a mucosal incision far from tumor margins. A careful endoscopic follow-up is mandatory to detect residual neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1552 SELF-EXPANDABLE METALLIC STENT IN THE TREATMENT OF OCCLUSIVE COLORECTAL CANCER AS PALLIATIVE TREATMENT

T. Gago, A. Antunes, A.M. Vaz, P. Queiroz, J. Roseira, A. C. Cunha, A. Ramos, H. Guerreiro
Servigo De Gastroenterologia De Faro, Centro Hospitalar do Algarve, Faro Portugal

Contact E-mail Address: taniagago@gmail.com

Introduction: Colorectal cancer (CRC) is one of the most common malignancies in developed countries, with associated occlusive disease being relatively common. Endoscopic placement of self-expandable metallic stent (SEMS) is the first-line palliative treatment for malignant bowel obstruction.

Aims & Methods: Evaluate the outcome of endoscopic SEMS placement in CRC obstruction. Retrospective analysis of patients CRC submitted to endoscopic placement of SEMS from 2009 to 2016 in the Gastroenterology Department of Centro Hospitalar do Algarve. Statistical analysis was performed with SPSS version 23.

Results: The study included 23 patients with CRC obstruction, who were submitted to endoscopic SEMS placement, with a mean age of 75.2 ± 13.47 years. The stents were placed with a palliative purpose in 69.6% of cases (n=16) and a transitory procedure before surgery in 30.4% of cases (n=7). Technical and clinical success was found in 91.3% of the patients, without any recorded death during the procedure. In patients whose goal was palliative treatment (75% men and 25% women) they had a mean age of 81.6 ± 9.28 years. In 43.8% of the patients the tumor was located in the rectum, 31.6% in the sigmoid region and 25% in the recto-sigmoid transition. Being the majority (75%) well differentiated. There was a need for dilatation in 31.3%, most of the stents were uncovered (56.3%), 25% of the patients had complications. After stent placement, about 25% of the patients did chemotherapy. There was a 75% mortality rate (37.5% died by 6 months and 37.5% died by 12 months of follow-up). The use of chemotherapy after SEMS placement influenced the complications associated with the procedure (p<0.05) but none of the other variables had a statistically significant influence on early death (up to 6 months).

Conclusion: SEMS is an effective and safe palliative option for unresectable tumors, although the use of chemotherapy after the placement of prostheses may have an influence on the appearance of complications. Malignant colon obstruction of the colon can be treated effectively with the use of endoscopic techniques.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

COLORECTAL LESIONS?

HYBRID DISSECTION: WHICH TECHNIQUE TO FAVOR IN LARGE COLORECTAL LESIONS?

P1536 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VS HYBRID DISSECTION: WHICH TECHNIQUE TO FAVOR IN LARGE COLORECTAL LESIONS?

M. Guillaumot, S. Leblanc, H. Soliman, B. Brieau, M. Barret, R. Coriat, F. Prat, S. Chausrade

Gastroenterology, Cochin Hospital, Paris/France

Contact E-mail Address: marie-anne.guillaumot@aphp.fr

Introduction: Large colorectal lesions (>20 mm) can be removed endoscopically by endoscopic mucosal resection (EMR), often in a piecemeal fashion resulting in low en bloc and radical (R0)-resection rates. In this study, submucosal dissection (ESD) allows en bloc resection whatever the size, but still remains technically difficult and time consuming. A hybrid endoscopic technique has been developed, called simplified or hybrid dissection. The aim of our study was to evaluate the efficacy of complications of endoscopic submucosal dissection (ESD) compared to classical endoscopic submucosal dissection.

Aims & Methods: Our study was carried out from January 2013 to June 2016. From the prospective database. The 40 lesions removed by hybrid technique were compared to a control group of 109 ESD (36.5%) performed as follow: submucosal injection around the lesion of macromolecules, circumferential mucosal incision and submucosal dissection using the tip of a single-strand snare by endo-cut Q mode, central submucosal injection of the lesion and final resection with the single-strand snare, if possible in en-bloc. Patient characteristics, tumor location and size, dissection characteristics, "block" resection rate, R0 resection rate (healthy margins), procedure and hospitalization time, and complications were identified and compared with the so-called "classical" ESD technique.

Results: Lesions were more frequently located in the colon (vs rectum) in the hybrid dissection group compared to the ESD group (72.5% versus 26.8%, p < 0.001). Adenomatous lesions were type Hc according to Paris classification in 10% of the hybrid dissection group and 13.1% in the ESD group (p = 0.8). The mean size of the lesions was lower in the hybrid dissection group than in the ESD group (32.4 mm ± 13 mm compared to 54.4 mm ± 26.7 mm, p < 0.001). An en bloc resection was performed in 52.5% and 84.4% in the hybrid dissection and ESD group, respectively (p < 0.001). The procedure time (including general anesthesia time) was lower in the hybrid dissection group compared to the ESD group (105 min ± 62 min vs 191 min ± 73 min, p < 0.001, respectively). The hospitalization time was lower in the hybrid dissection group than in the ESD group (1.1 days ± 1.13 days vs 2.8 days ± 1.8 days, p < 0.001). R0 resection rates were lower in the hybrid dissection group than in the ESD group (47.5% and 61% respectively, p < 0.001). Hybrid dissection was performed for adenocarcinoma, adenoma with high grade dysplasia and adenoma with low grade dysplasia in 12.5%, 42.5% and 40%, respectively. The rate of adenocarcinoma was lower compared to the ESD group (12.5% versus 30.8%, p = 0.009). In the hybrid dissection group, the rate of perforation was lower than the ESD group (0.2% versus 2%, p = 0.3). There was no significant difference between the hybrid and ESD group in the bleeding (1.8% in the hybrid dissection group and 2.5% in the ESD group). In case of complications, there was no need of surgical treatment in the hybrid dissection group, but was needed in one patient in the ESD group.

Conclusion: Hybrid dissection is less effective in terms of en bloc resection of large colorectal tumors. Classical endoscopic submucosal resection should be preferred, especially in case of suspected adenocarcinoma despite longer procedure and hospitalization time.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1537 TRENDS IN STATISTICS REGARDING EFFECTIVE ELECTRIC ERCP PROCEDURES IN THE VENETO REGION: A RETROSPECTIVE STUDY BASED ON ADMINISTRATIVE DATABASES

M. Saia1, E. Rosa-Rizzotto1, E. Guido1, D. Caroli1, A. Frasson2, B. Germana3, F. De Lazzari3, S. Leblanc, H. Soliman, B. Brieau, M. Barret, R. Coriat, F. Prat, S. Chausrade

1Diplo. Di Gastroenterologia, St. Anthony Hospital Gastroenterology Unit Dept. of Medicine, Padova/Italy
2Surgery Unit, Padova/Italy
3San Martino Hospital - Unit/ Gastroenterologic Unit, Belluno/Italy

Contact E-mail Address: d.caroli@libero.it

Introduction: Since its introduction in 1968, Endoscopic retrograde cholangiopancreatography (ERCP) has become a procedure widely used to diagnose and to treat conditions associated to the pancreatobiliary system. It is nevertheless associated to the highest risk of complications of all routine endoscopic procedures. It is important to have a thorough understanding of the potential complications and the adverse events that may be associated to ERCP procedures so that these may be managed appropriately should they occur. The aim of this study was to examine the trends in ERCP usage here in the Veneto Region (Northeastern Italian area) and, in particular, the complications and mortality rate associated to it.

Aims & Methods: Utilizing an anonymous database of hospital discharge records referring to the period between 2007 and 2015, a retrospective study was carried out to examine the complications associated to ERCP. All of the elective hospitalizations for gallstones in the bile duct during which the procedure was carried out within two days of being hospitalized were examined. Hospitalizations for neoplasms were not considered. The study considered the onset of complications or death as outcome indicators as well as the patients' post-procedure hospital stay. The threshold value that was utilized was 2 days and the patients who later underwent surgery (e.g. cholecystectomy) were excluded from our analysis; the associations between the type of hospital where the patients were being assisted both with regard to the type of organization (Hub or Spoke model) and the type of management (public/private) were also evaluated.

Results: A total of 3,136 admissions out of total of 14,626 hospital days (SD: 4.6 ± 5.8 days) were identified in a total of 40 hospitals, 6 (15%) of which provided more than 50% of the total days of hospitalization. The age distribution of the patients (13 cases) and there was a 6.1% of deaths due to complications. As far as the post-procedure hospital stay was concerned, in 55% of the cases, the discharge of patients within two day period was more frequent in those assisted in public hospitals (OR:1.55;IC95%:1.21–1.98;p < 0.05) in which 90% of the activities were carried out and no differences linked to their characteristics. The stratification of complications according to the type of hospital (range 2–17%) did not reveal any significant differences between public or private hospitals. Study findings uncovered that pancreatitis was the most common post-procedure ERCP complication in the patients studied; the total complication rate was in line with that reported in the literature. That result and the fact that no correlation was found between the the type and percent of complications and the type of hospital can be attributed to the effective regional hospital organization characterized by a capillary network of specialists capable of performing complex endoscopic procedures throughout the region limiting the need for transfer patients from one hospital to another.

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Conclusion: In our study, metabolic complications were not associated with an increased risk of mortality. It seems more important to evaluate and weigh the role of these conditions in larger prospective studies since the expanded prevalence of metabolic syndrome in general population.

P1539 PLACE OF ENDOSCOPIC RETROGRADE CHOLANGIPANCREATOGRAPHY (ERCP) IN THE MANAGEMENT OF HEPATIC HYDATID DISEASE

Gastroentero, Habib Thameur Hospital, Tunis/Tunisia

Contact E-mail Address: hajer.hassine@gmail.com

Introduction: Hepatic hydatid disease (HHD) is a major endemic health problem in certain areas of the world such as Tunisia. Intraductal rupture of a hepatic hydatid cyst is a common complication ranging between 3 and 17%. From the surgical standpoint, biliary drainage is the most frequent postoperative complication following surgery for hydatid cysts of liver. Both conditions require endoscopic biliary drainage.

Aims & Methods: The aim of this study was to assess the results of ERCP in patients suffering from HHD. We retrospectively analyzed the results and complications of all ERCP performed for HHD whether before or after surgical treatment over a 10 years period [January 2007 - December 2016] and carried out at the gastroenterology unit of our hospital.

Results: Sixty seven procedures were included (mean age 40.4 years [15–82] and sex ratio male/female [31:36]). Of the 67 procedures, 58 (86.6%) were performed in patients who had undergone previous surgery. The indications of the ERCP were persistent external biliary fistulae in 77.6%, obstruction or cholangitis due to residual materials within bile duct in 20.7% and secondary biliary strictures in 1.7%. In patients who had not undergone previous surgery (13.4%), the indications of the ERCP were cholangitis due to intra-biliary rupture of hydatid cyst in 44.4% associated with acute pancreatitis in 55.6%. The cannulation of the papilla was impossible in 6 cases (8.9%) and the endoscopic sphincterotomy (ES) could not be performed. When papilla cannulation was obtained, per endoscopic cholangiographic findings were: dilation of the biliary tract (21.3%) with filling defects of varying size and shapes (52.3%), leakage of contrast medium into the cyst cavity (41%) and distal strictures (3.3%). ES was then performed in all cases with satisfactory results. Thus, hydatid membranes (36%) or daughter cysts (1.6%) encountered in bile ducts have been emptied out in 93.4% by biliary drainage. One mortality. These were significantly associated with older age and the total number of medical comorbidities the patients had (p < 0.05). Deficiencies practices and information gathering were noted mostly with respect to the role of these conditions in larger prospective studies since the expanded prevalence of metabolic syndrome in general population.

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P1540 QUALITY INDICATORS AND POST OPERATIVE OUTCOME OF ERCP PERFORMED IN A LOW RESOURCE SETTING; CAN QUALITY INDICATORS FROM DEVELOPED SETTINGS BE APPLIED?

I. Kongala Liyanage1, E. Thalagala1, S. Kulatunge1, R. Peris1, N. Nawarathne1,2
1Gastroenterology And Hepatology Unit, National Hospital of Sri Lanka
2Colombo/Sri Lanka

Contact E-mail Address: Isuruji@gmail.com

Introduction: Endoscopic Retrograde Cholangiopancreatography (ERCP) is a complex and invasive procedure. Quality control and monitoring for complications is an important part of ensuring patient safety. Gastroenterology and Hepatology unit of the National Hospital of Sri Lanka performs the most number and variety of ERCP procedures in Sri Lanka. Although facilities are limited, detailed patient records and logs were maintained since commencement of ERCP procedures in this unit.

Aims & Methods: A retrospective analysis was carried out on quality indicators and complications of the ERCP procedures performed in this unit since 2006. Data from written records were entered into an electronic database and analysis was done using STATA version 13. Quality indicators and standards published by the American Society of Gastrointestinal Endoscopy and American College of Gastroenterology in 2015 were used.

Results: A total of 3780 ERCP procedures were performed. Females consisted of 54% of the patients (n = 2041). Mean age in years was 57.6 (SD = 8.4). Male patients were older with a mean age of 61.2 years whereas the mean age of females was 54.6 years (P < 0.05). Cholelithiasis was the commonest indication (85%) and 68% out of these patients had active cholangitis at the time of the procedure. Chronic pancreatitis, benign and malignant strictures requiring stenting, postoperative bile duct damage and the other common indications. Data were analyzed and compared with 19 out of the 24 quality indicators. A total of 15 quality standards were met (7/9 pre procedure, 4/5 intra procedure and 4/10 post procedure). Most prevalent major complications were Post ERCP Pancreatitis (PEP) and post ERCP Cholangitis (PEC) complicating 2.22% and 4.78% procedures respectively. Mortality was less than 0.1% (n = 3). Cardiovascular complications and complications of anesthesia were seen in 16 patients (0.41%) resulting in one mortality. These were significantly associated with older age and the total number of medical comorbidities the patients had (p < 0.05). Deficiencies practices and information gathering were noted mostly with respect to the role of these conditions in larger prospective studies since the expanded prevalence of metabolic syndrome in general population.

Conclusion: This supports the fact that centers with minimal resources can monitor quality standards and maintain satisfactory patient safety levels. Low numbers of postoperative complications were noted in this review. Old age and having multiple medical comorbidities were associated with a higher complication risk. Quality checkpoints help to identify deficiencies in practice as well as documentation and help to adjust future practices, even in low resource settings.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1541 USE OF MICROCATHETERS IN ECHOENDOSCOPY-GUIDED BILIOPANCREATIC DUCT REPLACEMENT—INITIAL EXPERIENCE

J. Pinto, C. Saldàña Dueñas, C. Leitão, I. Fernández-Urien Sainz, J.J. Vila
Endoscopy Unit, Biliary And Pancreatic Diseases Unit, Complejo Hospitalario de Navarra, Pamplona/Spain

Contact E-mail Address: jsdiaspinto@gmail.com

Introduction: EUS-guided biliary or pancreatic rendezvous is a technically demanding procedure, and the intraductal manipulation of the guidewire remains the most challenging step. Passing the guidewire through the needle may cause its slippage or consequent damage of the duct wall. Anatomically, the bile ducts are small-calibered structures requiring a fine guidewire. The aim of this study was to evaluate the success rate and safety of this technique.

Aims & Methods: We aimed to evaluate the early experience of the microcatheter method in EUS-guided rendezvous procedures in the biliary and pancreatic ducts. During EUS-guided biliary or pancreatic rendezvous, initial puncture of the duct of interest was attempted with a 19G needle without stilet and...
previously flushed with contrast. A 0.025" guidewire was then inserted through the needle into the duct and advanced antegrade to the papilla. If further manipulation was necessary to enter the duodenum, movements were performed with caution in order to avoid fragmentation of the guidewire. Whenever the passage through the papilla was not achieved or the guidewire movements were hampered, we performed a microcatheter technique. After removing the needle, leaving the guidewire in situ, a 3F, 150 cm long microcath- eter was inserted over the guidewire into the duct. Then, manipulation of the guidewire, guidewire exchange and contrast injection were performed according to the discretion of the endoscopist. We reviewed the cases of EUS-guided pancreatic or biliary rendezvous performed in our unit using microcatheters from September 2015 to March 2017. Technical success was considered when the rendezvous could be completed.

Results: Nine patients presented with previous unsuccessful manipulation of the guidewire with the needle during EUS-guided biliary or pancreatic rendezvous underwent a microcatheter-guided attempt on the same procedure. Pancreatic rendezvous was attempted in 3 cases (2 sterile pancreatitis, 2 pancreas divisum and 1 pancreatic cancer) and biliary rendezvous in the other 4 (3 biliary stenosis and 1 ampu- loma). Technical success was achieved in 7 patients (78%) with the microcatheter technique. Technical failure occurred in 1 patient with biliary stenosis in whom a EUS-guided hepatico-gastrostomy was performed in the same procedure and in 1 patient with chronic pancreatitis with symptomatic pancreatic duct stenosis. There were no adverse events after the procedure, irrespective of technical success.

Conclusion: In our series, using a microcatheter for the indwelling manipulation of the guidewire increases the EUS-guided rendezvous technical success without increasing the complication rate, irrespective of technical success.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Aims & Methods: Appropriate accessories.

The diagnosis of residual or fragmented stones after lithotripsy for cholangiopancreatoGRAPHY

Results: As a result of analysis of the 892 ERCPs performed during 4 years, the mean duration of fluoroscopy time was 5.52 mins (95% CI, 5.15–5.93). Mean radiation duration were as follows: CBD stones (n = 511, 5.76 mins); malignant stenosis of bile duct (n = 189, 5.78 mins); pancreatic disease (n = 95, 5.28 mins); benign stenosis of bile duct (n = 51, 5.32 mins); and peripancreatic stenosis (n = 30, 5.40 mins). Time of prolonged duration of fluoroscopy time was related with specific factors of patient included age, BMI, diagnosis and procedure complexity (p < 0.05). Among the parameters, procedure complexity was the most significant relation with radiation dose. In addition, more procedures performed during ERCP and mechanical lithotripsy (all p < 0.05).

Conclusion: ERCPs are associated with significantly higher radiation exposure to patients and endoscopists. The endoscopic procedure duration and radiation dose of ERCP were increased dose of radiation required when performing ERCP in patients with increased BMI, old age, and who need two more ERCP procedure.

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P1548 DOUBLE-BALLON ENTEROSCOPY FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

Contact E-mail Address: celinehauoi@hotmail.com

Introduction: Double-balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography (DB-ERCP) allows access to the biliary ducts of patients with surgically altered upper gastrointestinal anatomy. We studied the feasibility and efficacy of DBE-ERCP at our institution.

Aims & Methods: This is a retrospective study of all patients with surgically altered GI anatomy who underwent DBE-ERCP at our institution between February 2011 and March 2017. The primary endpoint was the global success rate of DBE-ERCP. The secondary endpoints were (1) the success rate of enteroscopy defined as reaching the desired postsurgical anatomic target, (2) the diagnostic success rate defined as successful cannulation of the native papilla or

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anastomosis, and (3) the therapeutic success rate. We used a 2.2 m DBE with a 2.8 or 3.2 mm of operating channel (EN-450 T5, or EN580T Fujinon inc Saitama Japan).

Results: A total of 12 patients (sex ratio1/1) with a mean age of 65 [47–82] underwent 14 DBE-ERP, 7 patients had Roux-en-Y gastro-jejunostomy with a biliopancreatic anastomosis had Roux-en-Y with a native papilla, and 1 patient had a Billroth II gastric bypass. Enteroscopy success rate was 93% (13/ 14 procedures). The diagnostic success rate was 85% (11/13 procedures) with 4/5 of native papillae. Therapeutic interventions including sphincterotomy (n = 4), biliary stone extraction (n = 4) and biliary dilation (n = 2) were needed in 8/11 procedures and their success rate was 100%. The global success rate of DBE- ERP was 78% (11/14 procedures). Our results were comparable to those of the literature (global success rate of 82%). The only complication was one case of superficial intestinal lacerations without perforation (complication rate 7%).

Conclusion: DBE-ERP in patients with surgically altered upper GI anatomy is a safe and efficient procedure with a global success rate of 78%. Using shorter enteroscopes with wider operating channel in the future might improve the success rate of the technique.

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A. Tringali1, M. Cinto1, L. Cristofori1, E. Forti2, F. Pugliesi1, L. Dioscoridi1, M. Mutignani1
1Endoscopy Unit, Niguarda Hospital, Milano/Italy

Contact E-mail Address: albrtr10@gmail.com

Introduction: Biliary cannulation may be difficult in 10–15% of patients (1) and needle-knife sphincterotomy is more often used as a rescue treatment. A more recent technique for difficult cases is transpancreatic sphincterotomy. Both situations are well known as Post-ERP pancreatitis risk factor (2). To best of our knowledge only few studies compared success rate and adverse events in these techniques (3–7).

Aims & Methods: We aimed to compare the efficiency and safety of NKS comparing to TPS in difficult biliary cannulation We conducted a bibliographic search using PUBMED, EMBASE including 2 RCTS and 4 non randomized trials from January 2000 to December 2016. OR using the Mantel-Haenszel method was used for dichotomous variables. Quantitative synthesis was performed using Review Manager version 5.0. Primary outcome was success rate. Secondary outcomes were rate of overall complications, and pancreatitis. Clinical heterogeneity was assessed by I2 value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Success rate was higher in NKS group compared to TPS (OR 2.98 [95%CI 1.43–5.85], p = 0.004). Complications and risk of pancreatitis were similar in both group (OR 0.37 [95%CI 0.17–0.82], p = 0.013; OR 0.99 [95%CI 0.68–1.57], p = 0.971)

Conclusion: NKS is associated with higher success rate with equal risk of complication and pancreatitis risk compared to TPS. Further and well design RCTs are needed before a firm conclusion could be made.

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References


A. Constantinescu1, A. Constantinescu1, I. Moro1, V. Sandru1
1Dept. Of Gastroenterology, SCUB, Bucharest/Romania
2Emergency County Hospital, Craiova, Craiova/Romania
3Dept. Of Gastroenterology, Clinical Emergency Hospital Bucharest, Bucharest/Romania

Contact E-mail Address: gabrielconstantinescule63@gmail.com

Introduction: Choledocholithiasis is a relative frequent condition in patients with gallbladder stones (prevalence of 3–16%). Endoscopic sphincterotomy and stone extraction is the recommended treatment of bile duct stones. In the case of residual or recurrent lithiasis and choledocholithiasis, endoscopic therapy, cholecystectomy combined with bile duct exploration or intraoperative endoscopic retrograde cholangiopancreatography should be performed.

Aims & Methods: The main objective of this study was to evaluate the efficacy of endoscopic extraction methods in patients who presented choledocholithiasis. We conducted a retrospective single center study over 7 years from Jan 2009 to Dec 2015. Patients with single or multiple bile duct stones submitted to endoscopic retrograde cholangio-pancreatography (ERCP) were included. We analyzed each technique by considering the following parameters: mean diameter of the bile duct, mean diameter of the common bile duct for the prevention of post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis. Statistical analysis of the results was carried out using SPSS software for Windows version 21. The normal distribution of continuous variables was assessed using the Kolmogorov-Smirnov test. Differences between groups were assessed using the Student’s t test for independent samples or the Mann-Whitney test for non-parametric variables. The chi-squared test was used to compare the categorical variables. A p value of 0.05 was considered statistically significant. All statistical analyses were carried out by biostatisticians.

Results: A total of 1365 ERCP procedures were performed in the study period. Overall CBD cannulation rate was 91.3%. 105/1365 (7.7%) were guided TPS procedures were needed in out. Mean age of the TPS group was 67 (range: 18–87) years and 56/105 (52.4%) were male and 49/105 (46.6%) were female. 2 RCTs and 4 non randomized trials from January 2000 to December 2016. OR using the Mantel-Haenszel method was used for dichotomous variables. Quantitative synthesis was performed using Review Manager version 5.0. Primary outcome was success rate. Secondary outcomes were rate of overall complications, and pancreatitis. Clinical heterogeneity was assessed by I2 value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Success rate was higher in NKS group compared to TPS (OR 2.98 [95%CI 1.43–5.85], p = 0.004). Complications and risk of pancreatitis were similar in both group (OR 0.37 [95%CI 0.17–0.82], p = 0.013; OR 0.99 [95%CI 0.68–1.57], p = 0.971)

Conclusion: NKS is associated with higher success rate with equal risk of complication and pancreatitis risk compared to TPS. Further and well design RCTs are needed before a firm conclusion could be made.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

CBD stones any diameter

European Association for the Study of the Liver (EASL). EASL Clinical Practice

15 mm was balloon dilator combined with retrieval balloon. Intermediate mean stone diameter of 13.6 mm and a mean CBD diameter of 14.3 mm diameter of 12.1 mm, compared to 3.8% of cases referred to surgery with a mean diameter of 12.9 mm. We also analyzed the parameters of patients who underwent endoscopic extraction by using a retrieval balloon combined with balloon dilator (Group 5). The success rate in this group was 90% for a mean stone diameter of 14.8 mm with a mean CBD diameter of 12.4 mm. In Group 6 we included cases which required combined techniques (= = 3). We observed a mean stone diameter of 9.4 mm with a mean CBD diameter of 13.8 mm in patients solved endoscopically, compared to those referred to surgery who had a mean stone diameter of 14.2 mm with a mean CBD diameter of 14.3 mm (P = 0.001). In this group the success rate was 67.2%. Overall, we had a success rate of 91.3% for endoscopic removal of choledocholithiasis with a mean stone diameter of 7.1 mm and a mean CBD diameter of 12.1 mm, compared to 3.8% of cases referred to surgery with a mean stone diameter of 13.6 mm and a mean CBD diameter of 14.3 mm (P < 0.001).

Conclusion: The most successful endoscopic method to remove large stones ≥15 mm was balloon dilator combined with retrieval balloon. Intermediate stones ≤7.5 mm can be successfully removed by using retrieval balloon or lithotriptor or a combination of basket with retrieval balloon ≥ balloon dilator. Most CBD stones <7 mm were successfully removed by using basket. In conclusion, any diameter >7 mm will most probably require more elaborate techniques.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: In this retrospective cohort study of patients undergoing ERCP that included low-risk patients, rectal diclofenac was not associated with a significant decrease in the absolute rate of pancreatitis. In our study, diclofenac decreases the impact of PEP in those patients who are cannulated the pancreas.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1555 A PILOT STUDY OF PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY FOR COMPUTER-AIDED DIAGNOSIS OF BILE DUCT CANCER BY USING THE DEEP LEARNING TECHNOLOGY

K. Furukawa1, N. Yokoyama2, H. Hashidate3
1Dept. Of Gastroenterology, Niigata General Hospital Dept. of Gastroenterology, Niigata/Japan
2Niigata City General Hospital Dept. of Digestive Surgery, Niigata/Japan
3Pathology, Niigata City General Hospital, Niigata/Japan

Contact E-mail Address: furukawa@hosp.niigata.niigata.jp

Introduction: The confocal laser endomicroscope (CLE) is of two types, an endoscope-based CLE (eCLE), which is integrated in the tip of the endoscope, and a probe-based CLE (pCLE), which goes through the accessory channel of the endoscope. The biliary tract, which cannot be reached by using eCLE, is observable with pCLE by using cholangioscopy. pCLE has the advantage of obtaining a magnification image that is like taking a biopsy tissue specimen but noninvasively, without the interference of bleeding and mucus secretion. However, it is sometimes difficult because only few gastroenterologists can achieve the required level of diagnostic accuracy.

Aims & Methods: We developed a computer-aided diagnosis (CAD) system based on pCLE imaging using deep learning technology. The purpose of this study was to determine the usefulness of this CAD system for the diagnosis of bile duct cancer. We prepared the classifier of the extracted features of the bile duct cancer pCLE images by using the deep learning framework presented by Kyocera communication system Co. Ltd. Japan. The pCLE images by Cellvissio (Mauna Kea Technologies, France) were obtained through the SpyGlass DS (Boston Scientific Corporation, USA) which can be compared with other methods like pathological examination results from the surgical specimen and biopsy using SpyBiite (Boston Scientific Corporation, USA). Learning sets were constructed by using 49 images of normal area and 23 images of cancer lesion. The test sets of the pCLE images were constructed using 6 images of normal area and 14 images of cancer lesion separately from the learning set.

Results: The accuracy, sensitivity for cancer diagnosis, specificity, negative-predictive value, positive-predictive value of our CAD system by test set were 84.1%, 77.8%, 35.7%, 50.0%, respectively. These results were constructed using 6 images of normal area and 14 images of cancer lesion, respectively from the learning set.

Contact E-mail Address: zulli.chaudios@gmail.com

Introduction: Gallbladder drainage, performed by EUS-guided positioning of specially designed fully covered metal stents, may be considered a valid option in patients with cholecystitis unifor for surgery. We describe the first case series of patients with diagnosis of acute cholecystitis treated conservatively using a silicone-covered nitinol stent with bilateral anchor flanges (NAGI-stent).

Aims & Methods: Our aim was to evaluate the feasibility and clinical impact of EUS-guided drainage with NAGI-stent in patients with acute cholecystitis unifor for surgery. Instructions for the EUS-guided drainage of acute cholecystitis: patients diagnosed with diagnosis acute cholecystitis according to Tokyo guidelines criteria, not suitable for surgical approach, were treated conservatively and drained with EUS-guided short flared stents positioning. The procedure was performed in 2 tertiary endoscopic units in Italy (100% EUS-ERCP performed yearly) using the NAGI-stent. Each attempt to access the gallbladder was firstly performed from the transduodenal position and resulted successful in 13 (81%) patients, whilst a transgastric approach was preferred in the remaining 3 patients. Two different approaches were performed for the EUS-guided gallbladder puncture: a) a 0.035-inch wire was advanced through a 19G-needle into the gallbladder and dilation of the access was achieved with a 10 Fr cystoenterostome; b) a 0.035-mch wire was advanced through a 10 Fr cystoenterostome and a silicone-covered nitinol stent was placed. Additionally, the 2 patients who died 10 days later. At follow-up, two patients died due to myocardial infarction at 2 and 6 months, one for acute renal failure after 6 months, two for pancreatic cancer after 7 months and one for acute respiratory distress syndrome after 6 months. In the remaining patients no cholecystitis recurrence or biliary obstruction were observed at median follow-up of 112 days (range 49–180 days).

Conclusion: Our data showed that EUS-guided gallbladder drainage with NAGI-stent is feasible and successful in patients with acute cholecystitis unfit for surgery. Since this type of stent is cheaper compared to others, the use of such device may result more attractive as a further endoscopic option for these selected patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1556 COMPARISON OF EUS-GUIDED FINE NEEDLE BIOPSY TECHNIQUES FOR CORE TISSUE ACQUISITION AND DIAGNOSTIC PERFORMANCE IN PANCREATIC SOLID LESIONS

C. Cho1, S.J. Yeo1, A.N. Seo2, H.I. Bae3
1Internal Medicine, Kyungpook National University Medical Center, Daegu/Korea, Republic of
2Pathology, Kyungpook National University Medical Center, Daegu/Korea, Republic of
3Department of Gastroenterology, Inje University Hospital Busan Paik Hospital, Busan/Korea, Republic of

Contact E-mail Address: cmcho@knu.ac.kr

Introduction: Acquisition of core tissue in endoscopic ultrasound-guided tissue sampling (EUS-TS) is necessary for histologic diagnosis and immunohistochemical staining in the diagnosis of some solid mass lesions. Although recent studies revealed the superiority of core biopsy needle in the specimen adequacy, core recovery still remains that which EUS-TS techniques would result in better acquisition of core tissue and diagnostic accuracy.

Aims & Methods: The aim of our study was to evaluate EUS-TS techniques with a ProCore needle using suction and slow pull suction for solid pancreatic lesions with the help of expert cytopathologist. Patients who referred to EUS-TS for pancreatic mass lesion were enrolled. We performed EUS-guided fine needle biopsy (EUS-FNB) using a ProCore needle (Cook Medical, Limerick, Ireland) with two needle passes and applied each pass of different techniques (suction or slow pull suction) which were randomly allocated. EUS-TS specimens were evaluated by one experienced cytopathologist who was blinded to applied techniques. The acquisition of core tissue and diagnostic performances were compared between two techniques.

Results: From Aug. 2014 to Dec. 2016, 94 patients with pancreatic mass were enrolled and 12 patients were excluded due to no final diagnosis (n = 5), cystic lesion (n = 5) and loss of follow up after EUS-TS (n = 2). Finally, 82 patients (48 males; median age, 63 years) with 164 needle passes were included without technical failure and procedure-related adverse events. The median size of the lesions was 26 mm (range, 11 to 80 mm). There were 68 malignant and 14 benign lesions. Overall core tissue acquisition and diagnostic accuracy was 84.8% (139/ 164) and 73.2% (120/164), respectively. There was no significant difference between suction and slow pull suction in the acquisition of core tissue (85.4% vs. 84.1%, p = 1.000) and diagnostic accuracy (72.0% vs. 74.4%, p = 0.860).

Conclusion: Although our study revealed no differences between EUS-TS techniques in the core tissue acquisition and diagnostic accuracy for pancreatic solid lesions, further prospective study including variable lesions and sizes of needle is needed to validate for optimal application and sequences of EUS-FNB techniques.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1561 EFFICIENCY COMPARISON BETWEEN 22 G VERSUS 25G NEEDLES DURING ENDOSONIC ULTRASOUND FINE NEEDLE ASPIRATION FOR SOLID PANCREATIC MASSES: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ON RCTS


Gastrointestinal Endoscopy Unit, Clinical Hospital of São Paulo University Medical School, Sao Paulo/Brazil

Contact E-mail Address: ralphbduarte@hotmail.com
Introduction: Endoscopic ultrasound guided-fine needle aspiration (EUS-FNA) is considered the gold standard method for assessment solid pancreatic masses. The needles for aspiration currently available are 19G, 22G and 25G and there is no concrete evidence to prove the benefit of one against another.

Aims & Methods: We aimed to compare the efficiency in the diagnosis of solid pancreatic lesions through the EUS-FNA with 25G and 22G needles. Studies were analyzed from five databases (Medline, Scopus, Cochrane, LILACS and CINAHL), without year or language restriction, using an extensive search strategy. Only randomized trials comparing 22G and 25G needles were included. Two independent reviewers went through the literature search and the results were analyzed by fixed and random effects. The diagnostic characteristics were calculated for a 95% confidence interval.

Results: 504 studies were found in the search, of which 21 were read and then finally 10 randomized studies were selected to be included in the analysis. Thus, a total of 462 patients were evaluated (233: 25G needle/229: 22G needle). The sensitivity of the 25G needle was 93% (CI: 89.96%; I2 0.00%), and for the 22G needle was 91% (CI, 85-94%; I2 19.9%). The specificity of the 25G needle was 86% (CI: 70-93%; I2 81.1%). The positive likelihood ratio of the 25G needle was 4.57 (3.60-10.33, I2 0.00%), and for the 22G needle was 4.26 (CI: 0.43-41.88, I2 94.7%). The post-test probability of the 25G needle in the study population was 91% and the 22G needle was 30%. The area under the sROC curve of the 25G needle was 0.9705 and for the 22G needle 0.9795, also showing no statistically significant correlation between them (p = 0.497).

Conclusion: Based on randomized studies, this systematic review and meta-analysis did not demonstrate a significant statistical difference between the 22G and 25G needles used during EUS-FNA in the diagnosis of solid pancreatic lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1562 OUTCOMES AND LEARNING CURVES OF EUS-GUIDED HYDROGEL MICROPARTICLE INJECTION INTO THE PANCREATIC HEAD-DUODENAL WALL INTERFACE IN A CADAVERIC MODEL
S. Kim1, K. Ding2, A. Rao1, L. Rosati1, A. Narang1, E.J. Shin1
1Gastroenterology And Hepatology, Johns Hopkins University School of Medicine, Baltimore/United States of America/MD
2Department Of Radiation Oncology And Molecular Radiation Sciences, Johns Hopkins University School of Medicine, Baltimore/United States of America/MD

Contact E-mail Address: eeshin3@jhmi.edu

Introduction: Despite advances in radiotherapy for pancreatic cancer, local gastrointestinal (GI) toxicity still remains one of the major limitations to effective dose delivery and further dose escalation due to the close proximity of the GI wall to the pancreas, particularly in the head region. One potential method to reduce local GI toxicity would be to increase the physical distance between the head of the pancreas and the duodenal wall. A novel, injectable hydrogel, synthesized as iodinated polyethylene glycol microparticles, has been FDA-approved for use as a soft tissue fiducial marker. The hydrogel remains stable for 3 months and is absorbed by 7 months. To date, there has been no reports on the technical feasibility of endoscopic ultrasound (EUS)-guided hydrogel injection into the pancreas.

Aims & Methods: We aimed to evaluate the technical feasibility of EUS-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall in a cadaveric model. A 10 ml syringe with a 22G needle was used to inject the hydrogel into the peri-pancreatic space with creation of a visible separation between the duodenal wall and the pancreatic parenchyma. The procedure was repeated along the length of the head and uncinate of the pancreas. CT was performed post procedure to confirm location and to measure the distance created between the duodenum and pancreas. Gross dissection of the pancreas and duodenum was performed to evaluate localization of the hydrogel.

Results: All three cadavers underwent successful EUS-guided injection of the hydrogel. Cadaver 1 received a total injection volume of 9.5 cc with creation of peri-pancreatic space along the head of the pancreas measuring 11.77 mm in maximal diameter. Cadaver 2 received a total injection volume of 27 cc with creation of peri-pancreatic space along the head and uncinate of the pancreas measuring 13.20 mm in maximal diameter. Cadaver 3 received a total injection volume of 10 cc with creation of peri-pancreatic space along the head of the pancreas measuring 12.89 mm in maximal diameter. The hydrogel was clearly visible during EUS with hyperechoic echogenicity and on post-procedure CT images without any artifacts. In all cases, the injection volume was less than expected.

Conclusion: EUS-guided delivery of hydrogel is feasible and results in an increase in the peri-pancreatic space in a cadaveric model. The hydrogel is clearly visualized on EUS and CT without significant artifacts. Further studies are warranted to evaluate feasibility, effectiveness and safety in a clinical model.

Disclosure of Interest: All authors have declared no conflicts of interest.
Malignant associated thromboembolic disease (TED) has a com-
mon presentation of clinical signs and symptoms related to
them. The clinical spectrum includes migratory superficial throm-
boembolism, arterial thrombosis, deep venous thrombosis, portal vein thrombosis
and phlebitis, with poor standardization of the procedure in terms of
ablation powers and ablation times, resulting in great heterogeneity of the
results.

Aims & Methods: To standardize the radiofrequency ablation (RFA) procedure
used in our institution for performing ev-stxs on porcine liver in order to find the
best ablation power and ablation time to produce the maximum size of
coagulative necrosis at histological examination. The system consists in a radio-
frequency generator delivering electric energy, a 19 Gauge needle (150 cm in length
with a 10 mm monopolar electrode), a peristaltic pump (to perfuse the
needle with chilled saline solution, maximizing the ablation volume without
chessing), and an isolating plate and a pedal to deliver RFA. Liver samples
were treated at different ablation powers (10, 20, 30 and 40 Watts (W)); each
ablation power was applied for a duration of 1, 3, 5, 7 and 15 minutes, according to
Fibonacci escalation dose scheme, used in phase I studies. We registered macro-
scopic: the size (millimeters) of the global treated area and the size of the
coagulative necrotic area around the needle insertion point (A zone) with a
maximum diameter of 4 millimeters and a surrounded larger area of “diaphani-
zation” (“B zone), showing mild signs of cellular alterations (cytoplasmic hypo-
chromia) without cellular necrosis. A zone sizes didn’t change among different
ablation times (mean: size: 3.25 mm) while “B zone” diameter increased with the
increase RF application at the fixed power of 10 W. At the microscopic
analysis the pathologist didn’t see any difference in size of coagulative necrosis
among the different ablation powers (R =0.24).

Conclusion: This new system is feasible and effective to produce very
small areas of coagulative necrosis (miliimeters) well-demarcated in respect to the
surrounding parenchyma and could be useful, in the future, to treat, with multi-
ple passes and higher precision, target lesions with a flexible needle. Moreover, the
system can produce larger zones of mild cellular alterations at lower ablation
powers (10 W), increasing with the increase of ablation times, but it needs future
in-vivo animal studies in order to assess the evolution of these zones (evolving into fibrosis? necrosis? recovering?).

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Robbins D. Pulmonary embolism diagnosed with EUS on a patient with
11(4): 331-33

Aims & Methods: To perform a retrospective review of all EUS cases for pan-
creatic cancer in two centers and assess all EUS findings.

Results: In a period of 6 months, a total of 55 EUS for pancreatic neoplasms
were performed in two centers. TED was present in 5 patients (9%): 3 were male
and the mean age was 70 (range, 46-81). In 1 patient the EUS indication was a large
abdominal mass whose origin was not clear, in the remaining 4 the indication was
the pancreatic neoplasm. In all of them was performed EUS with fine-needle
aspiration (FNA) which identified a peripheral pancreatic embolism (PE) and 1 inferior
evera caval thrombosis (IVCT) with right atrial extension: 2 (3.6%) had recently
been diagnosed by computed tomography (CT) but 3 (5.4%) were not previously
known. In all these, CT confirmed diagnosis.

Table 1: Demographic, clinical and ultrasonographic characteristics of the
patients.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Neoplasm</th>
<th>Cytology</th>
<th>TED</th>
<th>Age</th>
<th>Location</th>
<th>IVCT</th>
<th>Process</th>
<th>Confirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Adenocarcinoma</td>
<td>Not available</td>
<td>No</td>
<td>58</td>
<td>Head</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Female</td>
<td>Adenocarcinoma</td>
<td>Not available</td>
<td>No</td>
<td>62</td>
<td>Tail</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Male</td>
<td>Adenocarcinoma</td>
<td>Not available</td>
<td>No</td>
<td>65</td>
<td>Isthmus</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Male</td>
<td>Adenocarcinoma</td>
<td>Not available</td>
<td>No</td>
<td>67</td>
<td>Head</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Male</td>
<td>Adenocarcinoma</td>
<td>Not available</td>
<td>No</td>
<td>69</td>
<td>Tail</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Conclusion: To the best of our knowledge, this is the first case series of EUS-
based TED diagnosis in pancreatic cancer patients. This series underlines
importance of a systematic, station approach EUS technique, namely in the mediasti-
num regardless the clinical indication. TED is a common complication of pancreatic cancer and has major therapeutic and prognostic implications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Robbins D. Pulmonary embolism diagnosed with EUS on a patient with
11(4): 331-33

P1566 THE ROLE OF EARLY ENDOSCOPIC ULTRASOUND FOLLOWING TRANSDOMINAL ULTRASOUND IN PATIENTS WITH SUSPECTED BILIARY COLIC

M. Mangiavillano1, L. Frazzon2, R. Grassia3, M. Flavia Savarese4, M. Bianchetti5, A. Repici6, L. Fucito6
1Gastrointestinal Endoscopy Unit, Humanitas - Mattei Domini, Castellanza (VA) / Italy
2Department Of Medical And Surgical Sciences, S. Orsola-Malpighi Hospital, Bologna/Italy
3Gastroenterology, ASST Cremona, Cremona/Italy
4Gastroenterology Endoscopy, Borea Hospital, Santenovo (1M) / Italy
5Dept. Of Gastroenterology, Ist. Clinico Humanitatis Rozzano Dept. of
Gastroenterology, Milano/Italy

Contact E-mail Address: m.mangiavillano@hotmail.com

Introduction: Cholecodolithiasis is the most common cause of biliary pain, lead-
ing to cholangitis and gallstone pancreatitis. Patients affected by cholecodoli-
thisis presents an incidence of cholecodolithiasis ranging from 8% to 20%. When
the suspicion of cholecodolithiasis is confirmed, stones should be removed by
ERCP, but this operative measurement is associated with high rates of adverse
events as post-ERCP pancreatitis, bleeding or perforation. A correct diagnosis of
cholecodolithiasis, before ERCP, is mandatory to decrease the operative risk and
health care costs. Endoscopic ultrasound (EUS) has a high sensitivity and
specificity in the diagnosis of CBD stones and could substitute other imaging
modalities as CT-scan or MRCP, when indicated.

Aims & Methods: The aim of our study was to assess the role of early EUS (<48
hours), in patients undergone US in emergency room for suspected biliary colic.
We retrospectively evaluated all the patients arrived at first aid for suspected
biliary colic (i.e. right upper quadrant pain and/or epigastric region, associated
with an elevation in serum ALT, AST, GGT, ALP, or total bilirubin, but in
absence of amylase or lipase elevation). All patients, irrespective of the finding at
the US, performed an EUS within 48 hours since admission. Data are presented
as proportions with 95%-CI and mean±standard deviation (SD). Correlation
between categorical variables was evaluated by computing the “phi” coefficient.
We computed the number needed to misdiagnose, i.e. the number of patients
who need to be tested in order for one to be misdiagnosed by the test, as 1/(1-diag-
nostic accuracy). All the analyses were run with R Studio (version 3.5.1).

Results: Overall, from January 2016 to December 2016, 88 patients (56% female;
mean age 64 ± 17 years) were admitted to our hospital for suspected biliary colic.
All of these subjects underwent abdominal ultrasound (US) at admission, which
identified gallstones in 47 patients (71%) and further, US documented common bile
duct (CBD) stones in 58 (65%) patients, CBD sludge in 4 (5%) subjects, whereas
no cholecodolithiasis was found in 26 (30%) patients. At EUS examination
CBD stones were found in 70 (80%) patients. Comparing US to EUS, US
gave false negative results in 16 (18%) cases and false positive findings (i.e.
identifying CBD stones not documented by EUS) in 8 (9%) patients. The two
diagnostic procedures showed little correlation (phi = 0.289). The number of
patients needed to be tested by US in order to provide an incorrect diagnosis was

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P1567 BILIOPANCREATIC RADIOFREQUENCY ABLATION: COMPARISON OF THE THREE CURRENTLY AVAILABLE DEVICES IN A PIG MODEL
M. Barret1, S. Leblanc2, B. Bordacahar2, A. Rouquette2, S. Chaussade1, F. Pra1
1Gastroenterology, Cochin Hospital, Paris/France
2Pathology, Cochin Hospital, Paris/France

Contact E-mail Address: maximilian.barrett@aphp.fr

Introduction: Three devices are currently available to perform radiofrequency ablation (RFA) of biliopancreatic lesions. Data from animal models are scarce. Aims & Methods: Radiofrequency ablation was performed in four live pigs on the common bile duct and the liver parenchyma using an endobiliary probe (endHBP), on the liver and pancreatic parenchyma using an RFA catheter through an echoendoscope and biopsy needle (EUS RFA) and using a needle-shafted radial impulse sonication (USRA) through an echoendoscope. The preoperative ablation time and power were allowed to vary. The animals were sacrificed through an echoendoscope and biopsy needle (EUS RFA) and using a needle-puncture was performed via the transduodenal approach and the guide wire used to advance antegradely across the papilla. The echoendoscope was then advanced antegradely across the papilla and the diagnostic value was significantly better in the CH-EUS-FNA group than in the EUS-FNA group (94% in the CH-EUS-FNA passes and 86% and 91% in the EUS-FNA passes respectively). The visual core size was not significant for the true-positive diagnosis of malignancy. The sensitivity and specificity based on core histology was 89% and 94% in the CH-EUS-FNA passes and 86% and 91% in the EUS-FNA passes.

References

P1568 ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS FACILITATES BILIARY CANNULATION IN CASE OF INACCESSIBLE INTRA-DIVERTICULAR PAPILLA
D. Kypraios, A. Malachias, L. Theodoropoulos, S.L. Hatzinicolou, S. Stevrisidis, N. Saribegioglou, G. Sofianidis, K. Tsamakidis, D. Dimitrioulopoulos, D. Xinopoulos
Gastroenterology, Saint Savvas Oncological Hospital, Athens/Greece

Contact E-mail Address: dimmykpros@hotmail.com

Introduction: Endoscopic ultrasound (EUS)-guided rendezvous techniques facilitate common bile duct (CBD) access during subsequent endoscopic retrograde cholangiopancreatography (ERP) in a single session. Cases of initial ERP failure mainly comprise malignant biliary or ampullary infiltration and altered anatomy of the papilla, the former accounting for the majority of reports in the literature. Aims & Methods: We aimed to evaluate the efficacy and safety of EUS-guided rendezvous in a series of distal CBD obstruction with failed initial ERP, due to inaccessible intra-diverticular papilla. Consecutive patients with distal CBD obstruction, in whom selective biliary cannulation at ERP was unsuccessful due to large duodenal diverticula, underwent EUS-guided rendezvous. CBD puncture was performed via the transduodenal approach and the guide wire was advanced antegradely across the papilla. The echoendoscope was then exchanged for a duodenoscope and a sphincterotomy was inserted through the papilla alongside or over the wire, to allow further manipulations. Results: In a total of 2480 ERCPs performed over a 4-year period, 18 cases were selected to undergo EUS-guided rendezvous due to the presence of a large ampullary diverticulum. Primary indication for ERP was CBD stones in 15 patients, pancreatic head cancer in 2 patients and cholangiocarcinoma in 1 patient. Mean age of the patients was 77 years (range 62–91) and mean diameter of the CBD was 16 mm (range 8–21). Successful CBD puncture with antegrade passing of the wire into the duodenum and subsequent ERP, in the same session, was achieved in 2/3 (66.7%) cases of malignant obstruction and in 13/15 (86.6%) cases of lithiasis. Retrograde biliary cannulation during ERP was performed over the wire in 7/18 (38.9%) cases and alongside the wire in 11/18 (61.1%) cases. The mean time from the admission allows an immediate correct endoscopic treatment with significant improvement in the quality of life. Based on the results of our study, EUS performed within 48 hours from the admission allows an immediate correct endoscopic treatment with significant improvement of the quality of life.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
I. Avni-Biron

5 weeks of ADA treatment compared with baseline: median CECDAI 5 (1–16) vs detected in 8/22 patients (36.4%), CDAI experienced (Infliximab) -3 patients. After 14 weeks of ADA therapy MH was

Females: 12 (54.5%), median disease duration: 3 years (IQR 1–7), biologic

Out of 31 patients screened, 24 were eligible, and 22 completed the study

procedure compared to 48.4% (n = 22) of patients in the EC groups compared to only 30%

( n = 6) in the SC group ( p = 0.003). However, while melena was more frequent symptom in the SOC group (n = 26) EGD was the most commonly chosen primary diagnostic procedure (n = 23), but was only diagnostic 52% of the time. After complete diagnostic evaluation in the SOC group, patients presenting with bleeding had lesions located in the esophagus (3.3%), stomach/duodenum (46.2%), small bowel (11.5%), colon (11.5%), but 27% had no source identified. EC group had lesions localized to the esophagus (2.9%), stomach/duodenum (35.2%), small intestine (8.8%), colon (20.5%), and 32.3% did not have lesions identified. Patients with SB MRI evidence of small bowel inflammation (n = 29) EGD was never diagnostic as a primary procedure, coloscopy (COLO) had a 50% diagnostic rate, and VCE was diagnostic 100% of the time.

Conclusion: VCE used as the first test in patients with NIHGB detects active bleeding more often than the SBCE approach, since it examines much more of the GI tract than EGD and COL alone. Detection of the anatomic site of bleeding allows for better therapeutic decisions.

Disclose of Interest: S. Jawaid: This study was funded by an unrestricted grant from Olympus Tokyo.

All other authors have declared no conflicts of interest.

P5171 MUCOSAL HEALING RATES INDUCED BY ADALIMUMAB IN ISOLATED SMALL BOWEL CROHN’S DISEASE: PROSPECTIVE EVALUATION BY CAPSULE ENDOSCOPY

E. Gal1, B. Ben-Bassat1, Z. Levi1, G. M. Fraser1, Y. Snir1, H. Yanai1, L. Dotan2, J. Avni-Biron1

1Gastroenterology, Rabin Medical Center, Petach Tikva/Israel
2Division Of Gastroenterology, Rabin Medical Center, Petach Tikva/Israel

Contact E-mail Address: eyal.gal83@gmail.com

Introduction: mucus healing (MH) of isolated small bowel Crohn’s Disease (CD) induced by anti-tumor necrosis factor alpha agents are scarce.

Aims & Methods: 1) To evaluate MH rates by capsule endoscopy (CE) in patients with isolated SB lesions treated with adalimumab (ADA). 2) To correlate MH with clinical and biological indices of remission. This was a prospective observational, single center study. CD patients with isolated (per CE) active CD (CDAI > 220) SB disease, who were recommended ADA by their treating physician were consecutively recruited; first CE was performed prior to commencing ADA, and the second -14-week after starting ADA. All enrollees underwent a patency capsule study to confirm patency. Disease severity was assessed by the capsule endoscopy Crohn’s Disease activity index (CECDAI) score. MH was defined as CECDAI score < 3.

Results: Out of 31 patients screened, 24 were eligible, and 22 completed the study (as two patients developed an allergic reaction to ADA and were withdrawn). Females: 12 (54.5%), median disease duration: 3 years (IQ R 1–7), biologic excluded. MH had lesions located in the SBCE (n = 20). In our study, we compared the accuracy of localizing the source of bleed in early VCE versus SOC (standard of care) tests chosen based on clinical symptoms alone. This was a prospective single center randomized trial of 73 consecutive patients presenting to the University of Massachusetts Medical Center with NIHGB (melaena, hematochezia/anemia, or guiniea-piglike stools/anaemia). Exclusion criteria included presence of pacemaker, dementia, non-English speaking, hemodynamically significant bleeding. Patients were randomly assigned to SOC arm versus early capsule (EC) deployment. The SC group received a primary diagnostic procedure based on clinical symptoms that was dictated by the gastroenterologist on service, who was at liberty to choose the procedure sequence as they felt appropriate.

Results: Total ource, 73 were included. 2 patients from the initial included group were excluded (one due to technical capsule failure and one was transferred from an outside hospital). Baseline characteristics were similar and depicted in Table 1. The EC group (n = 34) had localization of presumed source of bleeding in 22/34 (64.7%) of patients at the time of the first diagnostic procedure compared to 48.4% (n = 16) in the SOC group ( p = 0.002). Active bleeding or stigmata of recent bleeding at the time of the first procedure was seen in 64.7% (n = 22) of patients in the EC groups compared to only 30% (n = 6) in the SOC group ( p = 0.003). However, while melena was more frequent symptom in the SOC group (n = 26) EGD was the most commonly chosen primary diagnostic procedure (n = 23), but was only diagnostic 52% of the time. After complete diagnostic evaluation in the SOC group, patients presenting with bleeding had lesions located in the esophagus (3.3%), stomach/duodenum (46.2%), small bowel (11.5%), colon (11.5%), but 27% had no source identified. EC group had lesions localized to the esophagus (2.9%), stomach/duodenum (35.2%), small intestine (8.8%), colon (20.5%), and 32.3% did not have lesions identified. Patients with SB MRI evidence of small bowel inflammation (n = 29) EGD was never diagnostic as a primary procedure, coloscopy (COLO) had a 50% diagnostic rate, and VCE was diagnostic 100% of the time.

Conclusion: VCE used as the first test in patients with NIHGB detects active bleeding more often than the SBCE approach, since it examines much more of the GI tract than EGD and COL alone. Detection of the anatomic site of bleeding allows for better therapeutic decisions.

Disclose of Interest: S. Jawaid: This study was funded by an unrestricted grant from Olympus Tokyo.

All other authors have declared no conflicts of interest.

References

P5173 HOW MANY CAPSULE ENDOSCOPY STUDIES CAN BE READ IN A GIVEN SESSION BEFORE ACCURACY IS AFFECTED? S. Bég1, R. Sidhu2, T.R. Card1, E. Wronska3, K. Ragunath1

1Gastroenterology, Nottingham Digestive Diseases Centre, UH/United Kingdom
2The Royal Hallamshire Hospital, University of Sheffield/United Kingdom
3Dr, Gastroenterology, Medical Center for Postgraduate Education and Maria Sklodowska-Curie Memo, Warsaw/Poland

Contact E-mail Address: sabina.beg@nhs.net

Introduction: The interpretation of small bowel capsule endoscopy (SBCE) requires a high level of concentration. An abnormality may be present on just a few of the many thousands of images presented for interpretation. It is
unknown whether fatigue affects the accuracy of SBCE reporting and how many SBCE cassettes can be reviewed in one session.

Aims & Methods: Thirty-two participants (16 experienced SBCE readers and 16 novices) were invited to participate in this study. Each participant was asked to read 9 pre-selected SBCE studies consecutively. These studies were presented in a randomized order. All readings took place using the single view mode, where readers were able to choose the frames per second viewed from a range of speeds. Fatigue was measured subjectively using a Likert scale and objectively using a computer-based psychomotor vigilance test. These measures were performed at prior to commencing the study and after every second capsule read. Accuracy in lesion detection was determined by comparison with a gold standard reading derived from the non-consecutive readings of two expert capsule readers. Accuracy was plotted against the order in which SBCE studies were read. The aim of this study was to determine whether fatigue influences the accuracy of SBCE interpretation and how many cases can be read before accuracy declines.

Results: In keeping with existing literature, high intra-reader variability amongst the participants was observed, with experienced readers reaching kappa values of 0.51 with the gold standard and 0.08 amongst novices. A progressive SBCE studies were read the mean speed increased for both experts and novices, with a mean reduction of 10 minutes between the first and the last study read. This was associated with faster reading speeds selected in progressive studies read. Where accuracy was analysed with respect to the reading speed chosen, a negative correlation between increasing speed and accuracy was demonstrated, with 31% of lesions detected when read at 6–10 frames per second, compared to 15% when using the 22–28 speed. This was not a significant change in accuracy with progressive capsule read when the group was analysed as a whole. The accuracy of experienced readers declined after just one study read, from 38% to 27% and plateaued thereafter. Novice readers demonstrated no significant change at the time points, but trended towards improvement, perhaps indicating skills acquisition during the study.

Conclusion: The accuracy of SBCE reporting declines after one study reporting in a given period of time by expert SBCE readers. The optimal time between readings needs to be explored. This does not affect novice readers perhaps demonstrating skill acquisition.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1574 FEASIBILITY OF SAME-DAY COLON CAPSULE ENDOSCOPY (CCE) IN PATIENTS WITH INCOMPLETE COLONOSCOPY

M. Hussey1, G. Holleran2, C. Tersarulo3, D. McNamara1
1Gastroenterology, Tallaght Hospital, Dublin/Ireland
2Trinity Academic Gastroenterology Group, Trinity College, Dublin/Ireland

Contact E-mail Address: husseysma@tcd.ie

Introduction: Rates of incomplete colonoscopies (IC) range from 2–19%, requiring repeat procedures or radiological imaging which can often lead to diagnostic delays as well as increased inconvenience for the patient. Same-day CCE may offer a more convenient and cost-effective mode of colonic exanimation post IC.

Aims & Methods: We aimed to determine the feasibility of same-day CCE post incomplete colonoscopy (IC) in a prospective pilot study for patients with IC without a contraindication to CCE with an IC for reasons other than poor bowel prep was offered the test following an appropriate recovery time of 1-hour post IC. Informed consent was obtained from all subjects. Upon ingestion of the capsule, grading of IV metoclopramide was given to overcome the antinomility effects of fentanyl given during routine colonoscopy. Standard booster protocol for CCE was administered. Patient demographics, procedure indica
tions, sedation studies can be read in one sitting. This does not affect novice readers perhaps indicating skills acquisition.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
cases to obtain an automatic histological classification of colonic polyps. Our automatic classification system is based on the textural elements from polyp surface and their correlation with Kudo’s pit pattern classification. Textural elements are identified as bright regions in polyp surface and there are characterized according to their shape into tubular and circular: a high presence of tubular patterns is associated to an adenomatous histology whereas the absence of prominent tubular structures is associated to non-adenomatous.

Taking this into account, we characterized segmented bright regions using a tubularity metric (Tub) designed to obtain low values for circular shapes and high values for elongated shapes of the regions. We tested our method in high definition (HD) white light polyp images which were obtained with a colonoscope Olympus C1F-H190 at Hospital Clinic in Barcelona. Neither conventional nor virtual chromoendoscopy were used. These images were selected to show as much variability in polyp appearance as possible. We used the mean of all Tub values for an image to classify it into two classes: Adenoma and Non-Adenoma. A ROC curve was constructed to select the optimal threshold value of Tub. Then, we compared the histology prediction provided by our system and the actual histology obtained after lesion removal.

Conclusion: A computer vision system based on bright regions in the image has a high accuracy for on-line prediction of polyp histology during colonoscopy. Though the use of shape characterization is promising, the inclusion of other polyp characteristics (i.e. shape, color, vessels...) as well as enlarging the validation database could improve the robustness of our methodology.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1577 COLORECTAL LATERALLY SPREADING TUMORS DETECTED AT CT COLONOGRAPHY
M. Iwabuchi, M. Sugimura, S. Toda, K. Ukai Gastroenterology, Sendai Medical Center, Sendai/Japan

Contact E-mail Address: s856@m.shinjyo.jp

Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified into the following two subtypes according to their morphology: granular type (LST-G), and non-granular type (LST-NG). Meanwhile, CT colonography (CTC) is a relatively new radiological technique for imaging the entire colorectum (LST-G), and non-granular type (LST-NG). Meanwhile, CT colonography (CTC) may be readily used for imaging of the colon in elderly or poor risk patients with colon polyps and cancer because of its non-invasiveness and relatively short examination time. One drawback of making a misdiagnosis may be inevitable. Therefore, analysis of misdiagnosis case is crucial on the new modality for the colon cancer screening examination.

Aims & Methods: We evaluated the misdiagnosed case of large neoplastic lesions using colonoscopy and CT colonography in JANCT by gastroenterologist and radiologist interpretation. Out of 1257 cases enrolled in JANCT, 1181 cases were actually studied, omitting 76 cases according to the exclusion criteria. More than 16 DAS CT were used for CTC, respectively. Images were retrospectively reconstructed by using a 0.5mm section index. The CTC examination was prepared by PEG-C solution before scanning. CO2 gas as an enterovaguerent agent was then administrated just before scanning. This was used for the contrast medium. CTC image was analyzed by AZE Virtual Place software. The CTC and CS were independently analyzed by endoscopist and radiologist in blind fashion. We investigated misdiagnosed lesions with CTC more than 10mm detected by CS. We considered the pseudo-negative lesions misdiagnosed with CTC interpretation as true PNL by radiologist and gastroenterologist and also considered the true pseudo-negative lesions misdiagnosed with CTC interpretation (true PNL) by radiologists and gastroenterologists. Because we conceived true PNL showed the limitation of CTC interpretation instead of PNL involved a human error.

Results: PNL was diagnosed by CS at 0-Ip (8 cases, 8 lesions), 0-Ia (17 cases, 19 lesions), respectively according to the criteria of the Paris classification. True PNL was also diagnosed at 0-ip(1 case, 1 lesion), 0-Ia (5 cases, 6 lesions) and 0-IIa (11 cases, 13 lesions), respectively. True PNL/PNL ratio was 0-Ip 12.5%, 0-Ia 50% and 0-IIa 68.5%, respectively. There was no PNL at 0-Ic Type I, II and III on this study. Most of all true PNL were so called flat lesion not only 0-Ia lesion.

Conclusion: CTC was proven to be a reasonably useful approach to obtain the image of colon diseases without any invasiveness to the patient. On CTC interpretation, lower protruded lesion was considered less detectivity than highly protruded lesion like 0-Ip lesion.

Disclosure of Interest: All authors have declared no conflicts of interest.


P1579 DIFFUSION-WEIGHTED MAGNETIC RESONANCE FOR ASSESSING FIBROSIS IN CROHN’S DISEASE
A. Caruso1, M. Scarp1a, G. Schifano1, C. Mescoli1, M. Rudatis1, R. D’Inca2, G.C. Sturoni3, C. Lacognata1, I. Angrima

1 Gastroenterology Unit, Ospedale di Gastelfranco Veneto, Castelfranco Veneto (TV)/Italy 2Radiology 1. Azienda Ospedaliera di Padova, Padova (PD)/Italy 3Department Of Medicine, Dimed, Pathology Unit, University of Padova, Padova (PD)/Italy 4Dept. Of General Surgery, University of Padova, Padova/Italy

Contact E-mail Address: ant.caruso@hotmail.it

Introduction: The formation of fibrotic tissue in intestinal wall of Crohn’s Disease (CD) patients is transmural and mucosal biopsies are unrepresentative of real intestinal damage. Magnetic Resonance Enterography (MRE) allows a transmural study of the bowel loops. Recently the percentage of gain of contrast enhancement between MRE and diffusion sequence of MRE has been proved useful to study fibrosis in CD patients. Diffusion Weighted Imaging (DWI) through the restriction of the apparent diffusion coefficient (ADC) allows an accurate evaluation of disease activity in CD patients avoiding contrast agents.

Aims & Methods: The aim of this study is to investigate if DWI sequence of MRE was able to identify intestinal fibrosis in CD patients candidate to surgery, using the histopathologic specimens and percentage of gain as gold-standard. Thirty ileocolonic CD patients candidates to surgery for stricture disease were consecutively enrolled from October 2010 to November 2015. All patients underwent MRE before the surgery. The histopathological examination was performed using an histological score for inflammation (AIS) and fibrosis in the stenotic segment and in the ileum before the stenosis.

All population had an active disease at MRE. ADC value had a significant correlation with fibrosis score (r = 0.67; p < 0.0001), AIS (r = 0.73; p < 0.001) and percentage of gain (r = 0.687; p < 0.0001). A strong correlation emerged between wall thickness and fibrosis score (r = 0.671; p < 0.0001). The
threshold of wall thickness for fibrosis was

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AUC = 0.89.
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Conclusion: The DWI sequence with ADC value can identify fibrosis in intestinal wall of C0 and is not always the use of contrast medium.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1580 MOLECULAR IMAGING OF c-MET IN THE CLINICAL MANAGEMENT OF GASTROINTESTINAL CANCERS

N. Mcdonald, C. Portal, I. Wilson

Contact E-mail Address: i.wilson@edinimage.com

Introduction: The primary indication for c-Met targeted optical imaging agent EMI-137 is the early detection of lesions during colorectal cancer screening, including flat lesions that are difficult to detect by normal white light endoscopy. We have evaluated the potential benefit of EMI-137 and analogues beyond colorectal cancer screening since c-Met is up-regulated in many other cancers.

Aims & Methods: We have synthesised analogues of EMI-137 where the fluor-escent reporter was replaced by a radionuclide chelating moiety for PET imaging. The use of this agent alongside EMI-137 could enable the PET localization of the lesions prior to surgery guided by fluorescent signals. Through a systematic analysis of scientific literature databases, and the Human Protein Atlas, we have identified more than 13 different types of solid cancer that are amenable to optical imaging for which there is evidence for c-Met as a target. We believe that imaging of c-Met with EMI-137 in these indications has the potential to positively impact critical problems in the existing patient care path and reduce morbidity, mortality, and healthcare costs. We have assessed: 1) the healthcare problem, the impact on patient care path, and the likelihood of adoption by clinicians 2) the hardware landscape; whether imaging hardware required is commercially available or is being developed, and feedback from clinicians in the US and EU 3) our confidence in c-Met as a valid imaging target to address the healthcare problem.

Results: We have identified a number of promising applications within Digestive Oncology; gastric cancer, locally-advanced rectal cancer, and bile duct cancer surgery are all life-threatening indications with urgent healthcare problems that could be improved by utilising imaging of c-Met with EMI-137. Compatible imaging systems are commercially available for these indications. There is also strong evidence for c-Met as a biomarker in stratification in Barrett’s oesophagus (BO), a potentially precancerous lesion with the risk of progression to oesopha-gal cancer. Progression rates are low and overall survival rates in BO patients are similar to the general population. However, due to the poor prognosis of oesophageal cancer, patients with BO lesions are managed by regular endoscopic surveillance and biopsy. This means that there is arguably a disproportionate healthcare burden relative to the level of risk.

Conclusion: Gastric cancer, locally advanced rectal cancer, and bile duct cancer surgery all have strong evidence for c-Met as a valid target, and the healthcare problems are clear and widely recognized, with EMI-137 having the potential to high-grade innovative procedures in serious, life-threatening conditions. An imaging agent that enabled more accurate risk stratification of BO patients would lead to a change in patient management, with the potential to remove unnecessary biopsy and to reduce the frequency of surveillance.


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Disclosure of Interest: All authors have declared no conflicts of interest.

P1581 HOMEMADE FIXATION OF FULLY-COVERED SELF-EXPANDING METAL STENT


Endoscopy, ICESP Sao Paulo Dept. of Endoscopy, Sao Paulo/Brazil

Contact E-mail Address: ktpennacchi@yahoo.com.br

Introduction: Esophageal self-expandable metal stents are currently used as an alternative for surgical treatment in esophageal neoplasia, benign strictures, fis-tulas and anastomotic leaks. Migration is a common complication after stent placement and has higher rates when fully covered stents are employed. Covered stents prevent tumor ingrowth and can be removed easily, they can be used in the closure of fistulas and leaks. External fixation of the stent with Shim’s technique seems to be efficient in preventing stent migration, but has a high cost and is not always available. Fixation by clipping or sutures has similar limitations. We developed a homemade technique for external fixation of the stent using dental floss to prevent dental floss migration. We present the results of this technique in a small cohort.

Aims & Methods: The present study enrolled sixteen patients with esophageal malignancies, anastomotic leaks, esophageal fistulas and extrinsic compressions. The stents used in these patients were five partially covered and ten fully covered. We developed a homemade technique using dental floss for external fixation of the stent which prevent stent migration. We pull stripes of dental floss into the stent mesh and using a method similar to exchange of a nasobiliary drainage catheter, the dental floss is drawn out through the nose, tied a knot into it and its loose end is fixed to the patient’s earlobe.

Results: Upper gastrointestinal endoscopy was performed after two weeks and the proximal end of the stent was evaluated. If it was embedding the esophageal mucosa and did not separate from the esophagus with air inflation, the external fixation was removed. Otherwise, the fixation was kept for another 2–4 weeks when a new endoscopic evaluation was performed. Patients were evaluated 15–30 days after stent placement. In cases of migration of the entire lenghth of the stent into the stomach, the patient received a new stent and the same fixation method was employed. In cases of stents partially migrated through the cardia, the same stent was repositioned and fixed with dental floss strips as previously described.

Conclusion: According to the results we believe this homemade technique using dental floss for external fixation of stents is a simple and cheap method that can be applied and used to prevent stent migration.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1582 CLINICAL OUTCOME WHEN USING SELF-EXPANDING METAL STENT IN OBSTRUCTIVE COLORECTAL CANCER IN 248 PATIENTS IN 7 YEARS EXPERIENCE IN A TERTIARY CENTER

M. Shafazand, T. Radomski, L. Alkelin, N. Papachryssos

Gastroenterology, Sahlgrenska University Hospital, Gothenburg/Sweden

Contact E-mail Address: morterza.shafazand@vrgenom.se

Introduction: The reported incidence of colorectal cancer in Sweden in 2014 was 60–65/100,000 inhabitants and caused 25–30 deaths/100,000. Of all colorectal cancer, approximately 15–20% debates with acute obstructive symptoms. Malignant obstruction in these conditions (open surgery) have been shown to lead to mortality risk up to 20% and morbidity risk of 45–50%, followed by increased need for intensive care and more infections and stoma complications. Self-expanding Metal Stent (SEMS) for relieving malignant colorectal obstruction is a treatment for non-curative cases or for bridging the patient for later surgery. Studies have shown "clinical success" of SEMS at 90%. An article from 2007 concludes that SEMS in acute colon obstruction has better results regarding sickness and side effects compared with acute open surgery3.

Aims & Methods: Our compilation covers the years 2010–16, when 248 SEMS interventions(53% men, 47% women, age 28–97) were performed at SU/Ostra Hospital. In 78% of cases, the obstruction was located below the left flexure. In 80%, SEMS was made for palliative purposes.

Results: Technically, SEMS succeeded in 98% of cases and had clinical success in 90% of cases(abscence in need of emergency surgery). Complications (colony perforation) occurred in 6% of the cases. Mortality within 30 days was 11% and 12% in 90 days. 22% of patients required more than one intervention with regard to 90-day mortality for the indication was palliative vs. bridging, 29 resp. 3%. Based on the clinical outcomes "success" vs "failure", the 90-day mortality rate was 19 resp. 55%.

Conclusion: Our interpretation is that SEMS is an effective method of acceptable safety regarding complications in acute malignant colon obstruction. The method is suitable for both intended intestinal relief for palliative purposes, as well as awaiting later curative measure (bridge to surgery).

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1583 ENDOSCOPIC TREATMENT OF ESOPHAGEAL FISTULAS

D. Bucur1, D. Oprianescu2, G. Constantinescu2, M. Ilie2, V. Sandru2, D. Tabara-Filho2

1Gastroenterology, Clinical Emergency Hospital Bucharest, Bucharest/Romania
2Dept. Of Gastroenterology, Clinical Emergency Hospital Bucharest, Bucharest/Romania

Contact E-mail Address: bucur.denisa@gmail.com

Introduction: Tracheoesophageal fistulas are severe complications which commonly occur secondary to malignant tumors of the esophagus. Other causes include mediastinal or respiratory tract tumors, surgery, radiotherapy and trauma. Without treatment they often lead to pulmonary and gastroenterological complications, such as pneumonia, acute respiratory distress syndrome and poor nutrition. The purpose of this study was to assess the efficacy of endoscopic treatment performed in our clinic for esophageal fistulas.

Aims & Methods: We performed a retrospective study on 43 patients admitted in our clinic between January 2015 and April 2017 for esophageal fistulas.

Results: The average age of the patients included in the study was 54 years old. The causes leading to the tracheoesophageal fistulas were the following: esophageal malignancy in 18 cases (41.8%), surgery in 8 cases (18.6%), respiratory tract malignancy in 6 cases (14%), gastric sleeve in 5 cases (14%), radiotherapy in 3 cases (7%) and trauma in 2 cases (4.6%). In every case, the treatment of choice was placement of fully-covered metallic stents. A number of 16 patients needed reintervention, with a mean of 2 reinterventions per patient. Regarding recurrent fistulas, endoclips were used in one case (2.3%), additional stenting in 11 cases.
A total of 452 endoscopic interventions (mean 3.4 per patient, median 2
131/135 (97%) patients with a mean of 30.1 months (0 to 103).

References

1. Dumonceau JM, Cremer M, Lalmand B, Devière J. Esophageal fistula seal-

References

Disclosure of Interest:

Aims & Methods: The aim of the analysis is to summarise the results and establish
evidence in support or against the complementary treatment.

References

Aims & Methods: The analysis was performed using the preferred reporting items
for systematic review and meta-analysis protocols (PRISMA-P). Two reviewers conducted a
comprehensive search on databases from inception to February 2016, to identify
trials, comparing the efficacy of dilatation combined with intralesional steroid injection
versus dilatation alone. A meta-analysis was conducted on the data using the
random-effects method by DerSimonian and Laird, because of the high level of
heterogeneity.

References

Results: There were 45 articles found in Embase, 55 in PubMed, and 6 in the
Cochrane database. Altogether 11 articles were suitable for analyses, after exclu-
sion of duplicate articles, case reports, results from non-human and pediatric
studies. These studies involved 373 patients in total. The periodic dilation index
for patients with recurrent stricture was comparable in 4 studies, where the pooled result showed, that
it decreased in the intralesional steroid plus dilation group (standardized mean
difference: -0.717, 95% CI: -1.191; -0.242, p-value: 0.003). The total number of
repeat dilations was comparable in 5 studies, where the standardized mean
difference was -0.465 as compared to the dilation alone group (95% CI: -0.777;
-0.153, p-value: 0.004). The dysphagia score was comparable in 5 studies, but
in this case no significant difference could observed between the two groups (stan-
dardized mean difference: 0.274, 95% CI: -1.822; 1.165, p-value: 0.510).

Conclusion: Our meta-analysis showed a significant improvement in the periodic
dilation index and total number of repeated dilations in the patients treated by
intralesional steroid injection as well. We recommend the use of intralesional
steroid injection for benign refractory oesophageal strictures.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1585 EFFICACY AND COMPLICATIONS IN PALLITVE
OESOPHAGEAL STENTING, EXPERINCES OF A TERTIARY
REFFERAL CENTER IN THE UK

P1586 EFFICACY AND COMPLICATIONS IN PALLITVE
OESOPHAGEAL STENTING, EXPERINCES OF A TERTIARY
REFFERAL CENTER IN THE UK

A. Clisy1, C. Gordon2, B. Eros2

1Endoscopy, Royal Bournemouth Hospital, Bournemouth/United Kingdom

2Gastroenterology, Royal Bournemouth Hospital, Bournemouth/United Kingdom

Contact E-mail Address: c.clisy83@gmail.com

Introduction: Palliative stenting is now established as a major treatment for dys-
phagia resulting from incurable malignant oesophageal tumours. Palliative stenting involves
placing stents, but recurrences may require frequent and repeated dilations in the long
term. Several trials have been conducted to determine the efficacy of intraluminal stenting in the
treatment of benign rectangular oesophageal strictures, since the first pediatric case series was published in 1969. However, a meta-analysis has not been carried out yet.

Aims: To determine the safety and efficacy of stenting and treatment failure.

Conclusion: Fully covered metallic stents offered effective treatment for esophag-
geal fistulas, regardless of the cause. Recurrent fistulas were successfully treated
by additional stents and in rare cases endoscopies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Department Of Gastroenterology, Hepatology And Endocrinology, Robert Bohs Hospital, Stuttgart/Germany

Disclosure Contact E-mail Address: e.aichinger@alumni.pmu.ac.at

Introduction: Endoscopic treatment of entric strictures in patients with Crohn’s
disease (CD) is well established; however, long-term outcome is unknown.

Aims & Methods: All patients with CD, who had undergone endoscopic therapy
for symptomatic strictures at Robert-Bosch-Hospital Stuttgart from 2008 – 2017,
were included in this retrospective cohort study. A follow-up was available for
131/135 (97%) patients with a mean of 30.1 months (0 to 103).

Results: A total of 452 endoscopic interventions (mean 3.4 per patient, median 2
per patient, range 1–69 treatments) were performed in 135 patients (female
n = 67/male n = 68, mean age 47.5 years, BMI: 22.8 ± 4.9 kg/m², duration of
illness: median 25.1 months). In 165 cases, the dominant stricture was located
in the ileocecum, in 105 in the colon, esophagus (90), duodenum (54), upper
intestine (26), lower intestine (11) or stomach (1). In 166 and 286 cases, there
was an anastomotic and non-anastomotic stricture present, respectively.

Treatment consisted of hydrostatic balloon dilatation (n = 447); bougienage
(4), and cSEMS (1). Dilatation was performed to a mean of 14 mm (SD: 2.4,
range 7 to 24 mm). In seven cases complications occurred after endoscopic

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. Dumonceau JM, Cremer M, Lalmand B, Devière J. Esophageal fistula seal-

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Aims: To determine the safety and efficacy of stenting and treatment failure.

Conclusion: Fully covered metallic stents offered effective treatment for esophag-
geal fistulas, regardless of the cause. Recurrent fistulas were successfully treated
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Disclosure of Interest: All authors have declared no conflicts of interest.

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Institute Of Bioanalysis, University of Pécs, Pécs/Hungary

Contact E-mail Address: lacika.szapary07@gmail.com

Introduction: Endoscopic dilation is an effective treatment in oesophageal stric-
tures, but recurrences may require frequent and repeated dilations in the long
term. Several trials have been conducted to determine the efficacy of intraluminal steroid injection in the treatment of benign rectangular oesophageal strictures, since the first pediatric case series was published in 1969. However, a meta-analysis has not been carried out yet.

Aims & Methods: The aim of the analysis is to summarise the results and establish
evidence in support or against the complementary treatment.

A meta-analysis was performed using the preferred reporting items for systematic
review and meta-analysis protocols (PRISMA-P). Two reviewers conducted a
comprehensive search on databases from inception to February 2016, to identify
trials, comparing the efficacy of dilatation combined with intralesional steroid injection.

A meta-analysis was conducted on the data using the random-effects method by DerSimonian and Laird, because of the high level of
heterogeneity.

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Disclosure of Interest:

All authors have declared no conflicts of interest.

References
Results: Between 01.01.2012 and 01.04.2016, 152 stents were inserted in 125 patients with palliative oesophageal cancer; 104 patients had stent inserted once, 16 patients had twice, 4 patients had 3 times and 1 patient had 4 stent insertions. 69.6% were male and the median age at death was 79 years (SD 10.94). The reported histology for the 125 patients revealed, 85 (68%) adenocarcinoma, 25 (20%) squamous cell carcinoma, 5 (4%) lung cancer causing external compression of the oesophagus, 2 (1.6%) mesothelioma, 1 (0.8%) externally compressing spindle cell sarcoma, 1 (0.8%) metastatic adenocarcinoma from the colon, 1 (0.8%) externally compressing signet ring adenocarcinoma. Of these stent insertions 52 (32.4%) were documented to have gone on or recurrent dysphagia after the procedure, of which the causes were: tumour over- or ingrowth in 9 (5.9%); stent migration in 15 (9.9%); distal obstruction due to gastric folds in 2 (1.3%); dysfunction of the anti-reflux valve in 3 (2.0%); and food bolus obstruction in 1 (0.6%); stenosis, managed by endoscopic stent intubation in 1 (0.7%) case. In 13 (8.6%) cases cause for dysphagia was not found or not investigated. 100 (63.8%) stent insertions resulted in complete resolution of the dysphagia. Repeat endoscopy was necessary in 34 (27.2%) patients, who had 98 repeat gastroscopies in total, to deal with minor complications of the stent insertion or to investigate dysphagia. In total there were 13 (8.7%) significant complications caused by the stent insertion of which 7 (4.6%) were bleeding, 2 (1.3%) were tracheo-oesophageal fistula formations, 1 (0.7%) was delayed perforation, 1 (0.7%) was a too short stent, 1 (0.7%) was a disintegrating stent and 1 (0.7%) was a compression of the bronchial. Median survival of the 125 patients after stent insertion was 96 days (SD 128) and 30-day mortality was 11.2% (14 patients). It is important to note that with retrospective data analysis, some data is not available, due to variations in recording at the time and a reliance on the patient to report symptoms to a clinician. Currently 2 patients are still alive.

Conclusion: Palliative stenting at this centre continues to be an effective treatment for patients with dysphagia from oesophageal cancer. On the whole, outcomes from stenting at this unit compare favourably with published data in terms of dysphagia, other complications, and mortality. Steps to improve post-procedure monitoring in the form of a “stenent registry” with prospective collection of data by telephone or face-to-face follow-up could be useful in future service development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1587 LONG-TERM RESULTS: WHEN RE-STEROSIS COMES AFTER ESOPHAGEAL STENTING?
D. Gusev, S. Kashin, N. Akhgapkin
Endoscopy, Yaroslavl Regional Cancer Hospital, Yaroslavl/Russian Federation

Contact E-mail Address: denis_gusev83@mail.ru

Introduction: Self-expanding metallic stents (SEMS) is a well-established form of palliative treatment for dysphagia in esophageal cancer. Progression of the tumor after stenting with re-sterosis is a serious problem in patients with better prognosis and longer survival.

Aims & Methods: The aim of this study was to assess the timing and probability of esophageal re-sterosis after stenting by tumor growth. We performed a retrospective analysis of patients with advanced esophageal cancer who was under- went self-expanding stent treatment, 5 years in Regional Cancer Hospital. We installed partially covered SEMS of one design from one manufacturer. The length of stents was 80, 100, 120, 140 mm, diameter - 20 mm. Patients with follow-up of more than 60 days were included in this study.

Results: Of the 165 patients from the database, 97 patients were selected, whose follow-up period was more than 2 months. There was a predominantly of male patients (78.5%), mean age of 72 years. To each patient was inserted a same partial covered stent of 4 cm length. In 87 cases stent was placed 2 cm distal and 2 cm proximal of the stenosis. Of 97 patients, 18 (18.5%) patients had tumor overgrowth with recurrence of dysphagia. Tumor overgrowth was verified as malignancy. Tumor localization before stenting: the upper and middle part of the esophagus - 6 patients, the lower part and the cardia - 12 patients. In 12 cases tumor growth spread out in the proximal direction, in 6 cases-in the distal. Interestingly, the distal tumor overgrowth after stenting was predominant (66.6%) in cases of localization in middle and upper part of the esophagus, while in cases of localization in the lower part of the esophagus or cardia. Period of re-sterosis was from 2 to 12 months, an average of 5.7 months. The period of re-sterosis in the upper and middle part of the esophagus is 4 months, while in cases of tumor localization in the lower part of the esophagus or cardia is 6 months. In almost cases palliation was successfully achieved with re-intervention. Five patients required several sessions of argon-plasma coagulation an average one time in 3-4 weeks.

Conclusion: The use of SEMS in patients with advanced esophageal cancer, with an expected long-term survival, is associated with an increased risk of re-sterosis by tumor overgrowth. Period of re-sterosis was an average of 5.7 months. The direction of spread tumor after stenting and the time of dysphagia recurrence correlated with localization of the tumor. This complication is not fatal and managed by endoscopic methods.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1588 SELF-EXPANDABLE METAL STENTS ARE A VALID OPTION IN PATIENTS WITH LONG-TERM SURVIVAL FROM ADVANCED ESOPHAGEAL CANCER
E. Rodrigues-Pinto1, P. Pereira1, T.H. Baron2, G. Macedo1
1Gastroenterology, Centro Hospitalar São João, Porto/Portugal
2Gastroenterology, Hospital São João, Oporto/Portugal

Contact E-mail Address: edu.gil.pinto@gmail.com

Introduction: Self-expandable metal stents (SEMS) are often used for palliative treatment of dysphagia in patients with advanced esophageal cancer, with anticipated limited survival. However, due to previous reports of high adverse event (AE) rates when used long-term, concerns have been raised with the use of SEMS in patients with survival longer than 3 months.

Aims & Methods: We aimed to the role of esophageal SEMS in patients with advanced esophageal cancer and expected survival longer than 6 months. Clinical success was defined as relief of dysphagia in patients with the stent in the correct position. Clinical success was defined as relief of dysphagia 1 week after placement.

Results: This was a retrospective study of patients with clinical dysphagia and advanced esophageal cancer who underwent SEMS placement with a stent dwell time of greater than 6 months. In all patients the indication for stent placement was dysphagia due to esophageal malignancy.

Results: Forty-four patients were followed for 298 days (183-861 days). At the end of follow-up the mortality was 93%. The majority of lesions were located at the proximal/middle oesophagus (55%), and were traversable using an ultrathin gastroscope in 79% of patients; in no patient could a standard upper endoscope be passed. Ten (23%) of the 43 patients (8 overgrowth/ingrowths, 4 migrations, 5 re-stenoses) showed clinical improvement occurred in all patients, however 59% of patients experienced an AE (15 migrations, 8 overgrowth/ingrowths and 2 stent-induced fistulæ). The median stent patency was 236 days (19-513). Two AEs occurred within 30 days of stenting, 7 occurred between 30-90 days, 7 occurred between 90-180 days, and 9 occurred after 180 days. Endoscopic management was attempted in every SEMS-related AE (20 patients required a second SEMS, 2 had successful SEMS repositioning and 1 was treated with argon plasma; 2 SEMS were removed without the need for further therapy), with a clinical success of 100%, however, in 7 patients the previously treated AE recurred (5 overgrowths/ingrowths and 2 migrations). Multivariate analysis showed that strictures traversable with an ultrathin gastroscope are a risk factor for AEs.

Discussion: Of all authors have declared no conflicts of interest.

References
available in many centers and have revolutionized the management of iatrogenic bowel injuries.

**Aims & Methods:** Evaluate the role of intervention radiology procedures to manage different post-cholecystectomy complications focusing on the novel techniques to improve the final outcome. From June 2014 to June 2016, 30 patients presenting with iatrogenic complications were referred to our interventional radiology unit in our university hospital. We had 9 males and 21 females (age range: 18–66 years). Patients presented with biliary leaks (n = 12), benign biliary strictures with intrahepatic biliary dilations (n = 21), postoperative hernia (n = 1). Bilioleak related to hepatic artery pseudo-aneurysm (n = 1). Different types of interventional procedures were performed, including: Percutaneous trans-hepatic drainage (PTD) (n = 16), sequential dilatation of benign stricture with increasing calibers over 6 months followed by manometric studies before catheter withdrawal (n = 6), bile stenting with plastic stent (n = 2), Insertion of pigtail catheter (n = 15), preoperative progressive percutaneous-portalineum for their adhesiolysis effect to manage post-operative huge incisional hernias before their surgical repair (n = 1), and selective embolization of bleeding hepatic and/or extrahepatic pseudo-aneurysm (n = 1) using tissue adhesive (n = 2). 

**Results:** All percutaneous procedures were technically successful. No recorded early or late complications. After manometric studies, all managed cases with benign strictures did not show any clinical evidence of restenosis during 6 months follow-up. Overall, 14 out of 30 patients (46.7%) were only managed by different interventional radiology procedures. Second step surgical repair was needed for 13 patients (43.3%) and endoscopic managed for 3 patients (10%) by different interventional procedures. 

**Conclusion:** Minimal invasively interventions were valuable techniques in the management of different post-cholecystectomy complications. In fully equipped centers, expert multidisciplinary teams would achieve high cure rates for iatrogenic biliary injuries.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1590 WHAT IS THE ROLE OF ANGIOGRAPHY IN ACUTE COLONIC AND SMALL BOWEL BLEEDING?**

**R. Vale Rodrigues1, P. Amaro2, M. Ferreira3, M. Barros1, P. Donato1, L. Tomé3**

1Gastroenterology, Centro Hospitalar e Universitário de Coimbra, Coimbra/Portugal

**Contact E-mail Address:** rita.vale.rodrigues@gmail.com

**Introduction:** Angiography is a diagnostic and therapeutic modality that is widely available for upper gastrointestinal bleeding but is used less frequently when the source of bleeding is placed distally to the Treitz angle.

**Aims & Methods:** To assess the usefulness of angiography in the diagnosis of colonic and small bowel bleeding and to determine the efficacy and complications of therapeutic procedures. Retrospective study; we included all patients with colonic and small bowel bleeding that were submitted to arteriography with or without embolization, admitted to the gastroenterology department of a tertiary hospital between February 2006 and November 2016. Statistics: Chi-square/Fisher exact test, T-student.

**Results:** During 10 years period more evaluated, 63.6% male, mean age = 75 years (29–95). Angiography was done for: bleeding recurrence (36.2%), hemodynamic instability (33.3%), both (27.3%) or failure to endoscopic hemostasis (3%).

**Conclusion:** Minimal invasive interventions were valuable techniques in the management of different post-cholecystectomy complications. In fully equipped centers, expert multidisciplinary teams would achieve high cure rates for iatrogenic biliary injuries.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1592 PROPENSITY SCORE ANALYSIS OF 18-FDG PET/CT ENHANCED STAGING IN PATIENTS UNDERGOING SURGERY FOR OESOPHAGEAL CANCER**

**N. Patel1, K. Foky2, D. Chan3, C. Brown1, A. Powell1, T. Abdelrahman1, P. Fielding2, A. Roberts2, W. Lewis1**

1General Surgery, University Hospital Wales, Cardiff/United Kingdom

2Radiology, University Hospital Wales, Cardiff/United Kingdom

**Contact E-mail Address:** Neilraham@hotmail.com

**Introduction:** PET/CT has become an integral part of the staging pathway for operable oesophageal cancer (OC), primarily used to identify occult distant metastases unseen by conventional radiological modalities. The aim of this study was to analyze the effect of PET/CT introduction on overall survival and assess patterns of recurrence after oesophagectomy.

**Aims & Methods:** Consecutive 180 OC patients undergoing oesophagectomy for cancer [median age 63 (31–80) yr., 395 male, 425 ACA, 71 SCC, 325 neoadjuvant therapy] were studied. Two hundred and twenty-three patients underwent PET/CT enhanced staging protocols and the primary outcome measure was overall survival based on intention to treat.

**Results:** Overall 3-year survival pre-PET/CT was 42.5% compared with 57.8% post-PET/CT (Chi² 6.571, df 1, p = 0.014). On multivariable analysis, pT stage (HR 1.34 [95% CI 1.03–1.76], p = 0.029) and pN stage (HR 1.116 [95% CI 1.05–1.18], p = 0.004) were independent factors to predict mortality severity CD ≥ 3 (OR 0.85, 95% CI 0.75–0.97, p = 0.018). Cumulative survival was associated with operative MSS (Chi² 4.892, DF 1, p = 0.027) but not with PET variables.

**Conclusion:** PET/CT is a significant predictor of mortality after oesophagectomy with peak 0V2 the most important factor. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1591 PROGNOSTIC VALUE OF CARDIOPULMONARY EXERCISE TESTING FOR MORBIDITY RISK AND SURVIVAL AFTER OESOPHAGECTOMY FOR CANCER**

**N. Patel1, J. Wheat1, C. Brown1, A. Powell1, T. Abdelrahman1, R. Davies2, I. Appadurai2, W. Lewis1**

1General Surgery, University Hospital Wales, Cardiff/United Kingdom

2Anaesthesia, University Hospital Wales, Cardiff/United Kingdom

**Contact E-mail Address:** neilraham@hotmail.com

**Introduction:** Surgery for radical treatment of oesophageal cancer carries significant inherent risk. Objectively Identifying patients that are high risk of complications is of importance. The aim of this study was to assess the prognostic value of physical fitness variables determined objectively by cardiopulmonary exercise testing (CPET) in patients undergoing potentially curative surgery for oesophageal cancer (OC) within an integrated multidisciplinary recovery programme.

**Aims & Methods:** Consecutive 180 OC patients (106 ACA, 11 SCC, 3HGD) underwent preoperative CPET with prospective recording of morbidity and survival. Non-parametric receiver operating characteristic (ROC) curves and logistic regression were used to assess the relationship between CPET variables and post-operative morbidity severity score (MSS).

**Results:** Of 180 patients, 120 were included for analysis (median age 65 yr., 100 male, 75 neoadjuvant therapy); 60 did not proceed to surgery and were excluded. Postoperative mortality and mortality occurred in 83 (69%, CD ≥ 3 in 27, 22.5%) and 4 (3.3%) patients respectively. ROC curve analysis showed oxygen uptake (peak V02) gave an area under the ROC of 0.66 (95% CI 0.55 to 0.77, p = 0.009), heart rate (peak HR) 0.53, and peak oxygen uptake (peak V02) 0.51–0.74, (p = 0.048) and oxygen cut-off of 10.5 ml/kg/min (sensitivity 60%, specificity 44%). Multivariable analysis revealed peak V02 to be the only independent factor to predict mortality severity CD ≥ 3 (OR 0.85, 95% CI 0.75–0.97, p = 0.018). Cumulative survival was associated with operative MSS (Chi² 4.892, DF 1, p = 0.027) but not with PET variables.

**Conclusion:** PET/CT is a significant predictor of mortality after oesophagectomy with peak 0V2 the most important factor. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1593 PREDICTION OF LYMPH NODE METASTASIS FOR SUPERFICIAL ESOPHAGEAL CANCER WITH USING RANDOM FOREST ANALYSIS**

**M. Takeuchi1, H. Kawakubo1, K. Fukuda1, R. Nakamura1, K. Suda1, N. Wada1, Y. Kitagawa1**

1Department Of Surgery, Keio University School of Medicine, Tokyo/Japan

**Contact E-mail Address:** masaty781222@gmail.com

**Introduction:** Although surgical techniques and perioperative management for esophageal cancer has been developed, it cannot be still safe to be performed esophagectomy. Therefore, endoscopic submucosal dissection (ESD) for the superficial cancer have been increased. We also need to consider the risk of lymph node metastasis before treatment in each patient and the aim of this study is to predict lymph node metastasis for superficial esophageal cancer.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aims & Methods: Seventy patients who were diagnosed as clinical T1a-MM, T1b- SM1 or T1b-SM2 and underwent esophagectomy at the Keio University, Tokyo, Japan between July 2000 and June 2016 were enrolled in this study. Patients who underwent esophagectomy as additional resections after ESD were included. We used random forest analysis to predict lymph node metastasis.

Results: There were 62 men and 8 women in this study. The mean age of all patients was 62.8±8.2 years. The main location of the tumor was in the middle thoracic esophagus (Upper: Middle, Lower: 13: 39: 18, respectively). 14 patients had lymph node metastasis in pathological findings; 2 patients (25%) were diagnosed as clinical T1a-MM, 2 patients (6.2%) had lymph node metastasis (31.3%) were T1b-SM2. Random forest technique (2000 trees) resulted in an estimate of error rate of 25.7%. Lymph node metastasis was most associated with the factor of pathological T (relative importance 100%) followed by lymph nodes on the contralateral T (97.9%).

Conclusion: Random forest analysis confirmed the predictors for lymph node metastasis such as pathological T and lymphatic invasion.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: neilrama@hotmail.com

Disclosure of Interest: Malnutrition is associated with higher rates of operative morbidity and therefore represent potentially reversible prognostic risk factors. Bioelectrical Impedance Analysis (BIA) is a non-invasive, reproducible and simple means of accurately measuring body composition.

Aims & Methods: The aim of this study was to assess the prognostic value of body composition variables determined objectively by bioelectrical impedance analysis (BIA) in a group of patients undergoing potentially curative surgery for oesophageal (OC) and gastric cancer (GC) within an enhanced recovery programme (ERP).

Consecutive 168 OG patients [median age 65 (24–86) yr., 131 male, 105 OC, 64 GC, 157 ACA, 8 SCC, 3 Neuroendocrine] underwent preoperative measurements of systemic inflammatory response [SIR, including FIB, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50 kHz and 100 kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd, Essex, UK), and Cardiac Pulmonary Exercise (CPX) assessment was performed selectively (70 OC, 27 GC). Primary outcome measure was Clavien Dindo (CD) morbidity severity score (MSS) of ≥3.

Results: Oesophagectomy was performed in 106, gastrectomy in 64, and laparotomy only in 23 patients. Postoperative morbidity and mortality occurred in 75 (45%, CD ≥3 in 35, 21%) and 4 (2%) patients respectively. On univariable analysis, MSS ≥3 was associated with anaerobic threshold (p = 0.0011), CRP (p = 0.001), mGPS (p = 0.0011), intra-cellular water (ICW, p = 0.041), and extracellular water content (p = 0.0013). Multivariable binary logistic regression revealed ICW content [OR per UQ CD 3 vs. 5, 39%, p = 0.02, OR 1.22 (95% CI 1.06–1.41) p = 0.006] and CRP [OR per UQ CD 3, 7 vs. 37%, OR 1.03 (99-106) p = 0.076] to be independently associated with MSS.

Conclusion: Seven-variable in morbidity severity was observed after OG cancer surgery. SIR and SIR were the most significant prognostic indicators.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: rainer.miksch@med.uni-muenchen.de

Introduction: The tumor micro environment plays a vital role in the growth of malignancies. Through for example tumor-infiltrating lymphocytes (TILs) it influences overall and disease free survival of patients in various cancer entities. Therefore, the study investigating how to investigate TILs. However, there is great heterogeneity about how to quantify these cells in the tumor tissue. Therefore, we present a novel Quantification of the Tumor Stroma (QTS) Algorithm to reliably and accurately quantify cells of the tumor stroma and to perform a correlation with survival after resection of patients with hepatocellular carcinoma and pancreatic cancer.

Aims & Methods: Immunohistochemical staining of CD3 and CD8 antigens in frozen sections of metastatic colorectal cancer (mCRC) and ovarian cancer (mOvC) as well as in paraffin sections of hepatocellular carcinoma (HCC) and pancreatic cancer (PCa) was performed. For each entity 10 slides per antigen were examined (n=80). In these different entities reliability and accuracy of computed quantification was tested in order to develop a general algorithm (Figure). First, reliability of identification of hot spots was investigated using two blinded observers. Hot spots were defined as regions with the highest density of TILs. The absolute amounts of cells were compared with the intra-class-correlation coefficient (ICC). Second, accuracy was tested. To examine whether quantification of 1 vs 3 hot spots yields accurate results CD3⁺ CD8⁺ as well as the absolute cell numbers were compared with the ICC respectively. Third, computed counting methods (1) ZEN 2 software counting (ZC), (2) ImageJ software with subjective threshold (ISC) and (3) ImageJ with colour deconvolution (IAC) were compared to a manual gold standard (Gold standard) using a linear regression analysis. Finally, 60 resected tumor tissues of HCC and 30 of PCa were retrieved. 3 hot spots have been selected for every slide and groups of high/low infiltration of CD3⁺ and CD8⁺ have been created according to the median value. Then, statistical correlation with overall survival (OS) and disease free survival (DFS) was performed.

Comparison of manual counting to the computed methods showed mostly excellent accuracy of the obtained results using intra-class correlation with reliability analysis (ICC) and coefficient B with linear regression (B):
computed counting methods achieve mostly excellent accuracy. ISC is accurate for sections with high background staining. IAC can be used in sections with low background staining. With the QTS Algorithm quantification of cells in the tumor stroma is reliable and accurate. Furthermore, clinical correlations after the use of this algorithm show results according to the literature: High infiltration of CD8+ T cells correlates with favorable prognosis in HCC and PCa. The future use of immunoscopy may help to predict prognosis after resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1598 LIVER RESECTION IN OBESE PATIENTS WITH HEPATOCELLULAR CARCINOMA
Hepato-biliary-pancreatic Surgery, Hyogo College of Medicine, Hyogo/Japan
Contact E-mail Address: iwama33387@hotmail.com

Introduction: Obese patients have been recognized as a risk factor for hepatocellular carcinoma (HCC). On the other hand, there are few reports concerning liver resection (LR) in obese patients.

Aims & Methods: We performed curative LR in 471 patients with HCC between 2006 and 2015. In this study, we defined an obesity as no less than 25 of body mass index (BMI). We compared clinicopathological findings, operation details, and surgical outcomes of the obese and non-obese patients. Furthermore, we assessed the accuracy of the use of this algorithm show results according to the literature: High infiltration of CD8(+) T cells correlates with favorable prognosis in HCC and PCa. The future use of immunoscopy may help to predict prognosis after resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

Results:
Among 471 patients, 123 patients (26.1%) were defined as obese. Among them, 20 patients (4.2%) showed no less than 30 of BMI. Diabetes, hypertension, and hyperlipidemia were significantly more common, and the patients with hepatic tumors were more commonly present in the obese patients group than in the non-obese patients group (p < 0.05). The two groups showed no differences in the liver function tests except the indocyanine green retention rate at 15 minutes. There were no significant differences between the two patients group in the number of tumors, diameter of tumor, prevalence of cirrhosis, frequency of portal invasion, the operative procedure, operative duration, blood loss, incidence of postoperative complications, postoperative hospital stay, and in-hospital mortality (3.3% vs. 1.4%). No significant difference was found in relapse-free survival rate, or overall survival rate between the two groups, too. Thirteen patients underwent laparoscopic surgery, and 34 patients had open surgery. The two groups showed no difference in the background, including BMI. However, the operation time (265 min vs. 397.5 min) and the postoperative hospital stay (14 days vs. 18 days) were significantly shorter, and the blood loss (50 ml vs. 600 ml) was less in the laparoscopic surgery group than in the open surgery group (p < 0.05).

Conclusion: Liver resection in the obese patients with HCC was safe, and laparoscopic liver resection might be more useful for reducing the surgical stress and reducing the hospital stay.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Aims & Methods: The aim of this study is to identify its benefit of simulating, analyzing and evaluating operative surgical treatment options in gastrointestinal and hepatopancreato-biliary surgery.

We used our original immersive MR application using HoloLens, that is a pair of MR smartglasses built-in head-mounted display. By reconstructing the patient-specific 3D surface polygons of each organ out of the patient’s MDCT images, MR anatomy was displayed on the grasses three-dimensionally during actual surgical procedure. Intraoperative anatomical landmarks, which can enhance spatial awareness. The use of our systems reduced the length of the operation and discussion time.

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: sugimotomaki@mac.com

Introduction: We developed a CT-based patient-specific holographic surgical simulation navigation system of immersive mixed reality (MR).

P1600 MIXED REALITY SURGERY USING CT-BASED PATIENT-SPECIFIC IMMERSIVE 3D HLOGRAMS ENHANCED SPATIAL AWARENESS IN HEPATO-pancreato-duodenal AND GASTROINTESTINAL SURGERY
M. Sugimoto
Graduate School Of Health Welfare Science, International University of Health Welfare, Tokyo/Japan
Contact E-mail Address: sugimotomaki@mac.com

Introduction:
Acute cholecystectomy as treatment of acute cholecystitis is standard of care. However, many patients are still treated conservatively and undergo elective surgery. Often 6–12 weeks following the primary admittance is postulated as a good timing for an elective surgery but there are no studies on the optimal timing for delayed cholecystectomy.

Aims & Methods: The aim of our study was to determine when it is most advantageous to proceed with surgery after a no surgery period without complications. We evaluated age and gender of the patient, the presence of clinical signs and symptoms of acute cholecystitis, and the presence of complications, age and gender of the patient, and the presence of complications.

Results:
During the years 2006 to 2013, 31091 patients were treated for acute cholecystitis in Sweden. After exclusion of patients that did not perform surgery, were not registered in the national register and were treated with acute cholecystectomy, 8532 patients were identified that underwent planned surgery. In patients that were treated with acute cholecystectomy, 8532 patients were identified that underwent planned surgery. In patients that were treated with acute cholecystectomy, 8532 patients were identified that underwent planned surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.
Endoscopic procedure

Delay Diagnosis-DPTS 16,4 days
Delay surgery-diagnosis 10 days
Biological sepsis 14 (82,3%)
Associated collection 16 (94%)
ASA score 2,3 (1–4)

ETIOLOGY
AGE 55 (25–77)
Delay for ablation of DPTS 73 (36–157)
Clinical success 15 (88,8%)

References

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1604 ENDOCUTRO PERERAL DRAINAGE (EPOD) OF PERITONEAL COLLECTIONS AND ABDOMINAL ABDOMINAL AORTIC ANEURYSM OPEN REPAIRING. RESULTS OF THREE YEARS FOLLOW-UP

O. Popova1, O. Sergeev2
1Department Of Emergency Surgery, Dnipropetrovsk Regional Hospital, Dnipro/ Ukraine
2Vascular Surgery, Dnipropetrovsk regional hospital, Dnipro/Ukraine

Contact E-mail Address: oksana.nikolaevna.popova@gmail.com

Introduction: Abdominal compartment syndrome (ACS) is serious complication of big number of surgical interventions. According the data of the World Society of the Abdominal Compartment Syndrome (WSACS), rate of mortality without treatment is more than 90%, after treatment from 25% to 75% [1]. Patients with ruptured abdominal aortic aneurysms (rAAA) are the group of high risk regarding ACS complication. Rate of incidence ACS at these patients is between 8% to 25%[2]. According to data of various authors, from one third to one half of them have died [3]. One of the main cause of this is the absence of good monitoring of intraabdominal pressure in this group of patients[4]. Currently, we have one effective way of treatment of ACS pathogenesis - decompressive laparotomy[5]. But prophylaxis becomes more important point, if we take to attention mortality after start the develop of abdominal compartment.

Aims & Methods: We aimed to investigate the impact of implantation polypropylene mesh in abdominal wall on rate of development ACS and it severity for patients after open repairing of ruptured abdominal aortic aneurysm. Patients with rAAA (total amount n=87 patients) were operated in standard volume. Before finish of surgery in study group (n=49, 34 males, 15 females, average age 63 years), we implanted polypropylene mesh ('in- lay' type) and was sutured skin and subcutaneous tissue only. In control group (n=38, 26 males, 12 females, average age 61 years +/-15 years) surgery was finished by standard way. In all patients had infrarenal type of rAAA. Middle lethalorifice or thoracopneumothorax fragmental access was used. After surgery intraabdominal pressure was controlled by intravесeal method during first seven days after operation. We fixated rate of complication and mortality in both groups. We followed-up patients after surgery and controlled far outcomes too. First mesh implantation was performed at 24 February 2014, last at 03 March 2017.

Results: In study group we fixated 5 cases of ACS (10,2%), including 3 cases of light ACS (intraabdominal pressure (IAP) =12–15 mm.Hg), 1 case of moderate ACS (IAP=16-20 mm.Hg), and 1 case of severe ACS (IAP >20 mm.Hg). Decompressive laparotomy was performed in one case with satisfac- tory result. In general, mortality in study group was 18.4% (9 cases). In control group we fixated 9 cases of ACS (23,7%), including 3 cases of light ACS (IAP=12–15 mm.Hg), 2 cases of moderate ACS (IAP=16-20 mm.Hg), and 3 cases of severe ACS (IAP >20 mm.Hg) and 1 case with very severe ACS (IAP more than 25 Hgm). Decompressive laparotomy was performed in three cases, satisfactory result was achieved in 1 case, in two cases patients have died from polyorgan insufficiency. In general, mortality in control group was 28.9% (11 cases). We did not find any specific complication, related with implantation of polypropylene mesh during all three years of follow-up.

Conclusion: 1. Implantation of polypropylene mesh is a safe and effective procedure for prophylaxis of ACS for patient with rAAA. 2. Implantation of mesh allows to avoid ACS for patient with rAAA and related with it complication and outcomes. 3. It is possible to implantate polypropylene mesh for other deseases, not only for rAAA, but this point requires further investigations.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
surgery. Patients presented heart rate over 120 bpm. Images from CT showed left side of the abdomen without free abdominal fluid. An Upper Gastrointestinal X-ray was performed to localize the leak opening and enter to peritoneal cavity. Either 9.8 or 5.8 mm diameter gastroscope were used. In 10 patients with orifices smaller than 5.8 mm balloon dilatation of the leak opening allowed peritoneal access. The end-to-end anastomosis of AL (100 to 700ml). Sample was taken for bacterial cultures. The cavity was flushed and suctioned out with sterile saline solution (200 ml to 1000 ml). In cases of inadequate location surgical drains catheters were repositioned or replaced using endoscopic forceps and snare. Final catheters were removed. Replacement before the stoma and AL placement were performed advancing with endoscopes through the leak all the way down to the skin. Once the tip of the endoscope was outside the peritoneum the latex drains were removed. Catheters were snared or grasped and pulled back into the peritoneum leaving the proximal end close to the fistula opening. In 5 patients without surgical drainage systems one laparoscopic port was localized inside peritoneum and re-opened under endoscopic vision to allow drainage catheters placement. In 8 patients peritoneal adhesions were endoscopically lib- erated to allow AL endoscopic forceps and snakes to facilitate peritoneal navigation.

Results: Heart rate returned to normal within 24 hours and leukocytosis improved after 72 hours. In 50% of patients heart rate returned to normal immediately. Average time for the whole procedure was 45 minutes. Abdominal catheters were removed between 7 and 18 days once full resolution of the drainage was achieved. Twenty patients were discharged within the first 24 hours. The rest were discharged between 3 and 8 days. Partially covered SEMS were placed for 6 to 8 weeks leading to complete closure of leaks. There were no adverse events related.

Conclusion: EPOD for peritoneal collections and abscesses secondary to BS leaks is feasible, safe and highly effective.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1606 BODY COMPOSITION AS A PREDICTOR OF MORB-IMORTALITY FOLLOWING BILIOPANCREATIC CANCER SURGERY

M.P.C. Santos1, S. Vello2, C. Cunha3, F. Costa1, L. Agostinho4, R. Cruz5, R. Maio6, M. Cravo3
1Gastroenterology Service, Hospital Beatriz Angelo, Loures/Portugal
2Hospital da Luz, Lisboa/Portugal
3Gastroenterology Service, Hospital Beatriz Angelo, Loures/Portugal
4Hospital da Luz, Lisboa/Portugal
5Gastroenterology Service, Hospital Beatriz Angelo, Loures/Portugal
6Gastroenterology Service, Hospital Beatriz Angelo, Loures/Portugal

Contact E-mail Address: mariapiacostasantos@gmail.com

Introduction: The impact of body composition on the outcomes following pancreateoduodenectomy is still unclear.

Aims & Methods: The aim of this study was to analyze the association between body composition the postoperative complications and 90-day mortality in patients undergoing biliopancreatic cancer surgery. Retrospective study of patients with pancreatic, ampullary or bile duct carcinoma that underwent surgery between March 2012 and October 2016. Body composition (skeletal muscle area, fat area, subcutaneous fat area and muscle radiation attenuation) was assessed in diagnostic or staging computed tomography (CT), in axial images at the level of the 3rd lumbar vertebra. Postoperative complications were recorded according to Clavien-Dindo classification and categorized as minor (grade I-II) and major (grade III+)

Results: Fifty-nine patients were analyzed and 11 were excluded due to unavailable CT scan at our institution. Forty-eight were included, 28 were men, with a mean age of 70.5±8.5 years. The incidence of major complications was 25% and 90-day mortality was 8.3%. On simple logistic regression of factors associated with major complications skeletal muscle area (OR 0.97, 95% CI 0.94–1.00, P=0.09) and index (OR 0.91, 95% CI 0.81–1.00, P=0.09) showed a trend for a protective effect. On multivariate logistic regression of factors associated with major complications skeletal muscle area and index (OR 0.89, 95% CI 0.79–0.99, P=0.05) and surgery (OR 1.01, 95% CI 0.99–1.03, P=0.07) was associated with higher incidence of major complications. The receiver-operator characteristic (ROC) curve showed an acceptable power of discrimination for major complications using a model with skeletal muscle index and surgery duration as independent variables (area under the curve of 0.736). On simple logistic regression surgery duration (OR 1.02, 95% CI 1.00–1.06, P=0.05), visceral fat area (OR 1.02, 95% CI 1.00–1.04, P=0.02) and total radiation (OR 1.05, 95% CI 1.01–1.09, P=0.04) were associated with higher 90-day mortality whereas muscle radiation attenuation had a protective effect (OR 0.88, 95% CI 0.76–0.99, P=0.05).

Conclusion: These results suggest that low values of skeletal muscle and muscle radiation attenuation, as well as high values of visceral fat and low radiation are associated with worse clinical outcomes following biliopancreatic cancer surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1607 GASTROSCHISIS: A 16-YEAR STUDY

A.M. Bradeanu1, L. Balanescu1, I. Nenciu2
1Neonatal Intensive Care Unit, Emergency Children’s Clinical Hospital “G. Alexandrescu” Bucharest, Bucharest/Romania
2Emergency Pediatric Surgery, Emergency Children’s Clinical Hospital “G. Alexandrescu” Bucharest, Bucharest/Romania
3Emergency Pediatric Surgery, Emergency Children’s Clinical Hospital “G. Alexandrescu” Bucharest, Bucharest/Romania

Contact E-mail Address: anamariabrad@yahoo.com

Introduction: Gastroschisis is a ventricular body wall defect trough which protrude mainly large and small intestines. The disease’s clinical course and prognosis depend on both surgical techniques, severity of the defect, accompanying anomalies and complications.

Aims & Methods: We performed a retrospective study based on the analysis of patients records admitted to our hospital Neonatal Intensive Care Unit between January 2000 and December 2016. The aims of this study were to evaluate defect’s incidence, management and outcome of patients with gastroscisis in our institution.

Results: During the period 2000–2016 the overall incidence of gastroscisis in our NICU was 1.3% (35 cases-all transferred from other NICUs). The average birth gestational age was 35.5 weeks and the average birth weight was 2270 g. The abdominal wall defect was identified in antenatal period only in 15.4% of cases. Also, 23 patients (16.4%) presented other associated anomalies: 12 cases with congenital heart disease (5.8%), 5 cases with Down syndrome (2.3%), 3 cases with cardiac defects. Surgical techniques performed for abdominal defect closure were: primary closure in 35 cases (25%), staged closure in 12 cases (8.5%), patch closure in 2 cases (1.4%). The average period of digestive pause was 12.9 days and the mean length of stay in NICU was 30.4 days. Patients were also mechanically ventilated for an average period of 4.6 days. The most frequent complication was late-onset sepsis (37.8%); also 26 neonates (18.5%) underwent mechanical ventilation. Also, 12 cases (8.5%) remained with short bowel. The average mortality in our group was 33% but it constantly decreased over the years (from 84% in 2000 to 11% in 2016). Sepsis, prematurity, low birth weight and associated defects were identified as major risk factors for the unfavorable outcome of the affected infants.

Conclusion: The management of neonates with gastroscisis depends on several factors including the status of herniated organs, the size of abdominal cavity, the presence of other associated congenital anomalies and last but not least on the resources and experience of the neonatal interdisciplinary team. Significant changes occurred in the management of gastroscisis in our Unit and as consequence, the outcome of patients with gastroscisis has dramatically improved during the studied period.

P1605 CLINICAL ASSESSMENT OF THE FAILING TO REVERSE A DIVERTING ILEOSTOMY

A. Sobolewska-Wlodarczyk1, M. Wlodarczyk2, J. Wlodarczyk1, P. Siwinski1, J. Kasprzyk1, A. Dziki3, L. Dziki3
1Department Of Biochemistry; 2Department Of Gastroenterology, Medical University of Lodz, Lodz/Poland
2Department Of General And Colorectal Surgery, Medical University of Lodz, Lodz/Poland

Contact E-mail Address: olasobolewska1@poczta.onet.pl

Introduction: A diverting loop ileostomy with procedure of intestinal resections and surgery for inflammatory conditions demonstrated that a BMI levels, patients’ age and average time inter-...
Disclosure of Interest: All authors have declared no conflicts of interest.

References

Abstract: P1608

**Urinary metabolic profiling has been shown to distinguish patients with inflammatory bowel disease (IBD) from healthy controls (HC), and also CD from UC, replicating previous studies. In Crohn’s disease, Caucasians and South Asians could be separated, but Caucasian and South Asian controls could not be distinguished in the UC cohort, possibly suggesting the metabolic milieu in Crohn’s disease is stronger and less influenced by the impact of ethnicity.**

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1609**

**EFFECTS OF ACUTE CHANGES IN FERMENTABLE FIBRE INTAKE ON REGIONAL COLONIC FERMENTATION AND TRANSIT IN PATIENTS WITH QUIESCENT ULCERATIVE COLITIS**

**C. K. Yao**1, R. E. Burgell1, K. M. Taylor2, M. G. Ward2, J. S. Barrett2, J. G. Murri2, P. R. Gibson3
1Department Of Gastroenterology, Monash University, Melbourne/Australia/VIC
2Department Of Gastroenterology, Alfred Hospital, Melbourne/Australia/VIC

**Contact E-mail Address:** chu.yao@monash.edu

**Introduction:** Reduced saccharolytic fermentation has been described in patients with quiescent ulcerative colitis (UC). Such defects may differ across colonic regions along with acute variations in dietary fibre intake. These aspects deserve further study.

**Aims & Methods:** We aimed to define regional colonic fermentation by direct intestinal pH-transit profiling in patients with quiescent UC following acute variations in fermentable fiber intake. A randomized, double-blind, crossover trial was performed. Patients with quiescent UC (Partial Mayo Score ≤1; faecal calprotectin <150μg/g) and healthy controls who were not taking any

<table>
<thead>
<tr>
<th>Disease Location</th>
<th>Controls</th>
<th>All IBD</th>
<th>Controls vs IBD</th>
<th>Controls vs CD</th>
<th>Controls vs UC</th>
<th>CD vs UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1: 1</td>
<td>10</td>
<td>42</td>
<td>0.634</td>
<td>0.012</td>
<td>0.008</td>
<td>0.798</td>
</tr>
<tr>
<td>L2: 2</td>
<td>16</td>
<td>66</td>
<td>0.815</td>
<td>0.003</td>
<td>0.004</td>
<td>0.505</td>
</tr>
<tr>
<td>L3: 3</td>
<td>19</td>
<td>66</td>
<td>0.769</td>
<td>0.007</td>
<td>0.007</td>
<td>0.418</td>
</tr>
</tbody>
</table>

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
antibiotics (including sulfasalazine), probiotics or fiber supplements were
repeated for 7–7 days, and the same fecal samples were collected and
analysed for urease scores (n = 40) of each group. The bacteria
were collected and cultured on blood agar plates. Bacteroides
were negatively correlated with the calculated Crohn’s disease
activity (CDAI).
Conclusion: Our findings showed the specific characteristics and dysbio-
sis of fecal microbiota within Chinese IBD patients. In addition, the abundance
of the Bacteroidetes was significant lower in active CD group than in inactive
CD group, and it was negatively correlated with the CDAI, indicating that the
Bacteroidetes could be related with the disease activity.
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1610 Fecal Microbial Dysbiosis in Chinese Patients With Inflammatory Bowel Disease
H. Ma, H. Zhang
Department Of Gastroenterology, First Affiliated Hospital of Nanjing Medical
University, No. 300 Baishazhou Rd, Nanjing 210029, China, Fajangging
Contact E-mail Address: mahaiqin2010@163.com

Introduction: Fecal microbial dysbiosis in the gut has been suggested to play an
important role in the pathogenesis of inflammatory bowel disease (IBD).
Aims & Methods: In this study, we aimed to analyze the fecal microbiota in
Chinese patients with IBD. Fecal samples from 15 patients with Crohn’s disease
(CD), 14 patients with ulcerative colitis (UC) and 13 healthy individuals were
subjected to 16S rDNA sequencing. The V4 hypervariable regions of 16S rDNA
were sequenced by the Illumina MiSeq2500 platform. Quality control and opera-
tional taxonomic units (OTUs) were calculated with QIIME software.
Results: Significant differences in community richness and microbial structure
were observed both in CD and UC compared with normal controls. At the
phylum level, analysis of the microbial compositions revealed that the
Proteobacteria percentages were, significant higher in IBD than in controls.
While at the genus level, we found that the abundance of Ruminococcus in UC and
Bacteroides, was negatively correlated with the calculated Crohn’s disease activ-

acting and the capsule passed from the ileocecal junction to the anus, the
time taken between the ileo-cecal junction and capsule exit. Cecal pH
was defined as the minimum pH following passage through the ileo-cecal
junction whereas maximum pH was arbitrarily used as distal colonic pH.

Results: 15 UC patients (aged 24–72; 9 males) and 9 controls (aged 22–69 years,
4 males) were studied. A decrease in overall and distal colonic pH was observed
in controls with high vs low fiber diet (Table 1). In UC patients, a high fermenta-
able fiber intake reduced cecal pH but paradoxically tended to increase distal
colonic pH. A significant association was observed for UC extent and changes in
overall (r = 0.81; p < 0.001, Spearman’s correlation) and cecal pH (r = 0.53;
p = 0.04) after a high fermentable fiber diet (Figure 1). No differences in CTT
were observed between diets in either cohorts but subgroup analysis in the UC
cohort showed higher association of cecal transit with changes in pH in a high
fermentable fiber diet. 64% patients had slow CTT whilst 36% had unchanged or
faster CTT. In contrast, majority (63%) of controls had no changes in CTT after a high fiber
diet.

Table 1: Colonic pH and transit responses to acute changes in fermentable fiber
intake

<table>
<thead>
<tr>
<th>Overall mean pH (95% CI)</th>
<th>Mean cecal pH (95% CI)</th>
<th>Mean distal colonic pH (95% CI)</th>
<th>Median [IQR]</th>
<th>CTT (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC n = 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low fiber</td>
<td>6.4 (6.2–6.8)</td>
<td>5.6 (5.3–5.7)</td>
<td>7.6 (7.5–8.1)</td>
<td>17 [8–23]</td>
</tr>
<tr>
<td>High fiber</td>
<td>6.3 (6.0–6.5)</td>
<td>5.2 (4.9–5.5)</td>
<td>8.0 (7.9–8.4)</td>
<td>21 [16–29]</td>
</tr>
<tr>
<td>p-value</td>
<td>0.20</td>
<td>0.001</td>
<td>0.09</td>
<td>0.13</td>
</tr>
<tr>
<td>Healthy n = 9</td>
<td>Low fiber (6.9 (6.5–7.2)</td>
<td>5.2 (5.0–5.8)</td>
<td>8.3 (8.0–8.5)</td>
<td>16 [15–17 ]</td>
</tr>
<tr>
<td>High fiber</td>
<td>6.3 (6.0–6.5)</td>
<td>5.2 (4.9–5.5)</td>
<td>7.7 (7.5–8.0)</td>
<td>18 [15–12]</td>
</tr>
</tbody>
</table>

Conclusion: A high fermentable fiber diet partially increased colonic fermentative
activity in patients with quiescent UC compared to controls. Moreover, contrary
to controls, UC patients exhibited an increase in distal pH and heterogeneous
colonic transit responses after a high fermentable fiber intake. Our findings
suggest that abnormalities in motility and regional defects in the function of
the colonic microbiota exist despite quiescent disease.

Disclosure of Interest: C.K. Yao: The Department of Gastroenterology, Monash
University benefits financially from the sales of a digital app and booklet on the
low FODMAP diet. R.E. Burgell: Rebecca has received consultancy fees from Allergan.
The Department of Gastroenterology, Monash University benefits financially from the
sales of a digital app and booklet on the low FODMAP diet.

J.S. Barrett: The Department of Gastroenterology, Monash University benefits
financially from the sales of a digital app and booklet on the low FODMAP diet. J.G. Muir:
The Department of Gastroenterology, Monash University benefits financially from the
sales of a digital app and booklet on the low FODMAP diet. P.R. Gibson: PG has served as consultant or advisory member for AbbVie, Ferring, Merck, Tanabe & Takeda; research support from AbbVie & Janssen; speaking honoraria for his institution from AbbVie, Janssen, Ferring, Takeda, Mylan & Pfizer.
All other authors have declared no conflicts of interest.

P1612 OGR1 (GPR86) EXPRESSION IS INCREASED IN INTESTINAL EPITHELIAL THROUGH THE REGULATION OF NF-κB BINDING ACTIVITY
S. Simmen, J. Cosin Roger, C. De Valliere, M. Schali, J. Zeitz, S. Vavricka,
G. Rogler, P. A. Ruiz-Castro
Gastroenterology And Hepatology, University Hospital Zurich, University of
Zurich, Zurich/Switzerland

Contact E-mail Address: PedroAntonio.Ruiz-Castro@usz.ch

Background: We sought to elucidate the effects of iron supplementation on hypoxia-mediated responses in the intestinal epithelium. For this purpose, serum starved Caco-2 monolayers were subjected to normoxia (21% O2) or hypoxia (0.2% O2) in the presence and absence of ferric ammonium iron citrate (FAC) and the iron chelator deferoxamine (DFO). Total RNA was isolated and changes in the expression of tumor necrosis factor (TNF), interleukin
(IL-1), TIMP-1, FPN and ferritin was assessed by real-time quantitative PCR. Western blot analysis was performed with antibodies against ferritin, p-NF-
κB, IκB, p-IκB, p65, p-IκB, p65, and p-fac. mRNA synthesis in Caco-2 cells under hypoxia was blocked using actinomycin D. Chromatin immunoprecipitation experiments were carried using antibodies against NF-κB and primers for pro-
moter binding regions of TNF and IL-1β. Healthy volunteers (n = 10) were sub-
jected to hypoxic conditions resembling an altitude of 4,000 m above sea level for
3 h using a hypobaric chamber. Serum samples were collected the day prior to
hypoxia, and one day, one week and one month after hypoxia.

Introduction: Environmental hypoxia has been established to influence the devel-
opment of inflammatory bowel disease (IBD). Adaptive responses to low oxygen-
tension are mediated through hypoxia inducible factor (HIFs), which are tightly
regulated by oxygen and iron levels through the action of hydroxylases. Dietary
iron is mainly absorbed by duodenal enterocytes through the divalent metal
transporter (DMT)-1. Once iron is inside the enterocytes, it is either sequestrated
into ferritin or transported out of the enterocyte into the circulation by ferro-
portin (FPN). Regulation of uptake, storage and export of iron is mediated by
signals reflecting oxygen and intracellular iron levels in enterocytes, and systemic
iron requirements. Central to systemic iron regulation is the liver hormone hepc-
din, which regulates and is regulated by systemic iron levels. Hepcidin expres-
sion is induced by cytokines and results in anemia of inflammation.

Results: Hypoxia induced the mRNA expression of TNF and IL-1ß concomi-
nantly, and we observed that the hypoxic response is reduced in the presence of
to low iron-starching conditions, thereby promoting iron uptake. The iron chelator deferox-
amine (DFO) induced IκBα stabilization and TNF mRNA expression under both
noroxic and hypoxic conditions. Conversely, iron supplementation induced ferritin protein accumulation under normoxic and hypoxic conditions,
and reduced TNF and IL-1ß mRNA expression. Interestingly, neither iron che-
lar nor iron supplementation reduced hypoxia-mediated p-NF-κB. Iron induced p-MTOR and blocked autophagy. Iron overload enhanced decay of TNF,
but not IL-1ß mRNA. Iron also prevented binding of NF-κB to the pro-
motor of TNF and IL-1ß. Healthy volunteers presented reduced serum levels of
iron, as well as transferrin saturation. Ferritin levels were unchanged indicating absence of inflammation and suggesting enhanced intracellular iron accumulation in enterocytes following hypoxia.

Conclusion: Our results suggest that hypoxia-mediated iron uptake is crucial to
counteract hypoxia-induced pro-inflammatory gene expression, and identify iron
intracellular uptake and storage as a hypoxia protective mechanism to reduce
mucosal inflammation.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: In both forms of inflammatory bowel disease (IBD), Crohn’s disease and ulcerative colitis (UC), inflammation of the gut wall is associated with extracellular tissue acidification. Low extracellular pH stimulates the family of proton-sensing G-protein coupled receptors (GPCRs); ovarian cancer G-protein coupled receptor 1 (OGR1), T-cell death-associated gene 8 (TDAG8) or G-protein coupled receptor 4 (GPR4), which activate second messenger signaling cascades. Recent studies reported a link between IBD and this family of pH-sensing receptors; in genome-wide association studies (GWAS), TDAG8 has been identified as an IBD-risk gene. The mechanism behind the interaction between treatment of IBD remained unclear. OGR1 and TDAG8 are alleged to act in opposition by regulation of the inflammatory response; enhancing or inhibiting inflammatory pathways respectively, however the interplay between OGR1 and TDAG8 is unclear.

Aims & Methods: In this study we aimed to investigate the role of OGR1 in IBD patients. Expression of OGR1 in surgical specimens from non-IBD (n = 5), CD (n = 10) and UC (n = 10) patients was determined by immunohistochemistry, RT-qPCR and Western blotting. Clinical disease activity was assessed by the Harvey-Bradshaw Index (HBI) and the Modified Truelove and Witts activity index (MTWAI) for CD and UC patients, respectively. Nonparametric Spearman’s rank correlation analysis was performed.

Results: OGR1 immunostaining of human surgical samples from non-IBD patients revealed OGR1 expression mainly in lamina propria cells, with weaker staining in epithelial cells. OGR1 staining in IBD patients was stronger compared to controls; however, in IBD patients OGR1 is highly expressed in both epithelial and lamina propria cells. Further, paired samples taken the same time, from non-inflamed and inflamed intestinal tissue from IBD patients showed stronger OGR1 staining in the inflamed mucosa compared to the non-inflamed mucosa. Accordingly, mRNA and protein expression of OGR1 was significantly increased when comparing IBD compared to non-IBD patients. In addition, a significant positive correlation was observed between OGR1 expression and the clinical score in both the non-inflamed (rs 0.731, p = 0.0069) and the inflamed mucosa (rs 0.7698, p = 0.0034).

Conclusion: The expression of OGR1 is significantly increased in patients with IBD. OGR1 expression correlates with IBD disease activity, suggesting an active role of OGR1 in IBD pathogenesis. OGR1 appears to be a therapeutic target for IBD. OGR1 expression correlates with IBD disease activity, suggesting an active role of OGR1 in IBD pathogenesis. OGR1 appears to be a therapeutic target for IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1614 MICROBIAL PROFILE OF NEWLY DIAGNOSED PATIENTS WITH ULCERATIVE COLITIS DIFFERS WITH ETHNICITY: RESULTS OF AN INCEPTION COHORT TIME SERIES ANALYSIS

R. Mira1, A. Perdones-Montero2, N. S. Ding1, D. Rees3, O. Faiz4, J. Marchesi5, N. Arebi5
1Gastroenterology, St. Marks Academic Institute, London/United Kingdom
2Centre For Computational Systems Medicine, Imperial College, London/United Kingdom
3Gastroenterology, St. Vincents Hospital, Melbourne/Australia
4Division Of Women’s Health, Kings College, London/United Kingdom
5Surgical Epidemiology and Outcomes Unit (see), St. Mark’s Academic Institute, London/United Kingdom
6Imperial College London, London/United Kingdom

Contact Email Address: rm399@imperial.ac.uk

Introduction: Ulcerative colitis (UC) phenotype in South Asian (SA) migrants differs to Caucasians with a predominant pan-colonic extent.1 A separate study showed microbial profiles with lower bacterial diversity in the SA group.2 The significance of these findings is unclear due to small sample size (n = 30) and single time point analysis.

Aims & Methods: We aimed to examine microbial profile of SA and Caucasian UC patients. Faecal samples were collected from 48 UC patients recruited in a prospective inception cohort study at diagnosis (time point 1; months 0–3) and 2 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Patients were stratified byethnic group (SA, Caucasian, Other), treatment (none, 5-ASA, Azathioprine and Steroids) and disease duration. Healthy controls (HC) were recruited locally among the staff at St. Marks Hospital. For 16S pyrosequencing the hypervariable region (V1) of the 16S rRNA gene was amplified by PCR. The amplicons were subjected to sequencing using Illumina MiSeq technology. The sequences were loaded onto the QIIME pipeline. Statistical analysis was performed using STAMP 2.1.2 software with Welch’s two-sided t-test for comparing two groups. Microbial richness was calculated based on Chao index. Weighted Unifrac metrics were applied to construct Principle Coordinating Analysis (PCoA) plots.

Results: Ninety-four faecal samples were collected. Sample collection for all time points included SA (n = 13), Caucasian (n = 9), healthy SA (n = 11) and healthy Caucasian (n = 12). There was no significant difference in relative abundance of bacteria between ethnic groups (5-ASA, Azathioprine, Steroids, None) and time points (1 vs 3). Comparing healthy SA and healthy Caucasians, there was only one significant difference in relative abundance of Clostridiales at the family level. (Increased in SA group). The Chao1 index showed a trend towards lower diversity in the SA group compared to Caucasians although there was no significant difference. There were significant increases in Bifidobacterium, Bikenellaceae, Lactobacillaceae and Streptococcaceae (Table 1) and significantly decreased relative abundance in Bacteroidellaceae, Anaerostipes and Ruminococcaceae.

TABLE 1: Summary of Bacterial Taxonomic Findings in South Asians (SA) and Caucasians with ulcerative colitis.3 Increase or decrease in SA relative to Caucasians

Phylum | Change | Family | Change | Genus | Change
--- | --- | --- | --- | --- | ---
Actinobacteria | Increased | Bifidobacteriaceae | Increased | Bifidobacterium | Increased
Bacteroidetes | Decreased | Bacteroidales | Decreased | Bacteroidellaceae | Decreased
Firmicutes | Increased | Lactobacillaceae | Increased | Lactobacillus | Increased
| | Streptococcaceae | Increased | Streptococcus | Increased
| | Clostridiales | Decreased | Clostridium | Decreased
| | Lachnospiraceae | Decreased | Anaerostipes | Decreased
| | | | | Unclassified
| | Ruminococcaceae | Decreased | Ruminococcus | Decreased
| | Verrucomicrobicae | Increased | | |
| | | | | |
| | | | | |

Conclusion: Increased Bifidobacteria and Lactobacilli in the SA group is consistent with the previous study. A possible explanation is the consumption of fermented foods in the SA group although there was no difference between healthy SA and Caucasian controls. There is a trend towards lower diversity in the SA group and reduced Bacteroides which are consistent with the UC dysbiosis described in the literature. Functional analysis of this unique microbial profile through metagenomic and metabonomic techniques may explain the different disease behaviour in the SA group.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1614 VITAMIN D SUPPLEMENTATION REDUCES Faecal Calprotectin and Alters Intestinal Microbiota Composition in Patients with Active Ulcerative Colitis

M. Garg1, P. Hendy1, S. Shaw2, N. S. Ding1, G. Hold2, A. Hart1
1Ibd Unit, St Mark’s Hospital, Harrow/United Kingdom
2School Of Medicine, University of Aberdeen, Aberdeen/United Kingdom

Contact E-mail Address: philiphendy14@gmail.com

Introduction: There is evidence for vitamin D as an immunomodulator in patients with IBD, but results from clinical trials to date are inconclusive. It is uncertain whether vitamin D supplementation may affect the intestinal microbiota.

Aims & Methods: This study aimed to assess the effect of vitamin D replacement in deficient patients with and without ulcerative colitis (UC) on inflammation and faecal microbiota. Vitamin D was replaced over 8 weeks to patients with active UC, inactive UC, and low controls with baseline 25(OH) vitamin D < 30 nmol/L, and markers of inflammation and stool collected for microbiota analyses by next generation sequencing.

Results: Eight patients with active UC, 9 with inactive UC and 8 non-IBD controls received 40,000 units of vitamin D weekly over 8 weeks. No demographic differences were noted across the groups. Mean baseline 25(OH) vitamin D levels were 34 (range 12–49) nmol/L. Vitamin D supplementation increased mean 25(OH) vitamin D to 111 (range 71–158) nmol/L (P < 0.001), and reduced para-thyroid hormone levels from mean 4.3 to 3.3 pmol/L (p = 0.017). No change in baseline medications for UC took place in patients with UC, except for one patient with active UC who ceased his 5-aminosalicylate. Faecal calprotectin levels reduced from median 275 to 91 μg/g (p = 0.023) in patients with active UC, but did not change in patients with inactive colitis or non-IBD controls. Similar improvements in albumin, platelet count and symptomatic disease activity indices were noted. No changes in overall bacterial diversity were noted. There was a trend towards an increase in abundance of Ruminococcus gnavus post vitamin D supplementation in active UC patients, but this did not reach statistical significance.

Conclusion: Vitamin D supplementation was associated with reduced intestinal inflammation in patients with active UC. A randomised controlled trial evaluating vitamin D in IBD is required along with further investigation of potential mechanisms by which vitamin D may alter specific microbial composition.

Disclosure of Interest: M. Garg: This work was supported by the European Crohn’s and Colitis Fellowship awarded to Dr Mayur Garg, and St Mark’s Association Grant awarded to Prakas Hart and Dr Mayur Garg. All other authors have declared no conflicts of interest.
**P1615 SUPPRESSION OF PHOSPHOLIPASE A2 AS A THERAPEUTIC STRATEGY FOR INFLAMMATORY MEDIATOR BLOCKADE IN A GENETIC MOUSE MODEL OF ULCERATIVE COLITIS**

W. Stremmel, S. Stauffer, N.C. Stuhmann, A. Gauss, N. Burger, D. Hornuss
Amt. Fä. Innere Medizin I, Universitätshôpital Heidelberg, Heidelberg/Germany

Contact E-mail Address: wolfgang_stremmel@med.uni-heidelberg.de

Introduction: Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

Aims & Methods: Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

Results: Luminal UDCA-LPE reduced the PLA2 activity in stool by 36% in the genetic UC mouse model.

Discussion: Disclosure of Interest: All authors have declared no conflicts of interest.

**P1616 THE IMPACT OF THE RS8005161 POLYMORPHISM ON G PROTEIN-COUPLED RECEPTOR GRP65 (TDAG8) PH-ASSOCIATED SIGNALING IN INTESTINAL INFLAMMATION**

I. Tcymbarewich,1 K. Baebler,1 J. Cosin Roger,1 N. Obiolo1, M. R. Spaulinger,1 J. J. Eloranta2, S. Lang2, A. G. Kullak-Ublick2, C. A. Wagner3, M. Schratl4, K. Seuwen1, A. P. Ruiz-Castro1, G. Rogler1, B. Messiwitzl2, C. De Valillere1

1Gastroenterology And Hepatology, University Hospital Zurich, Zurich, Switzerland
2Zurich, Zurich/Switzerland
3Clinical Pharmacology And Toxicology, University Hospital Zurich, Zurich, Switzerland
4Institute of Physiology, University of Zurich, Zurich/Switzerland
5Novartis Institutes for Biomedical Research, Basel/Switzerland

Contact E-mail Address: katharina.baebler@usz.ch

Introduction: Inflammatory bowel diseases (IBDs), Crohn’s disease (CD) and ulcerative colitis (UC) are usually sporadically associated with a genetic component in local pCN.

Genome-wide association studies (GWAS) identified over 240 non-overlapping single-nucleotide polymorphisms (SNP) associated with IBD. G-protein-coupled receptor 65 (GRP65) or T-cell death associated gene 8 (TDAG8) has recently been reported to be a genetic risk factor for IBD. The T-70 genotype of the lead GPR65 SNP (rs8005161) within the GRP65 gene confers increased IBD risk.

In response to extracellular acidification, GRP65 activates second messengers: cAMP, via the Gs signaling pathway, and G12/13/Rho signaling.

Results: Sequenced genotype frequency of rare homozygote rs8005161 in the SIBDCS was 1.17%, minor allele frequency (MAF) 10.3%. The variant rs8005161 was more frequent in UC patients (MAF 14.53% vs 10.05% in the non-IBD group), whereas no statistically significant association with IBD, UC or CD was detected from the SIBDCS as non-IBD controls (Table 1) or from functional studies. CD4+ T cells were isolated from blood samples and subjected to an extracellular acidic pH shift (pH 6.6 vs. pH 7.6) in functional assays and tested for cAMP and RhoA GTPase activation.

Conclusion: Minor allele of the GRP65 associated SNP rs8005161 was significantly enriched in UC patients. RhoA signaling was reduced in IBD patients versus healthy controls and remained lower in UC patients compared to controls. However, no differences in cAMP signaling in IBD TT/TC versus CC subjects were observed. Moreover, our results suggest impaired RhoA signaling in IBD patients upon a pH shift, indicating a mechanistic explanation for increased IBD risk with GRP65 polymorphisms.

Discussion of Interest: All authors have declared no conflicts of interest.

**P1617 B2-STRUCTURING AND B3-PENETRATING PHENOTYPE IN CROHN’S DISEASE: CHANGES IN DENDRITIC MACROPHAGE POPULATION AND WNT SIGNALING**

D. Ortiz Masía1, P. Salvador2, D. Macias-Ceja2, R. Alos3, J. Hinojosa Del Val4, F. Navarro-Vicente5, J. Mayné6, M. D. Barrachina6, S. Calatayud6

1Dept. Medicina, CIBERehd-Univ. de Valencia, Valencia/Spain
2Ibd Unit, GITP, Institut d’Investigació en Ciències de la Salut Germans Trias i Pujol, Badalona, Barcelona, Spain
3Dept. De Farmacologia, CIBERehd-Univ. de Valencia, Valencia/Spain

Contact E-mail Address: m.dolores.ortiz@uv.es

Introduction: Macrophages contribute to fibrosis through the release of different mediators and the pattern of secretion may vary according to their phenotype. Recent evidence has identified Wnt pathway as an emerging modulator of fibrosis.

Aims & Methods: The aim of the present study is to analyze the pattern of expression of macrophage markers and Wnt ligands in surgical resections from Crohn’s disease (CD) patients with different disease behavior. CD patients were categorized according to Montreal classification (age at diagnosis, location and behavior). mRNA was isolated from resections patients presenting an strictureing (B2) or a penetrating (B3) behavior or from patients with colorectal cancer (control). The expression of macrophage markers (CD206, CD86, iNOS, Arginase1), Wnt ligands (Wnt1, Wnt2b, Wnt3, Wnt4, Wnt5a, Wnt5b, Wnt6, Wnt7a, Wnt7b, Wnt8a, Wnt8b, Wnt9b, Wnt10a, Wnt10b and Wnt16) and DKK1 (inhibitor of Wnt signaling) was analyzed by RT-PCR.

Results: B3-patients seem to present a higher infiltration of macrophages since increased expression of markers classically used to detect pro-inflammatory (CD86) and regulatory/pro-resolving/pro-fibrotic phenotypes (CD206, ARG) was detected in this group. These patients also presented a generalized overexpression of Wnt ligands together with augmented DKK1 mRNA levels. B2-patients showed a more complex situation with ligands that present increased (Wnt5), reduced (Wnt2b) or unchanged expression in the absence of significant variations in the levels of macrophage markers (Table). Table. Relative (Gene/b-actin) mRNA expression (fold induction vs control group) of genes with detectable levels. Data are expressed as Mean±SEM in n ≥ 7 in all groups and analyzed by ANOVA + Kemman-Keuls test. (*p < 0.05 vs control; **p < 0.05 vs control).

Conclusion: Crohn’s disease patients presenting a strictureing (B2) or a penetrating (B3) behavior undergo different macrophage infiltration and Wnt signaling.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1618 CD16 POSITIVE CELLS EXPRESS TGFβ AND MEDIATES MURINE INTESTINAL FIBROSIS**

P. Salvador1, D. Ortiz-Masía1, D. Macias-Ceja2, L. Gisbert-Ferrándiz2, J. Hinojosa Del Val4, A. Hernandez2, J.V. Espelage1, J. Millán1

1Dept. De Farmacologia, CIBERehd-Univ. de Valencia, Valencia/Spain
2Ibd Unit, GITP, Institut d’Investigació en Ciències de la Salut Germans Trias i Pujol, Badalona, Barcelona, Spain
3Dept. Medicina, CIBERehd-Univ. de Valencia, Valencia/Spain
4Ibisio, Valencia/Spain

Contact E-mail Address: pedro.salvador@uv.es

Introduction: M2 macrophages play a key role in injury repair and fibrosis. We showed that TGFβ-1 deficient macrophages mediate mucosal repair after TNBS-induced acute colitis 1 and that, in a chronic model, TGFβ deficient animals accumulate macrophages expressing the CD6 marker that promote intestinal fibrosis 2.

Aims & Methods: We aim to analyze whether the expression of the pro-fibrotic mediator TGFβ1 is related with this macrophage phenotype and the relevance of these cells in murine intestinal fibrosis. Murine peritoneal macrophages obtained from both WT or STAT6 (-/-) mice were treated with IL-4 (20 ng/ml), IL-10 (50 ng/ml) or vehicle and the mRNA expression of CD16, TGFβ, Vimentin, Col1a1, a-SMA, MMP2 and TIMP1 was evaluated in murine intestinal mcosa by qPCR.

Results: Positive and significant correlation between CD16 mRNA and TGF β1 mRNA was detected in this group. These patients also presented a generalized overexpression of Wnt ligands together with augmented DKK1 mRNA levels. B2-patients showed a more complex situation with ligands that present increased (Wnt5), reduced (Wnt2b) or unchanged expression in the absence of significant variations in the levels of macrophage markers (Table). Table. Relative (Gene/b-actin) mRNA expression (fold induction vs control group) of genes with detectable levels. Data are expressed as Mean±SEM in n ≥ 7 in all groups and analyzed by ANOVA + Kemman-Keuls test. (*p < 0.05 vs control; **p < 0.05 vs control).

Conclusion: Crohn’s disease patients presenting a strictureing (B2) or a penetrating (B3) behavior undergo different macrophage infiltration and Wnt signaling.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1619 GTS-21, A7 NICOTINIC ACETYLCHOLINE RECEPTOR AGONIST, ATTENUATE DSS-INDUCED COLITIS BY IMPROVING INTESTINAL MUCOSAL BARRIER FUNCTION

Y. Zhu1, H. Zhang2
1Department Of Gastroenterology, First Affiliated Hospital of Nanjing Medical University, NanJing JiangSu/China
2Department Of Gastroenterology, Jiangsu Province Hospital and Nanjing Medical University, NanJing/China

Contact E-mail Address: zhuyunjuan2008@126.com

Introduction: The intestinal inflammation is reduced by electrical stimulation of the different vagus nerve. Cholinergic neural output may be a target to minimize tissue damage in autoimmune disease. Cholinergic neural output can modulate innate immune responses through stimulation of α7 nicotinic acetylcholine receptors (α7nAChR). GTS-21, a selective α7nAChR agonist, has previously demonstrated to inhibit the manifestation associated with rheumatoid arthritis (RA). In this study we investigate whether GTS-21 protects against DSS-induced colitis and its potential mechanism.

Aims & Methods: Male BABL/c mice (8–10 weeks old, n = 32) were randomly divided into 4 groups: normal control group, DSS-induced group, GTS-21 treatment control group (DSS-induced mice treated with GTS-21), and the control group received saline. Caco2 cells were exposed by 25 ng/ml TNF-α for 30 min prior to GTS-21 injection. BAY 11-2028 (NF-κB) group was treated with GTS-21 (20 mg/kg intraperitoneal injection) per day, a-BGT group was pre-treated with a-BGT (0.1 mg/kg/day, intraperitoneal injection) for 30 min prior to TNF-α injection, and the control group received saline. Caco2 cells were randomly divided into 4 groups: normal control group, TNF-α-induced group, GTS-21 treatment control group, a-BGT group. TNF-α group of Caco2 cells were exposed by 25 ng/ml TNF-α, GTS-21 group were given 100 ng/ml GTS-21 for 30 min prior to TNF-α; a-BGT group pre-treated with a-BGT (50 ng/ml) for 30 min prior to GTS-21 injection. BAY 11-2025 (NF-κB inhibitor) group were given 50 ng/ml BAY-11-2025 for 30 min prior to TNF-α. Disease activity index, macroscopic scores, and colonic damage were determined. The intestinal permeability of mice was measured by fluorescein-isothiocyanate-dextran (FITC-Dextran method). Western blot was used to detect the tight junction protein and NF-κB associated protein expression.

Results: Compared with DSS-induced mice, DAI score decreased and colon length improved after administration of GTS-21 (9.1±0.74 cm vs 6.5±0.53 cm, P <0.01). CD14, CD86 and Wnt10b positive cells was analyzed in macrophages. Macrophages were identified within inflammatory cells characterized by flow cytometry. Macrophages can contribute to fibrosis through the release of different mediators. We presented the 1.35 fold change in Wnt10b expression and the 0.22 fold change in MUC2 expression in the treatment group compared with the control group.

Conclusion: The mucosa of CD patients accumulate pro-inflammatory macrophages measured as DSS+6 cells while those macrophages expressing the M2 marker CD206 after their phenotype increasing the expression of both, CD6 and CD206. We proved that the profibrotic mediator Wnt10b increased.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1621 ANAEMIA PREVALENCE AND TREATMENT APPROACH FOR INF LAMMATORY BOWEL DISEASE

G. Bengi1, H. Keyvan2, H. Akpınar3
1Gastroenterology, Dokuz Eylül University Hospital, İzmir/Turkey
2Internal Medicine, Dokuz Eylül University Hospital, İzmir/Turkey

Contact E-mail Address: dragokelbengi@hotmail.com

Introduction: For inflammatory bowel disease (IBD), anaemia is the most frequently observed extra intestinal finding, prevalence of which varies from 6% to 74%. It’s of great importance to determine and treat anaemia as it lowers patients’ life quality and leads to labour loss. The main causes of anaemia in IBD are iron deficiency anaemia (IDA) and anaemia of chronic disease (ACD). In this study, we aim to specify the type and prevalence of anaemia along with a treatment approach for inflammatory bowel disease (IBD).

Aims & Methods: In this study, we analyze the type and prevalence of anaemia along with a treatment approach for inflammatory bowel disease (IBD). We conducted a retrospective study on 465 patients, who were diagnosed with IBD and followed up at our hospital from June 2015 to June 2016 (male: 254, female: 211, average age: 47±14.4, Crohn disease (CD): 257, Ulcerative Colitis (UC): 108). According to WHO criteria, anaemia is defined as haemoglobin value is below 13 g/dL in men and 12 g/dL in women.

Results: In our study, we determined that 50.3% of total 465 patients had anaemia, which was more frequent in women than men (64% vs. 39%, p < 0.001). Anaemia frequency was higher in CH cases (57%) than in UC cases (41%) (p=0.001). CD involvement were as follows: 54.5% in ileal involvement, 26.1% in colon involvement and 19.4% in ileocolonic involvement (p<0.001). Hb levels were significantly lower in Crohn disease (CD) patients with A2-strictureing and B2-penetrating behavior according to Montreal classification (age at diagnosis, location and behavior) as well as from non-inflamed tissue from cancer patient. Resections were immediately processed and lamina propria mononuclear cells characterized by flow cytometry. Macrophages were identified within singlet viable leukocytes as CD45 + CD14 + CD64 + . The percentage of CD206, CD16, CD163, CD86 and Wnt10b positive cells was analyzed in macrophages. Data are expressed as Mean±SEM % with n≥5 in all groups (P<0.05 vs control Student’s t-test).

Contact E-mail Address: m.dolores.ortiz@uv.es

Introduction: Intestinal fibrosis is a common complication of IBD and macrophages can contribute to fibrosis through the release of different mediators. We have recently reported that Wnt10b increase the deposition of collagen and promotes intestinal fibrosis in TNBs-treated mice (P015 ECCO 2017).

Aims & Methods: The aim of the present study is to analyze the pattern of expression of macrophages and the expression of Wnt10b in human macrophages from different resections from Crohn’s disease (CD) patients with A2-strictureing and B3-penetrating behavior according to Montreal classification (age at diagnosis, location and behavior) as well as from non-inflamed tissue from cancer patient. Resections were immediately processed and lamina propria mononuclear cells characterized by flow cytometry. Macrophages were identified within singlet viable leukocytes as CD45 + CD14 + CD64 + . The percentage of CD206, CD16, CD163, CD86 and Wnt10b positive cells was analyzed in macrophages. Data are expressed as Mean±SEM % with n≥5 in all groups (P<0.05 vs control, Student’s t-test).

Results: The percentage of macrophages identified as CD45 + CD14 + CD64 + constituted the 0.22 ± 0.03% of total events in the control mucosa while represented the 1.35 ± 0.40% in the mucosa from CD patients (p < 0.05). A high proportion of mucosal macrophages expressed CD206 in both, control (83.3 ± 4.8%) and CD (89.6 ± 3.9%). In these CD206+ cells, an increased expression of CD16 in CD mucosa was observed (Control: 34.5 ± 6.8%; CD: 59.7 ± 6.4%) while that of CD163 was similar in both groups (control: 72.8 ± 8.4%; CD: 85.2 ± 7.3%). The analysis of Wnt10b in CD206+ showed a significantly higher expression in CD patients (56.6 ± 4.2%) than in control samples (30.1 ± 10.4%). Additionally, CD86+ macrophages were more abundant in controls (CD: 29.3 ± 10.2%) than in CD (11.2 ± 6.6%)

Conclusion: The mucosa of CD patients accumulate pro-inflammatory macrophages measured as CD86+ cells while those macrophages expressing the M2 marker CD206 after their phenotype increasing the expression of both, CD6 and CD206.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Conclusion: We found that almost half of all IBD patients (50.3%), whom we followed up, had anaemia, the most frequent reason of which was IDA. Almost half of these patients received anaemia treatment. We should increase the treat- ment rate in our IBD patients that have anaemia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1624 EFFECT OF T CELL ACTIVATION AND INFLAMMATION ON THE INTERACTION BETWEEN T CELLS AND ENTERIC GLIAL CELLS

I. Neveu1, J. Pabois2, T. Durand2, J. Gonzales2, J. A. Gonzales2, M. Neunlist1, P. Naveilhan1

1INSERM U1235, Nantes/France
2Inserm 1235, tens, Nantes/France

Contact E-mail Address: julie.pabois@etu.univ-nantes.fr

Introduction: Enteric glial cells (EGC) are essential to intestinal epithelial barrier (IEB) homeostasis. In healthy intestines, EGC reduce IEB permeability and promote mucosal healing. In inflammatory bowel disease (IBD) such as Crohn’s Disease (CD) and Ulcerative Colitis (UC), both EGC phenotype and IEB functions are altered, but putative involvement of EGC in IBD pathogenesis remains unknown. If the astrocyte reactivity is well studied, the reaction of EGC to chronic inflammation is not well documented. We investigated whether EGC impact on IEB permeability was altered in an inflammatory environment and in IBD patients.

Aims & Methods: Rat EGC as well as human EGC from control, CD and UC patients were stimulated with the cytokine T (TNFalpha=IL1beta; 1 to 100 ng/ml) or LPS for 2 or 4 days. Reactive EGC phenotype where characterized and reactive EGC functional impact on IEB permeability was studied (i) in vitro using human intestinal epithelial cells (IEC) in a non-contact co-culture model, or (ii) in vivo by grafting the treated rat EGC in colon wall of Sprague Dawley rats.

Results: Rat and human control EGC induced a significant reduction of IEB paracellular permeability after T treatment when compared with untreated or LPS treated EGC. LPS or T treatment had no significant effects on IEC alone. In vivo colon wall grafting with control EGC did not modify the permeability whereas colon wall grafting with EGC pre-conditioned by T significantly reduced

Disclosure of Interest: All authors have declared no conflicts of interest.

P1625 ENTERIC GLIAL CELLS REACTION IS LOST IN CROHN’S DISEASE

M. Rolli-Der Kinderen1, C. Pochard1, T. Clairembault1, N. Cenac2, A. Bourreille1, M. Neunlist1

1INSERM U1235, Nantes/France
2Digestive Health Research Institute, INSERM UMR-1043 CNRS UMR-5282, Nantes/France

Contact E-mail Address: malviny.derkinderen@univ-nantes.fr

Introduction: Enteric glial cells (EGC) are essential to intestinal epithelial barrier (IEB) homeostasis. In healthy intestines, EGC reduce IEB permeability and promote mucosal healing. In inflammatory bowel disease (IBD) such as Crohn’s Disease (CD) and Ulcerative Colitis (UC), both EGC phenotype and IEB functions are altered, but putative involvement of EGC in IBD pathogenesis remains unknown. If the astrocyte reactivity is well studied, the reaction of EGC to chronic inflammation is not well documented. We investigated whether EGC impact on IEB permeability was altered in an inflammatory environment and in IBD patients.

Aims & Methods: Rat EGC as well as human EGC from control, CD and UC patients were stimulated with the cytokine T (TNFalpha=IL1beta; 1 to 100 ng/ml) or LPS for 2 or 4 days. Reactive EGC phenotype where characterized and reactive EGC functional impact on IEB permeability was studied (i) in vitro using human intestinal epithelial cells (IEC) in a non-contact co-culture model, or (ii) in vivo by grafting the treated rat EGC in colon wall of Sprague Dawley rats.

Results: Rat and human control EGC induced a significant reduction of IEB paracellular permeability after T treatment when compared with untreated or LPS treated EGC. LPS or T treatment had no significant effects on IEC alone. In vivo colon wall grafting with control EGC did not modify the permeability whereas colon wall grafting with EGC pre-conditioned by T significantly reduced
the permeability when compared to control animals. Human EGC from control or UC patients treated with T1 induced a decrease in IEB permeability too, but EGC from CD patients did not differ.

**Conclusion:** This work is not only the first evidence showing that reactive EGC can have beneficial effects upon IEB permeability, but also shows that EGC from CD but not UC patients have lost this reactivity. This could define EGC as active players in CD pathogenesis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1627 7A-HYDROXY-4-CHOLESTEN-3-ONE FOR DIAGNOSIS AND MANAGEMENT OF BILE ACID MALABSORPTION: FIRST YEAR CLINICAL EXPERIENCE**

A. Friedli1, F. Brunner1, C. Prost2, C. Bover1, D. Kroll1, A. Macpherson1, P. Juillerat1

1Gastroenterology, Inselsepital, Bern University Hospital, Bern/Switzerland
2University Institut Of Clinical Chemistry, Bern University Hospital, Bern/Switzerland
3Chirurgie, University of Bern, Bern/Switzerland

**Contact E-mail Address:** pascal.juillerat@insel.ch

**Introduction:** Inflammatory bowel disease (IBD) both intestinal epithelial barrier (IEB) permeability and PTGIS expression are altered. Nevertheless the role of the lipid mediator PGI2 produced by PTGIS in IEB regulation is unknown.

**Aims & Methods:** The present study concerns the control of IEB permeability by PGI2 and its involvement in the development of colitis.

**Results:** The production of PGI2 from control or IBD biopsies was established using high sensitivity liquid chromatography tandem mass spectrometry. Consequences of flocan PGI2 analogous supplementation were evaluated in a DSS-induced mice model of colitis, measuring disease activity index (DAI), inflammation (pro-inflammatory cytokine mRNA) and IEB permeability (sulfoconic acid flux). Molecular mechanisms involved were assessed by quantification of junctional and pro-proliferative vs pro-apoptotic protein expression (western blot and immunostaining). Eventually PGI2 impact on reversing IEB breakdown was assessed ex vivo measuring permeability of mice or human mucosal explants treated with staurosporine apoptosis inducer, or permeability of IBD biopsies both treated or not with flocan.

**Conclusion:** This study not only presents a role of PGI2 in controlling IEB breakdown but also reveals a new mechanism of IEB permeability through the regulation of apoptosis mechanisms, but also reveals that increased permeability in IBD patients can be fixed by PGI2 supplementation.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1628 THE ROLE OF SEVERAL CYTOKINES IN THE PATHOGENESIS OF AUTOIMMUNE INFILTRATION IN PATIENTS WITH ULCERATIVE COLITIS**

A. Valeeva1, R. A. Abdulkhakov2, O. V. Skorokhodkina1, S. R. Abdulkhakov2, S. Khaiboullina1, E. Martinova2, A. Rizvanov2

1Clinical Immunology And Allergology, Kazan State Medical University, Kazan/Russian Federation
2Kazan State Medical University, Kazan/Russian Federation

**Contact E-mail Address:** allv05@mail.ru

**Introduction:** Ulcerative colitis (UC) is a clinical type of inflammatory bowel diseases. The pathogenesis of UC remains unclear. Nowadays the role of T-helpers type 17 (Th17) as well as cytokines they release is discussed in pathogenesis of autoimmune infiltration in UC.

**Aims & Methods:** The aim of study is to analyze the serum levels of following cytokines: interleukin (IL)-17A and F, 21, 22, 23, 33 in UC patients both in the acute stage of disease and remission. Forty eight UC patients in the acute stage and twenty patients in remission were included into the study. Serum cytokine levels were analyzed with multiplex immunoassay for Th17 cytokines (Bio-Rad, USA). Statistical analysis was performed using STATISTICA 6.0 Software Package. The control group consisted of 11 healthy volunteers.

**Results:** Statistically significant increase of IL-17A level (15 pg/ml [12.11;23.38]; 14.68 pg/ml [11.29;17.19] respectively) was observed in patients with UC both in acute stage and remission compared to controls (7.36 pg/ml [5.18;8.06], p = 0.00007, p = 0.00029 respectively). The same trend was observed regarding IL-22, which median values were higher both in acute stage (156.51 pg/ml [133.44;233.53]) and remission (144.02 pg/ml [133.44;154.43]) compared to control group (98.31 pg/ml [89.14;124.86], and showed statistically significant differences (p = 0.0007, p = 0.0054 respectively). Besides it was revealed that IL-17F and IL-22 were also higher in acute stage (3.65 pg/ml [0.8;25.88] and 3.76 pg/ml [0.5;5.83], respectively) compared to controls (4.87 pg/ml [3.8;7.87]; and 2.6 pg/ml [1.7;3.2], respectively), however differences were not statistically significant (p = 0.06; p = 0.172 respectively). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. Statistically significant increase of IL-10 in remission (27.99 pg/ml [17.53;33.55]) compared to controls (4.36 pg/ml [3.26;15.25], p = 0.0046) was found as well. IL-10 was also higher in patients with acute stage (21.93 [3.61;33.53]) compared to controls, however differences were not statistically significant (p = 0.065). IL-10 as an anti-inflammatory cytokine characterizes the activity of regulatory T-cells which suppress autoimmune inflammation. In addition, it was revealed that the level of IL-23 which stimulates Th17 differentiation was both higher in acute stage (258.4 pg/ml [55;367.49]) and remission (248.93 pg/ml [90.06;301.93]) compared to controls (124.3 pg/ml [107.9;296.04]), however differences were not statistically significant.

**Conclusion:** Increase of IL-17A, IL-17F, IL-21, IL-22 levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. IL-17A and IL-21 produced by Th17 cells might be considered as markers of active autoimmune infiltration in UC patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
The steroid-refractoriness is a common complication of ulcerative colitis (UC), which appears unpredictably. Several mechanisms of action (MoA) have been implicated in corticosteroid failure. However, there are no conclusive results. While in case of diversity have been described. There are attempts to therapeutically transfer the complex ecosystem and have tremendous impact on our health. In inflammatory bowel disease (IBD), shifts in faecal microbiota composition are associated with disease activity and severity. The intestine is populated with myriads of bacteria, which form a microecosystem and have tremendous impact on our health. In inflammatory bowel disease (IBD), shifts in faecal microbiota composition are associated with disease activity and severity. The intestine is populated with myriads of bacteria, which form a microecosystem and have tremendous impact on our health. In inflammatory bowel disease (IBD), shifts in faecal microbiota composition are associated with disease activity and severity.

**Results:**
These results were not previously published and are now being presented for the first time. We identified a potential new MoA that includes 64 key proteins, 18 of them capable of perfectly classifying patients with a good response to glucocorticoids and the non-responders. The biological functions of these proteins have been associated with inflammation (e.g. RelA), glucocorticoid receptor transcription (e.g. NRC1 and NCOA3), and angiogenesis (e.g. VEGF), mainly. But among these 18 proteins, the ANP32e has never been related to either steroid-refractoriness or ulcerative colitis. ANP32e is a chaperone linked to H2A-H2A exchange (H2A.z is part of the nucleosomes flanking DNA regions recognized by the glucocorticoid receptor). Additional WB and immunofluorescence assays confirm differences in the intestinal levels of ANP32e and in the nuclear localization at baseline, between patients with disease and controls.

**Conclusion:** In conclusion, this study has identified a potential new MoA related to UC steroid-refractoriness involving chromatin remodeling modifications.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
Results: each influenza strain was measured by inhibition of hemagglutination. The single group and booster group were randomly collected at 3 points (before vaccination, 4 weeks after vaccination and after the rivalent influenza vaccine was administered subcutaneously. Serum samples were assigned to adult patients with Crohn’s disease or ulcerative colitis, and quadrivalent influenza vaccine. Serological response rate to influenza vaccination was low in IBD H1N1: OR 0.37 (0.11–1.21); H3N2: OR 0.22 (0.07–0.68), SC%: H1N1: 0.23 B/Phuket: p = 0.81; H3N2: p = 0.79; B/Phuket: p = 0.82; B/Texas: p = 0.84. In patients treated with infliximab, seroprotection rate (SP%) and seroconversion rate (SC%) tended to be lower in influenza A strains in patients who maintained blood concentrations H1N1: OR 0.37 (0.11–1.21); H3N2: OR 0.22 (0.07–0.68), SC%: H1 N1: 0.23 (0.06–0.91); H3N2: 0.19 (0.06–0.56). Conclusion: Serological response rate to influenza vaccination was low in IBD patients receiving immunomodulator therapy, especially infliximab, even with a quadrivalent influenza vaccine.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1634 IBD-RELATED MALIGNANCIES AND MORTALITIES: OBSERVATIONS FROM THE PROSPECTIVE NATIONWIDE HUNGARIAN REGISTRY

T. Molnár1, M. Rutka1, F. Nagy1, P. Fritz2, L. Lakatos3, P. Mihheller4, Z. Erdélyi1, T. Szamosi3, E. Schaffer5, A. Vincze5, P. Sarlós1, J. Bana1, A. Kovács1, J. Novák1, A. Salamon1, A. Szeps6, N. Szegi7, M. Juhasz8, K. Mengersztein9, A. Kaderka10, B. Pappel10, K. Paluta11, M. Pap12, A. Zaránd13, P.L. Lakatos18, G.L. Veres19, A. Fabian19, A. Balint19, R. Bort1, Z. Szep1, K. Farkas1

1Department Of Internal Medicine, University of Szeged, Szeged/Hungary 2Department Of Internal Medicine, Szeged University Medical Centre, Szeged/Hungary 3Department Of Internal Medicine, Coslnoky Ferenc Regional Hospital, Veszprem/Hungary 4Military Hospital-State Health Centre, Budapest/Hungary 51st Department Of Medicine, University of Pecs, Pecs/Hungary 6 Péterfy Sandor Hospital and Trauma Center, Budapest/Hungary 7Bekes County Teaching Hospital, Gyula/Hungary 8Department Of Gastroenterology, Tolna County Teaching Hospital, Szekszard/Hungary 9Gastroenterology & Endoscopy, Bacs-Kiskun Country Hospital Gastroenterology & Endoscopy, Kecskemét/Hungary 102nd Department Of Internal Medicine And Nephrology Centre, University of Pécs, Pécs/Hungary 11St. Margaret Hospital, Budapest/Hungary 122nd Dept. Of Medicine, Semmelweis University, Budapest/Hungary 13University of Debrecen, Debrecen/Hungary 14Betgegpoli Igazulas Rend Budai Igazsagrendi Hospital, Budapest/Hungary 15Department Of Gastroenterology, University of Debrecen, Debrecen/Hungary 16Beket County Hospital, Budapest/Hungary 171st Department Of Medicine, Semmelweis University Faculty of Medicine 1st Dept. of Medicine - 1st Department of Medicine, Semmel, Budapest/Hungary 181. sz. Gyermekklinika, Semmelweis Egyetem, Budapest/Hungary

Contact E-mail Address: molnarm@h-uni-szeged.hu

Introduction: The increasing incidence of anal canal (AC) carcinomas in men and women requires better knowledge on Human papillomavirus (HPV) infection at this site and its risk factors. Higher incidence of AC cancers in Crohn’s disease (CD) patients is strongly suggested in the literature, without knowledge on HPV involvement. A gastroenterology population offers the opportunity to study a mixed and non-sexually at risk selected population and to study anal HPV infection in CD patients.

Aims & Methods: The aim of the study was to assess AC HPV infection prevalences and its risk factors in a gastroenterology population. The ‘Human papillomavirus (HPV) Anal Neoplasia’ - PAPILLAN study took place in a French university hospital gastroenterology unit. Consecutive patients were prospectively recruited at the occasion of a colonoscopy, whatever the indication. On the colonoscopy day, under informed consent with ESBL-E smear was sampled with a dedicated brush for molecular analysis. HPV detection and genotyping was performed with the INNO-LiPA assay. Risk factors for any HPV, and high risk (HR) HPV infection were assessed by bivariate and multivariate analysis after logistic regression.

Results: A total of 469 consecutive patients (median age 54 years, 52% women) had suitable anal samplings for HPV DNA detection. Among them 101 had inflammatory bowel disease (IBD), 70 had CD. 112 patients had at least one immunosuppressive treatment for IBD or another condition. Overall 34% of the population had a detection of any HPV type in AC smears. HR HPV prevalence was 18%, LR HPV prevalence was 9% and HPV16 prevalence was 7%. Most prevalent HR HPVs were, by decreasing order: HPV16, HPV51, HPV52 and HPV39. Among all patients with HPV positive or HR HPV positive samples, 65.6% and 65.9% were women, respectively (p = 0.0001; p = 0.0035, compared to men). Regarding medical history, HR HPV and HPV16 prevalence were significantly higher in Crohn’s disease (68% and 48% respectively, p = 0.0051; 14%, p = 0.0072, compared to the rest of the study population). Eleven/12 patients (50%) with perianal CD had an AC infection with any HPV. Multivariable analysis associated female gender and history of sexually transmitted disease with the presence of any HPV in AC; and female gender, history of sexually transmitted disease, lifetime and past year number of sexual partners, active smoking and immunosuppressive treatment (OR 5.3) with the presence of HR HPV.

Conclusion: We demonstrated that CD patients harbor more frequent AC infection with HR HPVs and that immunosuppressive treatment is an independent risk factor for HR HPV infection at this site. These findings strongly support prophylaxis with vaccination and adequate screening in our patients.

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S. Koch: Speaker for Abbvie, MSD, Norgine, Olympus All other authors have declared no conflicts of interest.

L. Plastaras: Speaker for Hospira, Abbvie, MSD

Contact E-mail Address: vita@skuja.lv

Introduction: Extended spectrum beta-lactamase producing Enterobacteria (ESBL-E) may increase inflammatory bowel disease activity. This study aimed to assess ESBL-E colonization and clinical disease activity in IBD patients.

Methods: Consecutive patients with confirmed UC and CD diagnosis, previously hospitalized in two largest tertiary medical care centres in Riga, Latvia during a 7-year period (2010–2016) were included in the study, interviewed, rectal swabs were collected, Enterobacteria were cultured and analyzed for ESBL presence according to European Committee on Antimicrobial Susceptibility Testing (EUCAST) guidelines. To clinically evaluate disease activity UC patients were evaluated according to Mayo score, Montreal classification, adapted Truelove and Witt’s criteria and CD patients according to Crohn’s disease activity index (CDAI), suggested by ECCO IBD guidelines (2016). Results: A total of 101 patients with UC and 47 patients with CD were tested for gut colonization with ESBL-E. We found that 12 (11.9%) of the UC patients and 5 (10.6%) of the CD patients were colonized with ESBL-E. Statistical significant differences were found in all UC clinical disease activity scores between patients with and without gut colonization with ESBL-E and showed tendency towards statistical significance in CD. The mean disease activity according to Mayo score in UC patients without ESBL-E colonization was 3.44 (SD = 2.07), whereas in patients with ESBL-E colonization it was 5.08 (SD = 2.84) (p = 0.015).

Most of the UC patients without ESBL-E colonization (n = 63; 70.8%) were in clinical remission, whereas half of the patients with ESBL-E colonization (n = 6;
50%) had mild to moderate to severe disease activity, according to Montreal classification system section (p = 0.037). Most of the UC patients with out ESBL-E colonization (n = 81; 91%) had mild disease activity, whereas half of the patients with ESBL-E colonization (n = 6; 50%) had moderate disease activity, according to modified Truelove and Witt’s criteria (p < 0.001). Most of the CD patients without ESBL-E colonization (n = 38; 90%) had moderate disease activity, whereas most of the patients with ESBL-E colonization (n = 3; 60%) had severe disease activity, according to CDAI (p = 0.05).

Conclusion: Gut colonization with ESBL-E might increase disease activity in out- patients. The taking of drugs could be clinically relevant and help to improve diagnostic and treatment protocols for IBD patients, because eradication of ESBL producing bacteria might reduce IBD disease activity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1637 IS SMOKING CESSATION LINKED TO NEW UCERATIVE COLITIS CASES? A RETROSPECTIVE COHORT-BASED HYPOThESIS

M. Grueber1, L. Biedermann2, S. Vavricka3, A. Schoepfer4, A. Macpherson5, P. Juillerat6, C. Clair Willi4, N. Fournier4

1Gastroenterology, Inselspital, Bern/Switzerland
2USZ, Zurich/Switzerland
3Gastroenterology And Hepatology, University Hospital Zurich, Zurich/Switzerland
4CHUV-University of Lausanne, Lausanne/Switzerland
5Ucvm Gastroenterology, University of Bern, Bern/Switzerland
6Abt. Gastroenterology, Inselspital Bern University Clinic for Visceral Surgery and Medicine, Bern/Switzerland

Contact E-mail Address: maude.grueber@gmail.com

Introduction: Smoking has a differential effect on inflammatory bowel diseases (IBD); deleterious for Crohn’s disease (CD) and protective for ulcerative colitis (UC). Thickness of the mucus layer, immune system (cytokines production), mucosal and intestinal microbiome are potential mechanistic factors influenced by the nicotine and numerous other substances. It has been hypothesi- zed that smoking cessation is associated with the second peak of diagnosis in UC patients after 50 years old. Our aim was to confirm this hypothesis using data on smoking status at IBD diagnosis.

Aims & Methods: Adult IBD patients included in the Swiss IBD cohort from November 2006 to November 2015 were asked about their smoking status at diagnosis. We compared the proportion of former smokers in 10-year groups of UC and CD patients.

Results: 2361 IBD patients (1366 CD, 995 UC) were included in the analysis. Among them 52% of CD ans 24% of UC patients were smokers at diagnosis (proportion of smokers in Switzerland (2014): 29%). The higher proportion (66%) of former smokers at diagnosis was in the 50 to 60 years old group of UC patients compared to only 26% in CD patients between 40 to 50 years old (p < 0.001). On a gender basis, the higher proportion of former smokers is particularly significant high among male 50–60 years old with UC (68%) and particularly significant high among CD patients without ESBL-E colonization (n = 26% in CD group and from 17.30 for E1 to 20.55 for E2 in UC group. However, sig- nificant difference in F values was observed in CD patients: L1 and L2 have lower average F than those with L3 and L4 (6.66, 7.63, 10.25 and 14.00 respectively; p = 0.0215). D values were significantly higher for patients with none or one extraintestinal symptoms (p = 0.05). Results of D values obtained in our study were higher than for healthy population aged 35-44 in Poland (mean D~2).

Conclusion: The results of preliminary POLIBD study among two groups of IBD patients showed similar values in DMFT index and higher average number of carious teeth in CD patients, especially in men.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: From June 1, 2009 to January 31, 2017, 421 patients were included and screened with MRC: cohort 1 included 206 IBD patients with liver abnormalities; cohort 2 included 28 IBD patients without liver abnormalities; and cohort 3 included 187 non-IBD patients with liver abnormalities. Two senior radiologists independently evaluated MRC findings. MRC abnormalities were observed in 18% of patients in the cohort 1; 3.6% in the cohort 2; and 31% in the cohort 3 (Table 1). Based on MRC, we found respectively 11.2%, 0%, and 7% of PSC in cohorts 1, 2, and 3. 29.2% of IBD patients with liver abnormalities had infra-clinical PSC. A history of intestinal resection (P = 0.0357), abnormal gamma-glutamyl transferase values (P = .0064), and abnormal alkaline phosphatase values (P = 0.021) were significantly associated to suspected PSC. Results of MRC abnormalities in cohorts 1, 2 and 3

Conclusion: Using MRC in patients with IBD, we found a higher prevalence of PSC than based on clinical symptoms. Systematic screening for PSC using MRC could be recommended in routine practice for IBD patients. Disclosure of Interest: All authors have declared no conflicts of interest.

PI641 TRUECOLOURS ULCERATIVE COLITIS (TCCU): WILL PATIENTS WITH UC COMPLETE DIGITAL QUESTIONNAIRES IN REAL-TIME?

A. Walsh1, M. Peters2, C. Hinds3, V. Sexton1, A. Kornilitsin4, P. Svea5, G. Collins6, S. Kaszali7, O. Brain8, H. Uhlig9, A. Simmons10, J. Geddes11, G. Goodwin12, S. Travis13

1Gastroenterology, John Radcliffe Hospital, Oxford, Oxford/United Kingdom
2Nuffield Department Of Population Health, University of Oxford, Oxford/United Kingdom
3Psychiatry, University of Oxford, Oxford/United Kingdom
4Mathematical Institute, University of Oxford, Oxford/United Kingdom
5Botnar Research Centre, Centre for Statistics in Medicine, Oxford/United Kingdom
6Warwick Institute of Molecular Medicine, Oxford/United Kingdom

Contact E-mail Address: alissa.walsh@finacrc.ox.ac.uk

Introduction: TCCU is a comprehensive real-time web-based programme for adult IBD patients with liver function abnormalities and to identify clinical and biological characteristics associated with these findings.

Conclusion: Using MRC in patients with IBD, we found a higher prevalence of PSC than based on clinical symptoms. Systematic screening for PSC using MRC could be recommended in routine practice for IBD patients. Disclosure of Interest: All authors have declared no conflicts of interest.

PI642 BODY COMPOSITION AS A PREDICTOR FACTOR OF DISEASE OUTCOME IN INFLAMMATORY BOWEL DISEASE–RESULTS OF 3-YEAR FOLLOW-UP

A.A. Csontos1, A. Molnár2, R. Henez3, D. Piri4, S. Dukó4, T. Ferenc4, E. Pálfi1, P. Mihle4

12nd Dept. Of Medicine, Semmelweis University 2nd Department of Internal Medicine, Budapest/Hungary
2School Of PhD Studies, Doctoral School Of Pathological Sciences, Health Sciences Research, Semmelweis University, Budapest/Hungary
32nd Department Of Medicine, Semmelweis University, Budapest/Hungary
4John Von Neumann Faculty Of Informatics, Psychiological Controls Research Center, Obuda University, Budapest/Hungary
5Faculty Of Health Sciences, Department Of Dietetics And Nutrition Sciences, Semmelweis University, Budapest/Hungary

Contact E-mail Address: csontosagnesuna@gmail.com

Introduction: Malnutrition and altered body composition can develop in patients with inflammatory bowel diseases (IBD) for a variety of reasons. Malnutrition and sarcopenia may worsen disease outcome in chronic disorders, raise the risk of infections and hospitalization: An unrestricted educational grant from Abbvie Pharmaceuticals was received for this work. Buhlmann laboratories provided all IBDoc kits for this study. All other authors have declared no conflicts of interest.

Results: According to our results 19.2% of the patients (n = 38) were underweight (body mass index (BMI) < 18.5 kg/m²) and 29.8% (n = 59) had alarming low fat-free mass index (FFMI) and were at risk of sarcopenia. Overall 31.5% (n = 62) of the patients needed steroid therapy and 53.5% (n = 106) was given anti-TNF. Almost third of the participant (30.8%, n = 61) were hospitalized due to disease flares or its complications at least once during the follow-up time. The mean period of hospitalization was 19.14 ± 3.27 days. 20.2% (n = 40%) of all participants have undergone intestinal surgery. Hospitalization was positively associated with sarcopenia risk: alarming low FFMI was associated with an OR of 1.81 (95% CI: 1.03–3.20, p = 0.0406). The risk of operation was higher in patients with lower BMI: OR = 1.55 (95% CI: 1.05–2.29, p = 0.0277) for 5 units decrease; no other association was significant in the models.

Conclusion: Our results suggests that low BMI is a risk factor of surgery in inflammatory bowel disease patients. Furthermore alarming low FFMI is a predictor of need of hospitalization and that suggests more serious flares. Identification of malnutrition and altered body composition has notable importance in disease outcome among IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1643 CONTRAST-ENHANCED ULTRASOUND IS HELPFUL IN THERAPEUTIC DECISION MAKING IN PATIENTS WITH STRICTURING CROHN’S DISEASE

Z. Zelinkova1, B. Kadlecikova2, D. Podmanicky3
1Department Of Gastroenterology, St. Michael’s Hospital, Bratislava/Slovak Republic
2IBD Center, Bratislava/Slovak Republic
3Department Of Gastrology, St. Michael’s Hospital, Bratislava/Slovak Republic

Contact E-mail Address: zuzana.zelinkova@nmgs.sk

Introduction: The majority of Crohn’s disease (CD) develop structuring complications of the disease at some point. The proper selection of patients with potential benefit of therapy escalation is crucial in order to avoid unnecessary bowel dissection. Contrast enhanced ultrasound in the affected bowel segment at intravenous contrast-enhanced ultrasound (CEUS) has been shown to correlate with disease activity but there are no data available on the benefit of CEUS for the therapeutic decision making in this clinical setting.

Aims & Methods: The aim of the study was to evaluate the clinical outcomes of CD patients with structuring disease managed based on the CEUS findings. CD patients with structuring disease were recruited from two IBD centre between June 2015 and February 2017. Patients with penetrating disease complications were excluded. CEUS examination protocol: 10 pts had therapy step-up to antiTNF or immunomodulator. 6 pts had therapy switch of another biological; 10 pts had therapy step-up to antiTNF or immunomodulator. 25 pts had follow-up longer than 12 months (median 18 months).

Results: In total, 27 patients were included (10 men; median age 37 yrs, range 23–67; 22 pts with ileo-coecal localization, 3 pts with multiple small bowel segments involvement, 2 with colonic disease). Seventeen patients (63%) had rapid uptake at the CEUS; 13 of these patients had therapy escalation (3 pts intensification or switch of another biological); 10 pts had therapy step-up to antiTNF or immunomodulator. Remaining 3 pts improved subsequently on stable therapy with antiTNF and one patient with longstanding symptomatic colonic stricture was referred for surgery. Ten patients (37%) had no rapid uptake at the CEUS; seven out of these patients had symptomatic structuring disease stricture was referred for surgery. Three patients had no symptoms and no therapeutic changes were made. Twenty-five patients had follow-up longer than 12 months (median 18 months, range 13–23). In the group of patients with rapid uptake, all but two patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery. In the group with no rapid uptake, patients without surgery remained in remission without any changes in the medication. Patients who underwent surgery in the 12 months period after antiTNF therapy escalation and none of these patients had recurrence at the surveillance colonoscopy at 12 months.

Conclusion: Contrast-enhanced ultrasound might be helpful in guiding the therapeutic decision making between surgery and therapy intensification in patients with structuring Crohn’s disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1645 DIAGNOSTIC DELAY AND PREDICTIVE FACTORS FOR CROHN’S DISEASE IN AN ALGERIAN POPULATION

Y. Chebli, R. Boulares
Constantine, Ben Badis Hospital, Constantine/Algeria

Contact E-mail Address: Yacinechebli4@yahoo.fr

Introduction: Crohn’s disease (CD) is a chronic inflammatory bowel disease whose diagnostic delay (DD) is highly variable. A delay in diagnosis of MC is strongly linked to delay in therapeutic interventions appropriate to the patient’s disease activity. Factors Influencing SD may be a function of the country’s health system, but also linked to the particular clinical and evolutionary profile of the disease. The objective of this study was to measure the DD of CD, to describe its distribution and evolution over time and to The factors associated with a long DD (>Q3).

Aims & Methods: All patients with certain or probable CD between 2004 and 2016 identified by The department’s inflammatory disease hospital registry was included. The socio-demographic characteristics collected included: the patient’s personal area at the time of diagnosis in urban, rural or semi-urban, distant from the nearest hospital (CH). Clinical symptoms and phenotype of CD to diagnosis according to the Montreal classification were collected.

Results: Among 247 patients with CD; 90 had a median SD of 03 months. A DD >7 months was considered a diagnostic delay observed in most patients is 157. In univariate and multivariate analysis at diagnosis, the female sex (54.25%), young age (37.24%), absence of enemas (27%), presence of extra-digestive manifestations (25.91%) and Isolated lesions (L1) (34%) and penetrating phenotype (B3) (22.67%) were associated with anopenial lesions (27.12%). Diagnostic delay. Socio-demographic characteristics were not associated with delayed diagnosis.

Conclusion: This study shows that most of the patients, 63.56% have a diagnostic delay significantly associated with the female sex, The young age, the absence of enemas, The presence of extra-digestive manifestations and Isolated lesions (L1). Socio-demographic variables or reflective of access to care were found to influence.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Aims & Methods: We intend to know the incidence of tuberculosis in IBD patients under anti-TNFα therapy in a single tertiary referral centre, analyzing the tuberculosis screening methods and demographic characteristics. IBD patients treated with anti-TNFα therapy between January 2000 and December 2016 were retrospectively analyzed.

Results: During this period 166 patients received anti-TNFα therapy. Before anti-TNFα treatment, screening for LT was performed through medical history, chest X-ray, tuberculin skin test (TST) and/or IGRA. Forty-two patients (25%) had positive screening and received tuberculosis prophylaxis prior to anti-TNFα therapy. Seventeen patients (4.2%) developed tuberculosis while under anti-TNFα treatment (four women, mean age 44 ± 7 years and mean IBD duration 10 ± 8 years). Six of them had a negative LT screening (methods: TST and 2 IGRA) and one patient had positive TST screening, been treated with isoniazid before starting anti-TNFα therapy. During screening three patients were under immune-suppressive and one under corticosteroid therapy. In the IGRA negative screening patients, the diagnosis of tuberculosis occurred within the 10 weeks after starting anti-TNFα. There were five cases of miliary tuberculosis and two of pulmonary disease. Despite difficult diagnosis, all patients were treated successfully, six of whom needed hospitalization.

Conclusion: In our centre the incidence of tuberculosis in IBD patients under anti-TNFα therapy was 4.2% and most of them presenting with a severe disease pattern. The therapeutic regime of tuberculosis was effective and no mortality was recorded. All this patient had a previously negative screening, two of them with IGRA, been considered a high specificity and specificity screening method. Therefore, a surveillance strategy for IBD patients with anti-TNFα therapy is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1647 CAN A PATIENT RATE THE ACTIVITY OF THEIR CROHN’S DISEASE THROUGH A MOBILE APP? THE MEDCROHN STUDY
1Gastroenterología, Complejo Hospitalario de Ferrol, Ferrol/Spain
2Hospital Puerta de Hierro, Madrid/Spain
3Gastroenterología, Hospital Universitari de Bellvitge, Hospitalet de Llobregat/Spain
4Hospital Marqués de Valdecilla, Cantabria/Spain
5Hospital de Poniente, Almería/Spain
6Hospital La Fe, Valencia/Spain
7Gastroenterología, Hospital Universitario de la Princesa, Madrid/Spain
8Departamento De Gastroenterología, Hospital Universitario Dr. Negrín, Las Palmas/Spain
9Hospital San Pedro de Alcántara, Cáceres/Spain
10Gastroenterología, Hospital Central de Asturias, Oviedo/Spain
11Departamento De Gastroenterología, Hospital Gregorio Marañón, Madrid/Spain
12Gastroenterología, Hospital Universitario y Politécnico de La Fe, Valencia/Spain
13Department Of Gastroenterology, Hospital Universitario Miguel Servet, Zaragoza/Spain

Contact E-mail Address: a.echarri.piudo@sergas.es

Introduction: The MedCrohn study was designed to evaluate the level of agreement between the Harvey Bradshaw Index (HBI) translated into a patient-based questionnaire completed through a mobile app, and the original HBI questionnaire assessed by the clinician (considered as reference).

Aims & Methods: Patients completed the HBI score through a mobile app designed for both Android and iPhone devices and thereafter (<48 h later), the questionnaire was completed onsite by the gastroenterologist who was blinded for the patients’ responses. We assessed agreement between HBI scores of the clinician and patient on the total sum score and per item. HBI score <5 was considered as inactive disease.

Results: 135 participants studied in the project and completed the HBI trough a mobile app (mean age: 36.3 ± 8 years, 58% women). The proportion of agreement between clinician and patient assessment, both evaluating CD as active or in remission was 91.1%. Only in 12 cases (11%), the patient classified CD as active whereas the physician evaluated it as inactive. No active cases remained undetected by the patient evaluation. Sensitivity, specificity, positive and negative predictive values are shown in Table. The highest agreement was seen for the questions: “abdominal mass” and “general well-being” whereas “number of liquid stools per day” was the item with the lowest agreement.

Patient Rate Clinician Assessment Clinician Assessment Total
Active 26 12 38
Remission 0 97 97
Total 26 109 135

Sensitivity (%) Specificity (%) PPV(%) NPV (%) Agreement
100 89 68 100 91.1% CI(95%)

Conclusion: The HBI score self-administered by the patient through a mobile app resulted in a high percentage of agreement with the gastroenterologist evaluation, and high negative predictive value for disease activity. Results of the MedCrohn study encourage the use of this mobile app and gives some hints on its conditions of use as a support for the involvement of patients in the management of their disease. Future studies will help to define its precise role in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1648 HISTOLOGICAL ASSESSMENT OF REMISSION IN UC: DISCREPANCIES BETWEEN DAILY PRACTICE AND EXPERT OPINION
P. Kranenburg1, T.E.H. Römkens1, A. Van Tilburg2, C. Bronkhorst3, J.P.H. Drenth1, I.D. Nagtegaal2, F. Hoentjen4
1Gastroenterology And Hepatology, RadboudUMC, Nijmegen/Netherlands
2Pathology, RadboudUMC, Nijmegen/Netherlands
3Pathology, Jeroen Bosch Hospital, ’s-Hertogenbosch/Netherlands

Contact E-mail Address: pim.kranenburg@radboudumc.nl

Introduction: Histological remission (HR) has become an important treatment target in ulcerative colitis (UC). However, limited data exist on reliability of histological scoring in daily practice, when it comes to assess minor histological abnormalities. We investigated the reproducibility and reliability of UC histological scores in colonic biopsies assessed as HR by a general pathologist in daily practice. Next, we investigated correlations between the initial histological assessment and the expert review by expert gastrointestinal (GI)-pathologists.

Aims & Methods: We performed a retrospective single-centre study in a tertiary IBD referral centre. Colonic biopsies of UC patients with mucosal healing (MH) throughout the examined colon were included. All biopsies were re-assessed by three blinded GI-pathologists using three histological scoring indexes (Geboes score (GS), Riley score (RS), Harpaz-D’Haetga Index (HGI)) and a global visual scale (GVS). We evaluated inter- and intraobserver variation and correlations between scores and initial histological assessment using Cronbach’s alpha and Spearman’s rho analysis.

Results: We included 270 biopsies from 94 UC patients. The interobserver concordance for all histological indexes was substantial to almost perfect (GS 0.84; RS 0.91, HGI 0.61GVS 0.74). The correlation between the RS and GS was almost perfect (R = 0.86), but no correlation was found between the primary histological assessment and the GS (0.00), the RS (<0.01), the HGI (0.03) and the GVS (~0.04) as scored by expert GI-pathologists.

Conclusion: Available histological scores for UC are reliable with strong mutual correlations in case of limited histological abnormalities. However, the discrepancies in case of minor histological abnormalities might impact on daily practice. Future studies will help to define its precise role in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1649 EVALUATION OF MODIFIED MAYO ENDOSCOPIC SCORE AND ULTRACOLONIC STOPEUCCROP: IMPACT ONNCE ADOPTURE ULCERATIVE COLITIS EXTENSION, IN THE PREDICTION OF RELAPSE
1Gastroenterology, CH/NG/E, Vila Nova De Gaia/Portugal
2Gastroenterology, Centro Hospitalar Vila Nova de Gaia/Espinho, Vila Nova De Gaia/Portugal

Contact E-mail Address: jaimepereirarodrigues@gmail.com

Introduction: Current endoscopic activity scores for Ulcerative Colitis (UC) do not take into account the extent of mucosal inflammation. Recently, two endoscopic scores that combine the assessment of severity and disease extension were developed, the Modified Mayo Endoscopic Score (MMES1) and Degree of Ulcerative Colitis Burden of Luminal Inflammation (DUBLIN).2

Aims & Methods: We aimed to evaluate the relation of the scores with disease activity and as predictive factors of clinical relapse. Patients with UC in clinical remission (partial Mayo score [pMS] ≤1) who underwent colonoscopy between January/2010 and December/2013 were included. MMES and DUBLIN scores were calculated. Analytical and histological activity (defined by Geboes score ≥3.1 and Nancy score ≤2.4) as well as predictive factors of relapse and relapse-free time were evaluated. Relapse was defined as pMS ≥2, therapy to induce remission, hospitalization and/or colectomy.

Results: 82 patients were selected. 51.2% (n=42) female, mean age 49.4 ± 13.7 years. MMES ranged between 0–138 and DUBLIN between 0–9. MMES and DUBLIN scores presented good correlation (r=0.945, p<0.001). MMES was higher in patients with histological activity defined by Nancy (3.7 ± 4.0 vs. 0.8 ± 1.5; p<0.001) and Geboes (4.0 ± 4.2 vs. 1.3 ± 2.4; p=0.005). DUBLIN was also higher in patients with histological activity defined by Nancy (1.9 ± 2.1 vs. 0.5 ± 0.8; p=0.001) and Geboes (2.0 ± 2.3 vs. 0.7 ± 1.2; p=0.000). There was no significant correlation between both scores and analytical activity. Relapse occurred in 36.6% (n=30) of patients, with a cumulative risk of 9.8, 18.4, 25.9, 31.5 and 42.0% at 12, 24, 36, 48 and 60 months, respectively. Mayo Endoscopic Subscore (MES) (p<0.001), MMES (p<0.001), DUBLIN (p<0.001) presented a significant association with relapse. In multivariate analyses, MES (OR=2.32; p<0.001), MMES (OR=1.19; p<0.001) and DUBLIN (OR=1.36; p<0.001) were predictive of relapse independently from histology. Areas under the ROC curve were: 0.71 (MMES), 0.75 (DUBLIN), 0.74 (DUBLIN, p=0.001) for prediction of relapse, with MMES significantly higher than MES by a difference of 0.037 (0.002-0.072); p=0.03.

Conclusion: MMES and DUBLIN scores correlate with each other and with histological activity and are independent predictors of relapse. MMES was superior to MES in the prediction of relapse.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1650 USEFULNESS OF MAGNETIC RESONANCE ENTEROGRAPHY ON MEDICAL DECISION-MAKING IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD) AFTER A 1-YEAR FOLLOW-UP: A MULTICENTER STUDY
L. Ramos1, A. Hernandez Camba1, I. Rodriguez - Lago1, M. Carrillo Palau1, L. Cojas2, A. Eizirik1, L. Alfonso Abreu1, M. Vela1, A. Hidalgo1, N. Alvarez-Buitlla2, G.E. Rosello3, V. Rodriguez1, C. Tardillo1, D. Eiroa1, J.A. Lareina1, M.S. Garrido1, J.L. Cabrilla1, E. Quintero Carrion1
1Gastroenterology, Hospital Universitario de Canarias, San Cristobal de La Laguna/Spain
2Gastroenterology, Hospital Universitario Nuestra Settora de Canadaria, Santa Cruz de Tenerife/Spain
3Gastroenterology, Hospital de Galdakao, Galdakaio/Spain
4Osatan, Hospital de Galdakao, Galdakaio/Spain
5Radiodiagnostic, Hospital Universitario de Canarias, San Cristobal de La Laguna/Spain
6Radiodiagnostic, Hospital Universitario Nuestra Settora de Canadaria, Santa Cruz de Tenerife/Spain
7Gastroenterology, Hospital Univers, de Canaries, Santa Cruz de Tenerife/Spain

Contact E-mail Address: Dr.alejandrodro@gmail.com

Introduction: Magnetic resonance enterography (MRE) is an imaging technique recommended to determine and confirm the extension and activity of Crohn’s disease (CD) in the small bowel and discriminate penetrating disease and complications. MRE diagnosis allows to optimize medical treatment in IBD patients.

Aims & Methods: The aim of this study is to evaluate the impact of MRE on medical decision making in IBD patients and determine the maintenance of this new treatment along the time. Consecutive MRE studies performed in patients with confirmed or suspected Crohn’s disease between January 2011 and August 2014 of 2015. Medical charts were retrospectively reviewed. MRE indication, demographic and IBD data were collected at time of MRE. Three months after MRE, medical decision (conservative approach with maintenance therapy, significant change in medical therapy or surgery) was assessed. After twelve months of follow-up, the treatment decided after MRE was reviewed.

Results: A total of 474 MRE studies were performed and indications for MRE were: assessment of small bowel involvement in 40 (8.3%) patients with indeter- minate colitis (IC) and 20 (4.2%) with suspected IBD patients or evaluation of severity and extension of the disease in 414 (87.5%) CD patients (232 F; mean age 37 ± 13 years). Only 4 patients with suspected-IBD (4/20.20%) had involvement of small bowel on MRE confirming the CD diagnosis. Twenty-one patients with IC (21/40.52%) changed the diagnosis to CD. In 199/474 (40.5%) MRE determined a change on medical decision and 140 (70.3%) patients modified maintenance treatment because of MRE findings. Of them, 127 (63.8%) underwent “set-up” treatment by prescribing immunosuppressants (IS) (n=45), anti-TNF agents (n=22), anti-TNF escalation (n=8), adding IS to anti-TNF agents (n=9) and changing anti-TNF agents (n=5). In addition, 13 (9.2%) patients underwent “top-down” therapy due to stop IS (n=7), anti-TNF (n=3) or anti-TNF de-escalation (n=3). Surgery was indicated in 62 (62/ 199;31.1%) patients after MRE. After one year of follow-up, the medical decision was maintained in 65.4% (288/440) of patients.

Conclusion: RE is a very helpful tool for the medical management of CD patients. MRE provides major information to optimize treatment in the long-term of patients with active CD.

Discussion of Interest: All authors have declared no conflicts of interest.

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P1652 COMPARISON OF CYTOKINES MRNA EXPRESSION IN INFLAMMATORY INTESTINAL MUCOSA OF PATIENTS WITH INFAMMATORY BOWEL DISEASE

Z. Lesková1, A. Krajevovica, K. Soltyś2, S. Stuchlík1, I. Sturdik1, T. Koller1, M. Huorua1, T. Hlavaty3
15th Department Of Internal Medicine, Sub Dept. Of Gastroenterology & Hepatology, University Faculty of Medicine, University Hospital Bratislava, Bratislava/Slovak Republic
2Department Of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava, Bratislava/Slovak Republic

Contact E-mail Address: leskova991@gmail.com

Introduction: The aetiology of Crohn’s disease (CD) and ulcerative colitis (UC) is not known. Recent data suggest a different cytokine profile between CD and UC.

Aims & Methods: The aim of this study was to analyse the expression of mRNA of proinflammatory, regulatory anti-inflammatory cytokines, chemokines and their ligands (IL-6, IL-8, IL-10, IL-23, TNFα, CCR1, CCR2, CCR5, CCL2, CCL5), and transcription factor FoxP3 in the inflamed and non-inflamed intestinal biopsy samples of mucosa in IBD patients. We performed a cross-sectional study. The cohort consisted of 87 consecutive IBD patients (47 CD and 40 UC) who underwent colonoscopy at the IBDC centre of University Hospital Bratislava. We biopsied inflamed and non-inflamed mucosa from ileum, colon and ileocolonic and ileocecal valve areas. In each specimen we measured IL-6, IL-8, IL-10, TNFα, CCR1, CCR2, CCR5, CCL2, CCL5, and FoxP3 mRNA levels.

Results: We found a different cytokine profile between CD and UC patients. The expression of cytokines in inflamed and non-inflamed mucosa separately for CD and UC patients.

Conclusion: This was a significant difference in the mRNA cytokine profiles between CD and UC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1654 THE RELATIONSHIP OF NEUTROPHILIC AND ENDOTHELIAL ACTIVITY MARKERS WITH THE DISEASE ACTIVITY IN INFAMMATORY BOWEL DISEASE

S. Boga1, A.R. Koksal1, H. Alkim1, A. A. Ozagari2, I. Sen1, M. Sahin1, C. Alkim1
1Gastroenterology, Sisli Hamdiye Etfal Education and Research Hospital, Istanbul/Turkey
2Pathology, Sisli Hamdiye Etfal Education and Research Hospital, Istanbul, Turkey

Contact E-mail Address: salihboga@yahoo.com

Introduction: Endothelial cell activation (ACTIVITY) and neutrophil activation (ACTIVATION) may be involved in development and progression of IBD. The relationship between these markers and disease activity, and their levels at different stages of IBD disease is not well known.

Aims & Methods: Eighty-six UC, 63 CD, 36 non-IBD (screening, irritable bowel syndrome) and 52 healthy controls who were followed up in Gastroenterology Department of Sisli Hamdiye Etfal Education and Research Hospital between years 2015–2016 were enrolled. Patients were evaluated by endoscopic (Rachmilewitz index for UC, simple endoscopic score for CD (SES-CD) for CD) clinical (colitis activity index (CCI)) for UC and CD activity index (CDAI) for CD), and pathologic activity scores and immunohistochemical staining.

Results: There were no differences between UC and CD patients in terms of serum endoglin and NGAL levels. NGAL and endoglin levels were significantly higher in endoscopically active UC group (n=59) (135.0 ± 28.9 ng/mL and 71.9 ± 13.6 pg/mL) compared to inactive UC (n=27) (119.7 ± 26.3 ng/mL and 476.9 ± 134.2 pg/mL), to non-IBD (115.8 ± 27.2 ng/mL and 460.6 ± 103.2 pg/mL) and to controls (16.7 ± 31.7 ng/mL and 457.2 ± 141.1 pg/mL). Although there were limited number of inactive CD patients (n=11), serum NGAL and endoglin levels were significantly higher in endoscopically active CD group (n=52) (135.0 ± 28.9 ng/mL and 555.6 ± 133.6 pg/mL) compared to inactive CD (115.2 ± 35.9 ng/mL and 458.7 ± 132.8 pg/mL), to non-IBD and to controls (Figure). Stricking and fluctuating CD groups had significantly higher endoglin levels compared to inactive CD (p < 0.001) and p = 0.001). NGAL levels were significantly increasing with the increasing disease extention in UC and CD (p = 0.012 and p < 0.001). While the clinical activity subgroups were evaluated, there were significant difference in UC and CD patients in terms of endoglin levels but not NGAL levels (Endoglin: r = 0.443, p = 0.001; NGAL: r = 0.274, p = 0.011; r = 0.409, p = 0.001). The immunohistochemical staining index of endoglin showed positive correlation with the immunohistochemical staining of vascular endothelial growth factor (VEGF) (UC r = 0.486, p < 0.001; CD r = 0.383, p = 0.002). The immunohistochemical staining index of endoglin in the colonic mucosa was correlated with the serum levels of endoglin in both UC and CD patients (UC r = 0.641, p < 0.001; CD r = 0.437, p < 0.001).

Conclusion: The present study highlights significant associations between endoglin and NGAL and IBD presence and activity, and demonstrates elevated serum and colonic endoglin levels in patients with active IBD as a novel finding.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1655 MONITORING OF LABORATORY PARAMETERS DURING THIOPURINE MAINTENANCE THERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: AN UNNECESSARY BURDEN?

J. E. Kreijne1, A. C. De Vries1, G. Bouma2, G. Dijkstra3, R. West4, M. J. Pierrick5, D. J. De Jong6, N. K. H. De Boer2, C. J. Van Der Woude1

1Gastroenterology And Hepatology, Erasmus University Medical Center, Rotterdam/Netherlands
2Gastroenterology And Hepatology, VU University Medical Center, Amsterdam/Netherlands
3Gastroenterology And Hepatology, University Medical Center Groningen, Groningen/Netherlands
4Gastroenterology, Sint Franciscus Gasthuis & Vliesl, Rotterdam/Netherlands
5Gastroenterology And Hepatology, Maastricht University Medical Center, Maastricht/Netherlands
6Gastroenterology And Hepatology, Radboud University Medical Center, Nijmegen/Netherlands

Contact E-mail Address: j.kreijne@erasmusmc.nl

Introduction: Although thiopurine-induced myelotoxicity and hepatotoxicity rarely occur during maintenance thiopurine therapy for inflammatory bowel disease (IBD), current guidelines advise laboratory monitoring every 3 months. This study was performed to assess the current laboratory monitoring regime in thiopurine maintenance therapy with regards to consequences of myelotoxicity and hepatotoxicity.

Aims & Methods: In this multicenter cohort study, we evaluated adult IBD patients with quiescent disease who were on maintenance thiopurine therapy between 2000–2016. Data collection started after 12 consecutive months of thiopurine treatment. The primary outcome was therapy adjustment, i.e. therapy cessation or dose reduction, due to myelotoxicity (leukocyte count <4.0 10^9/ l, platelet count <150 10^9/ l, and/or hepatotoxicity (alkaline phosphatase (AP), gamma-glutamyltransferase (y-GT), alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST) above the upper limit of normal (ULN)). The secondary outcomes were prevalence of myelotoxicity and hepatotoxicity and additional diagnostic procedures due to this toxicity.

Results: This study included 223 IBD patients (55% female, 64% with Crohn’s disease, mean age at diagnosis 27.2 years (SD 11.5)). Median follow-up was 3.2 years (IQR 1.9–4.7). The mean monitoring frequency was 3.3 assessments per treatment year (SD 1.8). Toxicity was observed in 44/2402 laboratory assessments (18.5%) in 120 patients. In total, 20 (0.8%) therapy adjustments were performed and 25 laboratory assessments (1.0%) led to additional diagnostic procedures. Myelotoxicity, observed in 244 assessments, led to 11 dose reductions and in 3 patients therapy was stopped. For hepatotoxicity, observed in 201 assessments, 2 dose reductions were performed and in 4 patients therapy was stopped. Ninety percent of observed toxicity were mild leukopenia (leukocyte count <3.0–4.0) or mild hepatotoxicity (<2 ULN), primarily in the first years of treatment. Dose adjustments were more often associated with moderate leukopenia (leukocyte count <3.0) than with mild leukopenia (p < 0.01). In total, 2 complications were recorded, 1 patient was hospitalized because of pancytopenia and received red blood cell transfusion, and 1 patient was treated for a CMV infection. Both patients presented with symptoms in clinic with preceding normal laboratory values. No mortality due to thiopurine-induced toxicity was observed.

Conclusion: Although mild toxicity is common during maintenance thiopurine therapy, adjustments based on laboratory assessments are rare. Therefore, a less intensive regime to monitor thiopurine-induced toxicity should be considered.

Disclosure of Interest: N.K.H. de Boer: Nanne de Boer has received a research and travel grant from Takeda outside the submitted work and served as principal investigator and consultant for TEVA.

C.J. van der Woude: CJW has served as a speaker and a consultant for Abbott, Abbvie, MSD and as a consultant for Shire and received funding from Janssen Biologics BV.

All other authors have declared no conflicts of interest.

P1656 ULTRASOUND ELASTICITY IMAGING PREDICTS THERAPEUTIC OUTCOMES IN PATIENTS WITH CROHN’S DISEASE TREATED WITH ANTI-TUMOR NECROSIS FACTOR ANTIBODIES


Aims & Methods: The aim of this explorative study was to assess the ability of UEI to predict therapeutic outcome in active CD patients treated with anti-TNF antibodies. 30 patients with ileal or ileocolonic CD (20 males, age 38.8 ± 14.5) initiating anti-TNF treatment were enrolled in the study. All patients completed the induction phase and underwent scheduled maintenance therapy with anti-TNF for 16.1 ± 8.5 months. Patients underwent bowel ultrasound and UEI at baseline and 14 weeks after initiation of anti-TNF therapy. Bowel wall stiffness at UEI was quantified by calculating the strain ratio (SR) between the bowel wall and the surrounding mesenteric tissue. Receiver operating characteristic curve analysis was used to identify the best SR cut off able to predict surgery/bowel obstruction.

Results: Five patients (16.6%) underwent surgery or hospitalization for bowel obstruction during the follow up. Frequency of CD-related surgeries or hospitalizations was significantly greater in patients with SR ≥ 2 at baseline than in patients with SR < 2 (p = 0.02). A significant reduction in bowel thickness was observed after 14 weeks of anti-TNF treatment (from 5.8 ± 1.5 mm to 5.1 ± 1.7 mm, p = 0.005), while SR values remained unaltered (1.5 vs 1.3, p = 0.5). A significant inverse correlation was observed between values of strain ratio at baseline and thickness variations following anti-TNF therapy (p = 0.007). Eight out of 30 patients (27%) achieved transmural healing at 14 weeks. Baseline SR was significantly lower in patients with transmural healing than in patients not achieving this endpoint (1.06 ± 0.16 vs 1.67 ± 0.17, p < 0.05).

Conclusion: This explorative study shows that UEI is able to predict therapeutic outcomes, including CD-related surgeries and transmural healing, in patients with Crohn’s disease treated with anti-TNF therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Disclosure of Interest: There were no significant superioriry of FICE, in dysplasia screening. Conclusion: There were no significant differences in the clinical characteristics of UC and FICE at the study, showing that FICE can be a useful tool for detecting diminutive polyps, and evaluating surface patterns without magnification. In clinical remission in patients with UC, FICE can have a role in the assessment of the severity of inflammation. For this purpose, more clinical trials are needed. Our study was the first to find that FICE in UC. Channels 2 and 9 are the best image channels of FICE in UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1658 EVALUATION OF COLONIC STOMA WITH FLEXIBLE SPECTRAL IMAGING COLOR ENHANCEMENT (FICE) IN PATIENTS WITH LONG TERM ULCERATIVE COLITIS DURING DYSPLASIA SCREENING
1Gastroenterology, Dokuz Eylül University Hospital, Izmir/Turkey

Contact E-mail Address: sedozdinc@yahoo.com

Introduction: Ulcerative colitis (UC) associated colorectal cancer risk (CRC) is related to the age, gender and duration of disease. The risk of CRC increases with the duration of the disease (1). Current guidelines recommend beginning the surveillance colonoscopy after eight to ten years of disease; random biopsies should be obtained from 4 quadrants of every 10 cm of colon (2). Digital subtraction colonography (DSC) can be used for evaluation of the mucosal and vascular structure. However, there were no significant differences between channels 2 and 9.

Conclusion: The association was found between CRP and dysbiosis in CD patients (P = 0.02), while for UC and symptomatic non-IBD patients. No association was found between FICE and dysplasia severity in UC patients, and in combination with elevated levels of FCal and/or FICE in UC patients. In the healthy controls, increasing dysplasia severity yielded higher abundance of FCol and or FICE in UC patients. Disease activity: No association was found between FICE and dysplasia screening.

Results: All controls had normal mucosa and vessel pattern. Dysplasia was suspected in 5% of UC patients. In normal controls, polyps and polyps images acquired by FICE, were evaluated by ten endoscopists and statistical analysis was performed. Results: A total of 18 patients, by evaluating 123 colonic segments, 1831 images were reviewed. Normal mucosa was found in 10 patients (55.55%). Dysplasia was found in 7 (38.88%) of the 18 patients. In the remaining patient with UC, FICE was performed to evaluate the mucosal pattern and vascular structure. However, there were no significant differences between channels 2 and 9.
P1660 SIMPLIFIED MR ENTEROCOLONOGRAPHY CLASSIFICATION BASED ON ENDOSCOPIC FINDINGS FOR ACTIVITY ASSESSMENT OF CROHN’S DISEASE
T. Fujii1, Y. Kitazume2, K. Takenaka1, M. Kinumara1, E. Saito1, K. Matsuoka1, M. Nagahori1, K. Ohtsuka1, M. Wanatabe1
1Gastroenterology And Hepatology,Tokyo Medical and Dental University,Tokyo/Japan
2Radiology, Tokyo Medical And Dental University, Tokyo/Japan

Introduction: Crohn’s disease (CD) is a lifelong inflammatory bowel disease. Evaluating the extent and severity of the disease is critical to determine appropriate therapeutic strategies in patients with Crohn’s disease. MR imaging is one of the most recommended technique for detection of large and small bowel lesions in Crohn’s disease. One of the main tasks of clinical activity is the assessment of its clinical ability of the 3-point MR enterocolonography (MREC) classification for assessing CD activity based on endoscopic findings.

Aims & Methods: A total of 120 patients (70 for derivation cohort and 50 for validation cohort) with CD was enrolled and underwent MREC and ileocolonoscopy or balloon-assisted enteroscopy (BAE). MREC was evaluated for each bowel segment: rectum, sigmoid, descending, transverse, ascending colon, terminal, proximal ileum, and jejunum, according to the consensus of two observers in the derivation phase, and independently by three observers in the validation phase, using a 5-point MREC classification based on a lexicon of MR findings. The conventional MR score, or MaRIA, was evaluated simultaneously. Areas under the receiver operating characteristic curves (AUCs) were obtained to assess the accuracy of discriminating deep ulcers. Inter-observer reproducibility was assessed using weighted Kappa coefficients.

Results: BAE was performed in 49 (70%) and 37 (74%) patients in the derivation and validation cohorts. The AUCs of MREC classification were 89.0% in the derivation phase and 88.5, 81.0, and 77.3% for three observers in the validation phase. The AUCs of MREC classification were statistically non-inferior to those of MaRIA (p < 0.001). The cross-validation accuracy was 81.9% in the derivation and 81.3% in the validation phase. The MREC classification showed good reproducibility.

Conclusion: For clinical use, radiological reporting systems should be simple and provide appropriate levels of accuracy and reproducibility. The 5-point MREC classification meets these requirements, and is useful for evaluating CD activity in the large and small bowel segments.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1661 RISK FACTORS FOR METABOLIC SYNDROME AND ITS COMPONENTS IN INFLAMMATORY BOWEL DISEASE
Department Of Medicine And Ageing Sciences And Center For Excellence On Ageing And Translational Medicine (cest-met), "G. D'Annunzio" University and Foundation, Chieti/Italy

Contact E-mail Address: efk78@gmail.com

Introduction: Metabolic syndrome (MetS) is a combination of biochemical and anthropometric disturbances and a recognized risk factor for cardiovascular disease. A higher prevalence of this condition has been previously reported in IBD patients, correlating to age as in the general population.

Aims & Methods: The aim of this study was to assess the effect of individual disease activity-related putative risk factors for MetS in a group of IBD patients, as well as any protective effects of treatment on MetS or its components. Consecutive IBD patients and age- and sex-matched controls were included as well as any protective effects of treatment on MetS or its components. MetS was diagnosed according to the “harmonized” 3 criteria among elevated waist circumference, anthropometric disturbances and a recognized risk factor for cardiovascular disease. The conventional MR score, or MaRIA, was evaluated simultaneously. Areas under the receiver operating characteristic curves (AUCs) were obtained to assess the accuracy of discriminating deep ulcers. Inter-observer reproducibility was assessed using weighted Kappa coefficients.

Results: 51 patients were included, 30 (58.8%) of them female, with a mean age 34.3 ± 14.5 years. Twelve patients (23.5%) required medical rescue therapy. No patient underwent colectomy. The presence of deep ulcers and a shorter evolution of the disease were associated with a lack of response to intravenous corticosteroids. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared to patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 ± 3.5 (g/dL), p = 0.005, respectively. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared to patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 ± 3.5 (g/dL), p = 0.005, respectively. The CRP/albumin ratio was also higher in unresponsive patients, medical rescue therapy with infliximab or cyclosporine has been instituted. The accuracy of CRP/albumin ratio in predicting non-response to intravenous corticosteroids was assessed by the area under the ROC curve (AUC).

Conclusion: A high value of CRP/albumin ratio was significantly associated with the likelihood of response to intravenous corticosteroids, at the 3rd day of treatment. This index may also better risk stratification on admission, of patients with acute severe ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1662 C-REACTIVE PROTEIN/ALBUMIN RATIO IS A GOOD PREDICTOR OF RESPONSE TO INTRAVENOUS CORTICOSTEROIDS IN ACUTE SEVERE ULCERATIVE COLITIS
S. Monteiro1, T. Cárden Gómez1, F. Díaz De Castro2, S. Leite3, M.J. Moreira3, J. Cotter2
1Gastroenterology, Hospital Senhora do Oliveira-Guimarães, Guimarães/Portugal
2Ivroc/3b’s, PT Government Associate Laboratory, Guimarães/Braga/Portugal

Contact E-mail Address: sara.s.monteiro@gmail.com

Introduction: Patients with acute severe ulcerative colitis (ASUC) have a high risk of rescue medical therapy or colectomy. Recently, the C-reactive protein (CRP)/albumin ratio at the 3rd day of treatment, with intravenous corticosteroids, has been shown to be a predictor of early colectomy in patients with ASUC.

Aims & Methods: To evaluate the accuracy of CRP/albumin ratio on admission, to predict response to intravenous corticosteroids in patients with ASUC. Retrospective assessment of systematically hospitalized patients with first episode of ASUC, who required intravenous corticosteroids. Demographic, clinical, laboratory and endoscopic variables were evaluated on admission. The response to intravenous corticosteroids (ASUC 3 was based on clinical cure. In unresponsive patients, rescue medical therapy with infliximab or cyclosporine has been instituted. The accuracy of CRP/albumin ratio in predicting non-response to intravenous corticosteroids was assessed by the area under the ROC curve (AUC).

Results: 51 patients were included, 30 (58.8%) of them female, with a mean age 34.3 ± 14.5 years. Twelve patients (23.5%) required medical rescue therapy. No patient underwent colectomy. The presence of deep ulcers and a shorter evolution of the disease were associated with a lack of response to intravenous corticosteroids. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared to patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 ± 3.5 (g/dL), p = 0.005, respectively. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared to patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 ± 3.5 (g/dL), p = 0.005, respectively. The CRP/albumin ratio was also higher in unresponsive patients, medical rescue therapy with infliximab or cyclosporine has been instituted. The accuracy of CRP/albumin ratio in predicting non-response to intravenous corticosteroids was assessed by the area under the ROC curve (AUC).

Conclusion: A high value of CRP/albumin ratio was significantly associated with the likelihood of response to intravenous corticosteroids, at the 3rd day of treatment. This index may also better risk stratification on admission, of patients with acute severe ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1663 INSUFFICIENT VARIATION OF MEDIUM CORPUSCULAR VOLUME (AMCV) IN INFLAMMATORY BOWEL DISEASE UNDER THIOPURINES PREDICTS DIFFICULTY IN ACHIEVING DEEP REMISSION IN CONCURRENT ANTI-TNF: THE OTHER SIDE OF THE MCV FLOW STUDY
J. Roseira1, H. Tavares De Sousa1, A. Marreiros2, P. Queirós2, A.M. Vaz3, T. Gago1, L. Contente3, H. Guerrero2
1Gastroenterology, Algarve Hospital Center, Portimão/Portugal
2Biomedical Science Department, University of the Algarve, Faro/Portugal
3Gastroenterology, Centro Hospitalar do Algarve, Faro/Portugal

Contact E-mail Address: jsr_roseira@hotmail.com

Introduction: The MCV flow study confirmed the association of AMCV ≥ 7fl at week 26-28 of Azathioprine monotherapy (mAza) with favourable outcomes in a homogeneous IBD population.

Aims & Methods: For this work, our aims were to evaluate the need for step-up therapy in those under mAza with AMCV < 7 and to identify predictors of combined deep remission outcomes (DeepRem), at the same timepoint, for the patients who subsequently began combination therapy with Anti-TNF (AzaExperienced + Anti-TNF). Evaluation of patients under mAza with AMCV < 7 at key timepoint week 26-28 treatment, included for The MCV flow study. Demographic characterization and severity of pre-treatment disease was evaluated (Montreal classification, previous surgery status, Mayo score and Crohn’s disease activity index [CDAI]). AMCV’s association with DeepRem (Steroid-free clinical remission (CDAI ≤ 150, Mayo ≤ 2) + mucosal healing (MH) + C-reactive protein (CRP) < 10) and need for biological therapy at the end of week 26 of DeepRem in an independent predictor in patients who subsequently started combination therapy. Statistical: Chi-square test; Binary logistic regression.

Results: A total of 106 IBD patients were evaluated [56.6% men, mean age 39 ± 15.2 years, 58 ad, 14% operated] at week 26-28 of mAza. Identified strong association between an average AMCV ≤ 7 (n = 70; 66%) with DeepRem (p < 0.05), while a ΔAMCV ≤ 7 was associated with biological therapy need (p < 0.05). 45 patients were later started with Anti-TNF therapy
(Aza + Infliximab 46.7%; Aza + Adalimumab 53.3%) and only 44% achieved DeepRem at the key-timepoint. A Cronh’s A3L2B3 + phenotype (p = 0.045), steroid therapy in the last year (p = 0.009) and ΔVGM < 7 (p = 0.036) were identified as the variables that best explained the difficulty reaching DeepRem.

**Conclusion:** This study confirms the prognostic value of ΔVGM in our popula- tion. ΔVGM ≤ 7 was associated with DeepRem and ΔVGM < 7 was found to be associated with biological therapy need. However, even after starting Anti-TNF, ΔVGM < 7 was identified as a predictor of the difficulty reaching DeepRem.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1664 **

**FCAL PROTECTIN PREDICTS SHORT-TERM RELAPSE IN INFLAMMATORY BOWEL DISEASE PATIENTS IN DEEP REMISSION**

R. Nakov1, V. Nakov1, V. Gerova1, L. Tankova1, T. Kundurzhiev2, R. Vladimirov1

1Gastroenterology, Clinic of Gastroenterology, 2Tsartsa Joanna - ISUL University Hospital, Medical University - Sofia, Sofia/Bulgaria

**Introduction:** Most inflammatory bowel disease (IBD) patients with clinically successful treatment seem to have some degree of residual mucosal inflammation. Elevated fecal calprotectin (FC) concentrations can be found despite clinical remission and may indicate relapse risk in asymptomatic IBD.

**Aims & Methods:** The aim of this prospective study was to evaluate whether elevated FC values can predict short-term clinical and/or endoscopic relapse. We enrolled 60 IBD patients (30 ulcerative colitis - UC, 30 Cronh’s disease - CD) who were in clinical and endoscopic remission. FC was measured using a quantitative immunochromatographic point-of-care test (Quantum Blue® Calprotectin, Bühmann Laboratories AG, Switzerland). Patients were followed-up by FC examination and clinical activity assessment every second month until relapse or up to 24 months. Ileocolonoscopy was performed at inclusion and at the time of clinical remission.

**Results:** During the follow-up 36 (60%) relapsed and 24 (40%) remained in remission. The mean time to relapse in all patients was 13.9 (range 2-20) months. Surprisingly, mean FC levels was seen 2 months (p < 0.001) before endoscopic relapse. ROC analysis indicated that a cut-off of 90 μg/g (OR 24, 95% CI = 5-117, p < 0.001) in mean FC values 2 months before relapse could predict relapse in UC patients with 83.3% sensitivity and 82.9% specificity. For CD patients a cut-off of 155 μg/g (OR 193, 95% CI = 22-1682, p < 0.001) could predict relapse within two months with 91.7% sensitivity and 94.6% specificity. Constantly normal FC values during the follow-up were predictive for deep remission.

**Conclusion:** It is seen that FC elevates two months before clinical and/or endoscopic relapse. FC is a suitable marker for predicting relapse and building a follow-up strategy for IBD patients in clinical practice.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1665 **

**GLYCEMIC CONTROL AND INSULIN RESISTANCE IN PATIENT WITH INFLAMMATORY BOWEL DISEASE - PRELIMINARY RESULTS FROM THE POLIBUD STUDY**

R. Filip1, J. Sztembisa, P. Kielå1, A. Rybak1

1Gastroenterology, Clinic of Gastroenterology, 2Department Of Social Medicine And Health Management, Section Of Biostatistical, Medical University, Sofia, Sofia/Bulgaria

**Introduction:** Hyperglycemia associated with critical illness - also called stress hyperglycemia - has high prevalence of severe ill patients. It is connected with many factors, including increased cortisol level, catecholamines uptake, glucagon production, gluconeogenesis, insulin resistance and inflammatory markers. It is not considered as an adaptive response anymore, but as an altered hyperglycemia is associated with poor outcomes and significantly increases mortality rates. That is why stress hyperglycemia and insulin resistance may be a marker of severe illness.

**Aims & Methods:** We analysed the data (glycemia, insulin level, HOMA IR level, C-reactive protein level, HbA1C) of 62 aged patients and older (20 women and 42 men, 32.26 +/- 13.8 years of age) with IBD hospitalized in our clinic from 2016 to 2017. 16 patient were with Ulcerative Colitis (UC) and 48 patients with Crohn’s Disease.

**Conclusion:** The analysis of the patients with Ulcerative Colitis showed that only one of the patients had hyperglycemia within the range of 140-200 mg/ml (the patient had type 2 DM) but interestingly 37.5% of the patients had fasting hyperglycemia over 100 mg. Over 85% of these patient were submitted to our clinic with the exacerbation of the disease and had abnormal level of C-reactive protein, cal-protectin (>1800) and fasting insulin level over 10 IU/ml. The analysis of the group of patients with Cronh’s Disease showed different results which may be connected with different metabolic profile of these patients. Most of the patients with fasting hyperglycemia (only 12.5%) had elevated C-reactive protein level but not fasting insulin level - it was within normal range. The highest level of the fasting insulin (over 10 IU/ml) in this group was observed in 3 patients who had to undergo immediate surgical treatment - two of them because of the bowel obstruction and one of them because of the perforation.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1666 **

**THE ROLE OF MR IMAGING IN ASSESSMENT OF LENMANN INDEX IN THE COURSE OF CROHN’S DISEASE**

J.M. Plenkowska, O. Kozak, T. Nowicki, E. Szurowska

**Introduction:** Crohn’s disease (CD) is a progressive, chronic and destructive inflammatory bowel process which, during its course, can lead to complications such as strictures and penetrating lesions (fistulas and abscesses), which may consequently require operative treatment. In some patients, bowel damage is present at the moment of diagnosis. The aim of the study is to assess the initial Lennam Index (LI), which comprehensively evaluates the entire gastrointestinal tract damage in patients with newly diagnosed Crohn’s disease.

**Aims & Methods:** In 209 patients with clinical suspicions of Crohn’s disease MR imaging with fast spin-echo T2 and contrast-enhanced T1 sequences was performed. In 151 patients with confirmed active/chronic CD the Lennam Index has been calculated on the basis of radiological and clinical information for initial assessment of cumulative digestive tissue damage. To create the Lennam Index the gastrointestinal tract was divided into 4 organs: upper digestive tract, small bowel, colon, rectum and anus. Each organ was divided into segments (3 for the upper digestive tract, 6 for the colon/rectum and 1 for anus). Strictures and penetrating lesions were assessed at each segment on 4-degree scale (0–3) according to the severity of lesions.

**Results:** Based on the findings of the initial radiological examination, active inflammation process was found in 76 patients and chronic process in 75 patients. The baseline study demonstrated such complications as strictures in 14 patients, fistulas in 15 and abscesses in 4 patients. For all patients the LI was calculated. The obtained values were within the range from 0 to 22.

**Conclusion:** Over the years, the progression of Crohn’s disease leads to an increase in the value of Lennam Index, therefore, it seems that the evaluation of the first, baseline stage is high in following control MR examinations will allow for a more complete assessment of patients in terms of progressive bowel damage and modification of the therapeutic process.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1667 **

**OPTICAL CHARACTERIZATION OF LESIONS IN IBD COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS**

R. Lord1, N. Burr2, N. Mohammed3, V. Subramanian3

1Gastroenterology, Endoscopy Research fellow/Gastroenterology registrar, research, Leeds/United Kingdom
2Gastroenterology, Leeds Institute for Biomedical and Clinical Sciences, Leeds/ United Kingdom
3Gastroenterology, Leeds Teaching Hospitals NHS Trust, Leeds/United Kingdom

**Introduction:** Optical imaging is being increasingly advocated for characterization of polyps during colonoscopy. The accuracy of these techniques during surveil- lance colonoscopy in colon inflammatory bowel disease (IBD-C) is unclear and with variable results reported. We aimed to perform a systematic review and meta-analysis of the diagnostic accuracy of optical imaging techniques including blue light imaging and virtual colonoscopy, magnification endoscopy and confocal laser endomicroscopy.

**Aims & Methods:** We searched Medline and Embase for relevant papers. Full articles or abstracts were eligible when characterization performance of dye- based colonoscopy (DCE), virtual colonoscopy (VCV) (narrow-band imaging [NBI], i-scan, Fujinon intelligent colonoscopy [FICE]), magnification endoscopy and confocal laser endomicroscopy (CLE) had been com- pared with histopathology, as the reference standard. Enough information had to be gathered to permit data extraction and meta-analysis.

**References**

Results: Our search strategy identified 172 studies of which only 20 met the inclusion criteria. The pooled results are outlined in the table.

P1669 ENDOSCOPIC FINDINGS AND COLONOSCOPIC PERFORATION IN MICROSCOPIC COLITIS; A SYSTEMATIC REVIEW OF THE LITERATURE

1Department Of Gastroenterology, Pomeranian Medical University, Szczecin/Poland
2Department Of Biochemistry And Human Nutrition, Pomeranian Medical University, Szczecin/Poland
3The Royal Infirmary of Edinburgh, Edinburgh/United Kingdom

Contact E-mail Address: dianea.yung@gmail.com

Introduction: Microscopic colitis (MC) is a clinical syndrome of severe watery diarrhoea with few or no endoscopic abnormalities. The incidence of MC is reportedly similar to that of other inflammatory bowel diseases. The need for histological confirmation of MC frequently guides reimbursement health policies. With the advent of high-definition (HD) colonoscopes, the incidence of distinct endoscopic findings reported in MC has risen. This has the potential to improve diagnosis times, increase cost-effectiveness of MC management and diminish the workload and costs of busy modern endoscopy units.

Aims & Methods: Publications on distinct endoscopic findings in MC available until 31st March 2017 were searched systematically (electronic and manual) in PubMed. The following search terms/descriptors were used: collagenous colitis(CC) OR lymphocytic colitis(LC) AND endoscopy, colonoscopy findings, findings, findings, findings.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: It is well recognized that patients with inflammatory bowel disease (IBD) are at risk for nonalcoholic fatty liver disease (NAFLD). Our aim was to evaluate the prevalence and to quantify hepatic steatosis in IBD patients by using the controlled attenuation parameter (CAP).

Aims & Methods: We prospectively recruited all IBD patients presenting for a disease flare or follow-up visit in our clinic, during a 18 month period. Patients were considered to have initial clinical criteria more than 20 g/day and those with coexisting viral hepatitis were excluded from analysis. Clinical characteristics and laboratory data were recorded. Hepatic steatosis was evaluated by conventional ultrasound, hepatic steatosis index (HIS) and transient elastography with CAP (Fibroscan, Echosens, Paris). Significant steatosis (S ≥ 1) was defined for a CAP value over 236 [1], and the cut-off of HSI for detecting NAFLD was set at ≥ 36 [2].

Results: Altogether 62 IBD patients (35 ulcerative colitis, UC and 27 Crohn’s disease, CD), mean age 45 ± 15 years, 50% female, were included in the analysis. The two groups (UC, CD) were similar regarding disease activity (remission/flare-48.5%14.4% in the UC group, 55.6%44.4% in the CD group), BMI (24.1 and 24.3), and HBD (mild: 21 and 21.1), and mean vitamin gen 498 and 513 mg/dl). UC patients had higher mean cholesterol values (205.9 vs. 196.4 mg/dl) and 11% of them were diabetic (compared to none in the CD group). Mean CAP was higher in CD compared to UC–246 vs. 225 dB/m, while UC patients had higher mean concentration (205.9 vs. 176.4 mg/dl) and 11% of them were diabetic (compared to none in the CD group). UC patients had higher mean cholesterol values (205.9 vs. 196.4 mg/dl) and 11% of them were diabetic (compared to none in the CD group).

Conclusion: In our cohort, about one in three IBD patients had fatty liver disease, as quantified by CAP. Diagnostic performance of CAP was better than conventional ultrasound and HSI in detecting fatty liver in IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1671 INTESINAL MICROBIOTA BIOMARKERS AS A NEW TOOL TO SUPPORT IRREPTIBLE BOWEL SYNDROME DIAGNOSTICS

J. Amoedo,1 L. Torrelbal,2 S. Ramíó-Pujol,1 L. Oliver,1 A. Bals,1 M. Serrano,1 M. Malagón,2 D. Busquets,2 P. Gilabert,4 J. Guardiola4, M. Serra-Pages,1 J. Garcia-Gil1, X. Aldeguer1

Contact E-mail Address: iulianamech.89@gmail.com

Introduction: Irritable Bowel Syndrome (IBS) is a common gastrointestinal disorder that affects around 11% of global population. Despite the high prevalence of IBS, the cause of this disorder remains unknown and the criteria used to diagnose IBS are still unclear. In recent years, disturbances in the intestinal microbiota have been associated to the pathophysiology of IBS. Recently, two accurate Faecalibacterium prausnitzii (Fpra) and Escherichia coli (Eco) have been shown to discriminate between Inflammatory Bowel disease (IBD) and Healthy subjects (H). Therefore, the purpose of this study was to verify the capability of Fpra and Eco abundances to distinguish among healthy subjects (H), IBS, and IBD patients, in order to create a non-invasive system of diagnostic support for IBS patients.

Aims & Methods: A cohort consisting of 33 H and 14 IBS was enrolled. IBS patients were separated by subtypes: IBS with constipation (C-IBS), IBS with diarrhea (D-IBS) and alternating IBS (A-IBS). Rome IV criteria were used to diagnose IBS patients. Moreover, 29 ulcerative colitis (UC) and 15 Crohn’s disease (CD) patients were also included. All subjects were recruited by the Gastroenterology Services of the Hospital Universitari Dr. Josep Trueta (Girona, Spain) and Hospital Universitari de Bellvitge (Hospitalitat del Llobregat, Spain). Fpra total and Eco abundances were quantified by qPCR.

Results: We found lower abundance values of Fpra in IBS patients when compared with H (P=0.005). In contrast, Eco abundance was higher in IBS patients, although the differences observed were not significant (P=0.221). When comparing among subtypes of IBS (C-IBS, D-IBS, and A-IBS) no significant differences were observed, although Fpra abundance was lower in C-IBS. We also used Fpra in combination with Eco as a complementary indicator of dysbiosis (Ratio Fpra/Eco). This ratio allows a good discrimination between H and IBS (FPR=0.04). When it comes to discrimination between IBS and IBD patients, significant differences were observed in Fpra/Eco ratio between UC and IBS patients (P=0.008), but not between IBS and CD patients (P=0.775). Concerning disorders different to IBS, significant differences were also observed between healthy and CD (P > 0.001), between H and UC (P = 0.037), and between CD and UC (P = 0.027).

Conclusion: Fpra abundance is a good biomarker to discriminate between healthy subjects and IBS patients. The use of Fpra/Eco ratio allows to distinguish IBS from H and UC patients. In contrast, none of the used biomarkers was able to differentiate IBS and CD patients. These results show that IBS and CD patients share similar dysbiosis parameters opening the need of further study to stabilised any eventual pathogenic link.

Disclosure of Interest: All authors have declared no conflicts of interest.
In patients with inflammatory bowel diseases (IBDs), comprising Crohn’s disease (CD) and Ulcerative colitis (UC), a patient-tailored therapy is an urgent need that requires accurate monitoring of the intestinal disease activity. We demonstrated recently, that the expression of microRNA (miR)-320a follows the disease activity in murine colitis models1. In this prospective study we evaluated the potential of miR-320a as a biomarker to monitor disease activity in IBD patients as well as its potential to distinguish UC/CD from infectious colitis.

Aims & Methods: The miR-320a was measured by qRT-PCR analysis in peripheral blood samples from 36 CD and 34 UC patients with acute flare of disease (n = 51) and in remission (n = 37) as well as in healthy control patients (n = 20) and in patients with infectious colitis (n = 9). Disease activity was assessed clinically applying the Crohn's disease activity index (CDAI) and the partial Mayo score, respectively, to assess UC patients as well as the simple endoscopic score Crohn’s disease (SES-CD) and the endoscopic Mayo score (eMayo) to score endoscopic disease activity.

Results: Both in CD and in UC patients, miR-320a expression in remission was significantly increased as compared to healthy controls (49 ± 8.7 ± 17 vs. 17 ± 3; both p < 0.001) but distinctly lower as in in CD/UC patients with acute flare (1718 ± 488; p = 0.006; 513 ± 107, p = 0.001). In UC patients with clinical acute flare (CDAI > 220), miR-320a expression level were significantly increased as compared to CD patients in clinical remission (CDAI < 15; 267 ± 6.37 vs. 57 ± 0.9; p < 0.001) and showed a strong correlation with endoscopic disease activity (r = 0.70). Similarly, in UC patients, miR-320a also revealed a significant increase in patients with low (pMayo 3–4), moderate (pMayo 5–6) and severe clinical disease activity (pMayo > 6) as compared to UC patients in remission (259 ± 47; 281 ± 26; 1090.2 ± 24 vs.76 ± 13, all p < 0.001). Furthermore, we detected a significantly enhanced miR-320a expression with increasing endoscopic disease activity (eMayo 1: 99 ± 14 vs. eMayo 2: 301 ± 30, p = 0.006; eMayo 3: 775 ± 245; p = 0.02). Most importantly, miR-320a expression in CD and UC patients with acute flare of disease was significantly increased as compared to patients with infectious colitis (53 ± 12, p < 0.001).

Conclusion: The miR-320a expression in peripheral blood from IBD patients follows the disease activity and may distinguish between CD and infectious colitis. Therefore, miR-320a might serve as biomarker to non-invasively assess the disease activity in IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1675 COST EFFECTIVENESS OF IBDOC FAECAL CALPROTECTIN AS A SURROGATE MARKER OF MUCOSAL HEALING POST INDUCTION OF BIOLOGICAL AGENTS IN INFLAMMATORY BOWEL DISEASE

Dept. Of Gastroenterology, Mercy University Hospital, Cork/Ireland

Contact E-mail Address: jafaralsafi@hotmail.com

Introduction: Traditionally in our unit all IBD patients started on anti-TNF therapy are followed up at 3 months at the clinic and we aim to do a colonoscopy at 6 months to assess for mucosal healing. Recently we have started using a relatively new technology, called IBDoc, which allows testing the faecal calprotectin at home using a smartphone application and the results are automatically updated in our database.

Aims & Methods: We aimed to evaluate the cost effectiveness of using IBDoc faecal calprotectin post induction of biological agents. The data was collected retrospectively from our IBDoc data base. All patients that were commenced on anti-TNF therapy for IBD and trained in using IBDoc at home were included. IBDoc faecal calprotectin was tested at 3 and 6 month post induction of biological agents.

Results: Total number included in the study was 131 patients. 40% had normal calprotectin at 3 month saving 53 follow up clinic visits (cost of clinical visit 128 euro), and 75% had a normal faecal calprotectin at 6 months saving 40 routine colonoscopy (cost of colonoscopy 337 euro). 78 patients had a raised faecal calprotectin at 3 month, of which 28% had a normal faecal calprotectin at 6 months saving 22 follow-up colonoscopy. In total 53 clinical visits and 62 colonoscopies were avoided.

Conclusion: This study demonstrate a significant cost effectiveness of using IBDoc faecal calprotectin post induction of anti-TNF therapy, as well as reducing the waiting time for both clinic visits and colonoscopies.

Disclosure of Interest: G. El-Safi: Abbvie
All other authors have declared no conflicts of interest.
Contact E-mail Address: ana.echarri.piudo@sergas.es

Introduction: The intraclass correlation coefficients were 0.81 (p = 0.001) and 0.79 (p = 0.01) respectively. Those measured by established ELISA (Promonitor level: mean 4.67, median 4.37; Quantum Blue level: mean 4.57, median 4.17) showed a good correlation (r2 = 0.56). A Bland-Altman analysis showed a bias of 1.88% confirming the overall excellent correlation of the two methods. The results for each method were stratified according to a commonly accepted therapeutic range (3–18 μg/ml). The Quantum Blue assay had a high (r2 = 0.89) and significant (p < 0.001) correlation with the Quantum Blue® assay. A Bland-Altman analysis showed a bias of 1.88% confirming the overall excellent correlation of the two methods. The results for each method were stratified according to a commonly accepted therapeutic range (3–7 μg/ml lower: 3 and higher than 7) with a high agreement. We estimated a simplified score to convert the “point-of-care” level into “Promonitor” level and facilitate dose management: “Nivel de Promonitor = 0.793 + 0.615*Nivel QB”.

Results: A total of 135 serum samples from patients with CD and UC. IFX concentration in serum samples were determined using a well established IFX-specific ELISA assay (Promonitor®) and the test assay Quantum Blue®. According to the manufacturer, the lower and upper limits of quantification are: In the Quantum Blue assay 0.035 μg/ml and 20 μg/ml respectively. In the Promonitor assay 0.035 μg/ml and 14 μg/ml respectively. All statistics were carried out using the statistical programs IBM SPSS statistics 21 and Epidat version 4.2.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1679 THE ADDITION OF AN IMMUNOSUPPRESSANT IS AN EFFECTIVE OPTIMIZATION STRATEGY AFTER LOSS OF RESPONSE TO ANTI-TNF ALPHA MONOTHERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: A TWO-YEAR STUDY
F.S. Macaluso1, C. Sapienza2, M. Ventimiglia1, S. Renna1, G. Rizzuto1, R. Orlando1, M. Di Pisa1, M. Alfonsi1, E. Orlando1, M. Cottone1, A. Orlando1
1Division of Internal Medicine, “Villa Sofia-Cervello” Hospital, Palermo/Italy
2Gastroenterology and Endoscopy Unit, “Villa Sofia-Cervello” Hospital, Italy, Palermo/Italy
Contact E-mail Address: fsmacaluso@gmail.com

Introduction: In patients with inflammatory bowel disease (IBD) the addition of an immunosuppressant (IM) after loss of response to anti-TNF alpha monother-apy is regarded as an emerging strategy of therapeutic optimization. However, few clinical data have been reported to date.

Aims & Methods: The aim of this study was to evaluate efficacy and tolerability of the “add-on” combination therapy in patients with IBD. All consecutive patients with loss of response to anti-TNF alpha monotherapy despite an intensive dose optimization who added an IM from October 2014 to October 2016 were entered in a prospectively maintained database. The steroid-free remission and the clinical response, this latter defined as a clinical improvement (reduction of Harvey-Bradshaw Index ≥ 3) for Crohn’s disease and of Mayo Partial Score ≥ 2 for ulcerative colitis compared with baseline) with a concomitant reduction of steroid dosage compared with baseline and discontinuation within twelve weeks, were set as clinical endpoints.

Results: Among 630 patients treated with biologics during the study period, 46 (33 Crohn’s disease and 13 ulcerative colitis) were included (table 1). A total of 31 patients (67.4%) were treated with an intravenous anti-TNFα (infliximab, as originator product or biosimilar), while 15 (32.6%) with a subcutaneous anti-TNFα agent (10 adalimumab and 5 golimumab). The mean doses of thiopurines used in combination therapy were below those regarded as therapeutic in IBD, methotrexate was mostly employed at a dose of 15mg/week, and all patients treated with mycophenolate mofetil were able to tolerate the target dose of 1500mg/day. The mean duration of follow-up was 12.8±7.3 months. Twenty-one patients (45.7%) remained on combination therapy at the end of follow-up: 15 (32.6%) maintained a steroid-free remission, and 6 patients (13.0%) achieved a clinical response. In patients who experienced a treatment success, median value of C-reactive protein decreased from the baseline to the end of follow-up (13.2 vs. 3.0, p = 0.01; normal values < 5 mg/L). Adverse events leading to treatment discontinuation were reported in 8 out of 46 patients (17.4%).
Introduction: Many studies have demonstrated that in patients with inflammatory bowel disease (IBD) and particularly patients with Crohn's disease (CD) an increased frequency of Extra-Intestinal Manifestations (EIMs) is observed. The presence of EIMs is associated with a more severe degree of luminal disease and lower response to conventional therapy (i.e. immunosuppressants). Drug trough levels are associated with biological drug response, while the role of Anti-dru Agent Antibodies (AAA) is still debated. Moreover, the predicting factors associated with AAA development have not been thoroughly studied yet. To the best of our knowledge, there are no studies correlating the presence of EIM and AAA development.

Aims & Methods: The aim of our prospective study was to identify an association between the presence of EIM and the development of AAA in CD patients treated with biological therapy. We prospectively enrolled 60 CD patients (32 males, mean age 46y, range 21–72) treated either with adalimumab (ADA n=39, 66.6%; IFX n=21, 33.4%) with a median follow-up of 80 (range 14–206) weeks. Blood samples were drawn at standardized time points assessed using an homogenous mobility shift assay (HMSA; Prometheus Lab, San Diego, United States).

Results: ADA were detected in 27 (45.5%) patients and IFX in 15 (45.5%) patients. It has proved to be more frequent in subjects treated with IFX rather than those in therapy with ADA (n=14, 66.6% vs 13, 33.3%, P=0.017). EIM were observed in 26 (43.3%) patients, without any significant difference between ADA and IFX patients (n=17, 51.5% vs n=9, 42.9%, P=0.1). We found that ADA treated patients with EIM were more likely to develop AAA (n=9, 52.9% versus n=4, 18.2%, P=0.039) while no statistically significant association between EIM and AAA development was observed in IFX treated patients (n=5, 55.5% versus n=9, 75%, P=0.64).

Conclusion: We found that ADA-treated patients with EIM tend to develop more frequently AAA. Assuming that the presence of AAA reduces the effectiveness of biological therapy, the presence of EIM may be considered a predictive factor for loss of response to biological therapy with anti-tumor necrosis factor alpha drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.
C. Painchart

TREATMENT IN CROHN’S DISEASE PATIENTS ARE NOT CORRELATED TO RESPONSE TO USTEKINUMAB

P1683 TROUBLE LEVELS AND ANTIBODIES TO USTEKINUMAB ARE NOT CORRELATED TO RESPONSE TO USTEKINUMAB TREATMENT IN CROHN'S DISEASE PATIENTS

P1684 ECONOMIC IMPLICATIONS IN INFLAMMATORY BOWEL DISEASES: RESULTS FROM A RETROSPECTIVE ANALYSIS IN AN ITALIAN CENTRE

A. Varela1, A. Tuzina2, R. Vassallo1, A. Bella2, S. Bollini2, B. Pariente1

1Gastroenterology, CHRU Lille, Université Lille 1, Lille/France
2Immunology laboratory, CHRU Lille, Université Lille 1, Lille/France
3Gastroenterology department, CHR Roubaix, Roubaix/France

Contact E-mail Address: claire.painchart@laposte.net

Introduction: Usteukinumab (UST) has been shown to be effective in refractory Crohn’s disease (CD) in phase III trials. The aim of the present study was to prospectively evaluate the association between UST trough levels and anti-ustekinumab antibodies, with the response and induction to maintenance UST treatment in CD patients.

Aims & Methods: We performed a prospective study including all CD patients refractory to anti-TNF who received subcutaneous UST from September 2015 to November 2016 in the tertiary French referral center of Gastroenterology in CHRU Lille hospital in Lille. During induction patients received 90mg of SC UST at week 0, 4 and 12. During the maintenance phase patients received 90mg of SC UST every 8 weeks that could be optimized by shortening injection interval to every 4 weeks in case of loss of response. Clinical response was defined by decreased Harvey Bradshaw Index (HBI) by 3 points, clinical remission by HBI < 5, loss of response by new increase of HBI. UST trough levels and antibodies were dosed at 12 weeks, and at a single time-point for patients who had received more than 3 months of UST. The results of dosage were obtained by enzyme-Linked ImmunoSorbent Assay technique. We evaluated the correlation between clinical and biological response and remission to UST, and UST through levels and antibodies concentrations. Differences between independent groups were traced with the use of Mann-Whitney exact test.

Results: Forty-eight patients with active disease received at least three UST injections. At time of ustekinumab introduction 77% of patients received concomitant immunosuppressant and 42% received corticosteroids. At the end of the induction phase (week 12) clinical response was observed in 57% patients. There was no significant difference in mean UST trough levels in patients who responded to UST induction (median 1160 ng/ml; IQR: 603–1644) as compared to patients who did not respond (median 1556 ng/ml; IQR: 494–2758, p = 0.24). Forty-three (90%) patients received at least 4 injections of UST, with 12 patients who were optimized at the time of dosages. Clinical response was observed in 30/43 (70%) patients. Median UST concentration in clinical responder was 1359 ng/ml (IQR: 554–2086) and 2392 ng/ml in non-responder (IQR: 1496–3494), with no significant difference between the two groups of patients (p = 0.20). UST antibodies were undetectable for the 48 patients.

Conclusion: We confirmed that UST treatment is effective in the majority of CD patients refractory to anti-TNF agents. Median trough levels to UST are not correlated to response and remission to UST induction and maintenance treatment, with no antibodies developed against UST.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1685 THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD): PRELIMINARY DATA ON EFFICACY OF BIOLOGICAL THERAPY


1Division of Internal Medicine, “Villa Sofia-Cervello” Hospital, Palermo/Italy
2Inflammatory Bowel Disease Unit, A.O.U. Policlinico “G. Martino”, Messina, Italy., Messina/Italy
3IBD Unit, A.O. “Cannizzaro”, Catania, Italy, Catania/Italy
4Gastroenterology And Hepatology Unit, A.O.U. Policlinico “G. Giaccone”, Palermo University, Palermo/Italy
5Gastroenterology Unit, ARNAS “Garibaldi”, Catania, Italy
6Internal Medicine Unit, A.O.U. Policlinico “Vittorio Emanuele”, Catania, Italy, Catania/Italy
7Pediatric And Endoscopy Unit, ARNAS Circolo Di Cristina-Benferrati Hospital, Palermo/Italy
8Gastroenterology Unit, A.O. “Gazzarri”, Vittoria, Italy, Vittoria/Italy
9A.O. Elia di Calabresi, P.O. Rainmondi U.O.C. di Gastroenterologia, Catanzaro/Italy
10Gastroenterology Unit, A.O. “Santa Maria e S. Venera”, Acireale, Italy., Acireale/Italy
11Surgery Unit, A.O. “UMBerto I”, Siracusa, Italy, Siracusa/Italy
12Internal Medicine, Giovanni Paolo II Hospital, Agrigento/Italy
13Gastroenterology and Endoscopy Unit, A.O. “S. Antonio Abate”, Trapani, Italy, Trapani/Italy
14Gastroenterology Unit, A.O.O.R. “Paparo Piemonte”, Messina, Italy, Messina/Italy
15Gastroenterology, Ospedale “Buccheri la Ferla” Fatebenefratelli, Palermo/Italy
16Pediatric Gastroenterology And Endoscopy, Pediatric Department, Pediatric Department, Messina/Italy
17Pediatric Department, Gastroenterology Unit, University of Messina, Messina, Italy
18Pediatric Unit, A.O.O.R. “Villa Sofia-Cervello”, Palermo, Italy, Palermo/Italy
19Pediatric Unit, A.O.U. Policlinico “G. Giaccone”, Palermo, Italy, Palermo/Italy
20IBD Unit, Azienda Ospedaliera per l’Emergenza Cannizzaro, Catania, Italy

Contact E-mail Address: ambrogiorlando@gmail.com

Introduction: The monitoring of appropriateness, costs, and clinical outcomes of biological therapy in inflammatory bowel disease (IBD) is a relevant need.

Aims & Methods: We aimed to evaluate all these issues in Sicily through a web-based network of all prescribing centers. The Sicilian Network for Inflammatory Bowel Disease (SN-IBD) is composed by a super Hub coordinator centre and five Hub plus ten Spoke centres. From January 2013, all IBD patients starting a biological agent (incident cases) or already on treatment (prevailing cases) were entered in a web based software. Herein we report data of incident cases about the efficacy of biological therapy after twelve weeks and one year of treatment.

As clinical endpoint, we set remission (corresponding to a Mayo Partial Score ≤2 for CD, and to a Harvey-Bradshaw Index ≤5 for UC), and response (reduction of Harvey-Bradshaw Index ≥5 for CD and Mayo Partial Score ≥5 for UC compared with baseline).

Results: From January 2013 to January 2017, 1578 patients were included. Incident cases were 1151 (808 Crohn’s disease [CD], 333 ulcerative colitis [UC]), and 427 prevalent cases. A total of 1407 treatments were reported. In one line of therapy, a total of 1407 treatments were reported. CD: there was a higher proportion of patients naïve to biological therapy after twelve weeks and one year of treatment. UC: no significant difference in efficacy was observed between IFX originator and biosimilars. Several factors were identified as predictor of response - independently of the drug employed - at multivariable logistic regression analysis (table 1).

Conclusion: In one of the largest “real-life” series of IBD patients on biological therapy reported to date, ADA in CD had a higher success compared to IFX at both 12 and 52 weeks; however, this results could be influenced by the preference of ADA as first-line anti-TNF drug in CD. IFX in UC was superior to GOL and ADA at 52 weeks; once again, this result could be influenced by the preference of IFX as first-line anti-TNF agent in UC; no difference was found between GOL and ADA in UC. Being naïve to biologics is a relevant predictor of response in both CD and UC at any time point. No significant difference in efficacy was observed between IFX originator and biosimilars.

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F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals

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P1686 SINGLE-CENTRE EXPERIENCE WITH BIOLOGICAL TREATMENT IN BUESONIDE-REFRACTORY MICROSCOPIC COLITIS PATIENTS

N. Daferera1, S. Ignatova2, A. Münch2
1Gastroenterology, University Hospital of Linköping, Linköping;Sweden
2Gastroenterology, Dept. of Gastroenterology, Linköping;Sweden

Contact E-mail Address: andreas.munch@regionstergotland.se

Introduction: Microscopic colitis (MC) is a common cause of chronic watery diarrhoea which is effectively treated with budesonide. However, in rare cases patients are refractory to budesonide leading to a severely deteriorated quality of life. Data on treatment options for budesonide refractory MC patients are sparse. We retrospectively evaluated the outcome of MC patients who have received biological therapy at our centre.

Aims & Methods: All patients with MC treated with biological therapy at the Department of Gastroenterology, University hospital Linköping, Sweden were selected and the outcome recorded. Patients were investigated according to sex, age, disease subtype, clinical remission (defined as < mean 3 and 0 watery stools/day/week), clinical response (defined as 50% reduction of mean stool frequency/day/week), side effects and long-term outcome.

Results: 14 patients (10 women) with mean age at diagnosis of 49 years (range 19–76), thereof 12 with collagenous colitis and 2 with lymphocytic colitis were investigated. All 14 patients had received anti-TNF agents (11 adalimumab (ADA), 3 infliximab (IFX)). ADA was given as induction treatment (160-80-40 mg) and IFX 5 mg/kg at week 0, 2 and 6. Six patients achieved clinical remission. Of these, 2 patients maintained clinical remission for several years after induction treatment, 2 patients are on maintenance treatment with 40 mg ADA/eow, one patient on 400 mg INF every 8 weeks and one patient had loss of response and did not gain clinical remission despite the use of a third anti-TNF agent (certolizumab). Four patients had a clinical response but stopped treatment due to side effects (vomiting, anxiety, fatigue and eczema—all reversible). Four patients had no effect on anti-TNF despite the fact that 2 patient had even tested both anti-TNF agents. Of these 4 patients who failed anti-TNF, 3 patients received treatment with vedolizumab (300 mg week 0, 2 and 6) without effect. One patient had further treatment with rituximab (1000 mg twice) and another patient tested ustekinumab (390 mg once); both did not achieve any clinical improvement.

Conclusion: Budesonide refractory MC patients can achieve clinical remission or response on anti-TNF agents. In the cases that failed anti-TNF, further treatment with vedolizumab (n = 3), rituximab (n = 1) and ustekinumab (n = 1) did not improve the clinical condition. Prospective studies with long duration are needed to evaluate the efficacy of various biological treatments in budesonide refractory MC.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1687 BENEFICIAL EFFECT OF A LOW FODMAPS DIET IN INFLAMMATORY GASTROINTESTINAL DISORDERS

A. Testa, N. Imperatore2, A. Rispo2, M. Rea1, R. Tortora1, O.M. Nardone1, L. Lucci2, G. Accarino3, N. Caporaso1, F. Castiglione1

1Gastroenterology, Department of Clinical Medicine and Surgery, School of Medicine Federico II of Naples, Naples/Italy
2Hepatology Unit, Cardarelli Hospital, Naples/Italy
3Nursing, Department of Clinical Medicine and Surgery, School of Medicine Federico II of Naples, Naples/Italy

Contact E-mail Address: annetesta82@virgilo.it

Introduction: Recent studies have shown that FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols)-free diet is effective in subjects with Irritable Bowel Syndrome (IBS). Patients with Inflammatory Bowel Diseases (IBD), and celiac disease (CD) can experience functional gastrointestinal symptoms unrelated to inflammation, but data about the use of low FODMAPs diet in these settings is still scarce.

Aims & Methods: To evaluate the usefulness of a low FODMAPs diet on patients with IBS, non-active IBD, and CD on strict gluten-free diet (GFD), we performed a dietetic interventional prospective study evaluating the effect of a low FODMAPs diet on patients affected by IBS, CD following at least a 1-year GFD therapy, and IBD who had been experiencing gastrointestinal symptoms without signs of active inflammation. Each subject was put on a low FODMAPs diet after being evaluated by filling out questionnaires concerning on quality of life and symptoms experienced (IBS-SSS and SF-36), and was re-evaluated twice, first after 1 month and second after 3 months.

Results: 127 subjects were enrolled: 56 with IBS, 30 with IBD and 41 with CD. The analysis of the IBS-SSS survey showed that abdominal symptoms improved after 1 month of low FODMAPs diet in all subjects, with statistically significant difference within each group at T0 (average score in IBS: 293 ± 137 SD, average score in IBD: 206 ± 86 SD, average score in CD: 222 ± 65 SD, p < 0.001). Furthermore, by analysing the SF-36 questionnaire, while we did not observe any significant difference between the three groups in terms of response to diet (p = NS), we observed a clinical improvement from T0 to T3, after the start of the diet, for most of the questionnaire’s domains.

Conclusion: A low FODMAPs diet could be a valid option to counter abdominal symptoms in patients with IBS, non-active IBD or CD on GFD, and, thus improve their quality of life and social relations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1688 EFFICACY OF VEDOLIZUMAB ON INTESTINAL AND ARTICULAR SYMPTOMS: REAL-LIFE DATA FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)


1Division of Internal Medicine, “Villa Sofia-Cervello” Hospital, Palermo/Italy
2Inflammatory bowel disease Unit, A.O.U. Policlinico “G. Martino”, Messina, Italy, Messina/Italy
3Gastroenterology Unit, A.O.U. Policlinico “Vittorio Emanuele”, Catania, Catania/Italy
4D.H.m.is., Gastroenterology and Hepatology Unit, Palermo/Italy
5Gastroenterology Unit, ARNAS “G. Carbone” Hospital, Catania/Italy
6IBD Unit, A.O. “Cannizzaro”, Catania, Italy, Catania/Italy
7Gastroenterology Unit, A.O. “Gazzarri”, Vittoria, Italy, Vittoria/Italy
8Gastroenterology and Endoscopy Unit, “Villa Sofia-Cervello” Hospital, Italy, Palermo, Palermo/Italy

Contact E-mail Address: femacaluso@gmail.com

Introduction: Vedolizumab (VDZ) is a new biologic agent approved for the treatment of adult patients with moderately to severely active ulcerative colitis (UC) and Crohn’s disease (CD).

Aims & Methods: The Sicilian Network for Inflammatory Bowel Disease (SN-IBD) is composed by all Sicilian centres prescribing biologics. These centres continuously enter in a web based software all real life data about pre-scriptions and outcomes of biological therapy in patients with inflammatory bowel disease (IBD). Herein we report data on efficacy of VDZ on intestinal and articular symptoms after 10 and 24 weeks of treatment. As clinical end-point, we set steroid-free remission (corresponding to a Mayo Partial Score < 2 for UC, and to a Harvey-Bradshaw Index < 5 for CD), and clinical response (reduction of Harvey-Bradshaw Index ≥3 for CD and Mayo Partial Score ≥2 for UC compared with baseline with a concomitant reduction of steroid dosage at week 10, and complete discontinuation at week 24).

Results: From July 2016 to April 2017, 163 patients (84 with CD and 79 with UC) were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 79 (48.5%). Out of 71 patients (43.6%), while a clinical response in 37 (22.7%). Out of 71 patients were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 37 (22.7%). Out of 71 patients were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 37 (22.7%). Out of 71 patients were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 37 (22.7%).

Conclusion: In this large cohort of Sicilian IBD patients, VDZ showed good efficacy after 10 and 24 weeks of treatment, particularly in those with a shorter duration of disease and a limited inflammatory burden. A subset of patients reported improvement also on articular symptoms, probably as a consequence of the concomitant control of gut inflammation.

Disclosure of Interest: F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. M. Cottone: financial support for the organization of a second level Master degree in inflammatory bowel disease from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. All other authors have declared no conflicts of interest.

All three groups, while we did not observe any significant difference between the three groups, in terms of response to diet (p = NS), we observed a clinical improvement from T0 to T3, after the start of the diet, for most of the questionnaire’s domains.

Conclusion: A low FODMAPs diet could be a valid option to counter abdominal symptoms in patients with IBS, non-active IBD or CD on GFD, and, thus improve their quality of life and social relations.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest: All authors have declared no conflicts of interest.
**P1689 POSITIVE PHARMACOKINETIC EFFECT OF AZATHIOPRINE CO-MEDICATION ON INFLIXIMAB TROUGH LEVELS IS DOSE-DEPENDENT**

B. Kadleckova1, K. Ototova1, J. Lucencova2, P. Bozek2, P. Mikus2, Z. Zelinkova4

1IBD Center, Bratislava/Slovak Republic
2Department Of Biochemistry & Hematology, St Michael’s Hospital, Bratislava/Slovak Republic
3Nuclear Pharmacy, Pharmaceutical Faculty of Comenius University, Bratislava/ Slovak Republic
4Department Of Gastroenterology, St Michael’s Hospital, Bratislava/Slovak Republic

Contact E-mail Address: zuzana.zelinkova@nmss.sk

**Introduction:** Combined immune suppression of anti-tumour necrosis factor (antiTNF) biologicals and thiopurines is superior to respective monotherapies in remission induction and maintenance of response in inflammatory bowel disease due to additive or synergistic mechanisms. The clinical benefit of mutually positive pharmacokinetic effect of thiopurines on antiTNF levels and vice versa, has been suggested for this synergistic effect, reduced dose of thiopurines might be sufficient but the data supporting this hypothesis are still limited.

**Aims & Methods:** The aim of the study was to assess the differences of infliximab trough levels according to the dose of concomitantly used thiopurines. All IBD patients treated with infliximab (Remicade®) in two IBD centres between November 2015 and April 2017 were eligible. Infliximab trough levels were routinely measured in all patients with maintenance infliximab therapy using commercially available ELISA kit (Ridiscreen®, R-Biopharm). All patients in remission with stable dose regimen of 5mg/kg every 8 weeks at the time of the first infliximab trough level measurements were evaluated prospectively from the medical records. The differences in the proportion of patients with adequate trough levels (3–12 μg/mL) between patients on infliximab monotherapy, reduced (below 2 mg/kg) azathioprine (AZA) dose vs. full (2 to 2.5 mg/kg) AZA dose were assessed statistically.

Results: Out of a total of 214 IBD patients treated with infliximab, there were 154 patients with maintenance infliximab therapy using combined AZA and infliximab. All other authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1690 C60 FULLERENES ATTENUATE THE INTENSITY OF COLON DAMAGE AND EXTRATESTINAL MANIFESTATIONS ON RATS ACUTE ULCERATIVE COLITIS MODEL**

H. Kuznietsova1, I. Byelinska2, N. Dziubenko1, G. Gurniak1, O. Lynchak1, Y. Prylutsky1, V. Rybalchenko1

1Educational Scientific Center "Institute Of Biology And Medicine", Taras Shevchenko National University of Kyiv, Kyiv/Ukraine
2Department Of Membrane Anatomy And Cytology, Taras Shevchenko National University of Kyiv, Kyiv/Ukraine

Contact E-mail Address: biophyz@gmail.com

**Introduction:** The primary drugs used for treatment of inflammatory bowel disease (IBD) treatment have some adverse effects and often are ineffective, so the need for more potent and more reliable medications is clear. A significant role at all the stages of the inflammatory process is attributed to reactive oxygen species, therefore the use of antioxidants is a promising direction of the IBD therapy.

**Aims & Methods:** C60 fullerene are the effective free radicals scavengers [1], therefore the evaluation of possible protective properties of water-soluble pristine C60 fullerene using the simulation of acute ulcerative colitis (UC) in rats was aimed to be discovered. The pristine C60 fullerene aqueous colloid solution (C60FAS; initial concentration 0.15 mg/ml) was prepared according to the protocols developed before [2]. UC was simulated by acetic acid intracolonic instillation. C60FAS was intraperitoneally or intrarectally applied at dose of 0.5 mg/kg C60 daily for 2 times after UC induction. The colon injury was estimated semi-quantitatively on macro- and light microscopy levels using 10- and 14- grade score respectively, and the grade of total injury (GTTi) was calculated, percentile abnormality of colon epithelium was estimated by phenol red dye daily excretion. The states of the colon, liver, pancreas and spleen were assessed by histological (hematoxylin-eosin staining) and biochemical (plasma blood liver enzymes activity) methods, quantitative blood indices were calculated and leukograms were analyzed.

**Results:** Colon wall edema, hyperemia and hemorrhage on bowel internal surface, ulcer(s) of different size, epithelium desquamation and inflammatory features manifested by submucous lymphoid and histiocytic infiltration and extravasation appeared under UC conditions equal to 12 (GTTi 3). C60FAS correction of UC condition was equal to 12 (GTTi 0). Racemi360405@med.shimane-u.ac.jp

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1691 EARLY CLINICAL REMISSION BY WEEK 2 PREDICTS GOOD SHORT- AND LONG-TERM EFFICACY OF TACROLIMUS THERAPY IN PATIENTS WITH MODERATE TO SEVERE STEROID-REFRACTORY ULCERATIVE COLITIS**


Gastroenterology And Hepatology, Shimane University School of Medicine, Izumo,Japan

Contact E-mail Address: si360405@med.shimane-u.ac.jp

**Introduction:** Tacrolimus, a calcineurin inhibitor, has been shown to be safe and effective when used as salvage therapy for steroid-refractory ulcerative colitis (UC). Its pharmacological effect has been reported to be dependent on trough level in blood, though little is known regarding predictive factors in relation to the clinical efficacy of tacrolimus in UC patients.

**Aims & Methods:** The aim of this study was to identify factors related to prediction of short- and long-time efficacy of tacrolimus for UC. We retrospectively reviewed the medical records of patients with moderate to severe steroid-refractory UC who were treated with tacrolimus as induction therapy at Shimane University Hospital between January 2010 and March 2016. Oral tacrolimus was administered at a whole-blood trough level of 10–15 ng/mL to induce remission and then 5–10 ng/mL to maintain remission. Following tacrolimus therapy for 3 months, patients in clinical remission were given azathioprine for maintenance at an appropriate dosage. Using the Rachmilewitz clinical activity index (CAI), clinical remission was defined as a score of ≤4. Predictive factors associated with short- and long-term tacrolimus efficacy were analyzed by evaluating various clinical parameters.

**Results:** Thirty-six patients received oral tacrolimus for induction, of whom 22 (61.1%) and 27 (75%) experienced clinical remission at 2 and 12 weeks, respectively, after starting therapy. In patients showing short-term efficacy, the clinical remission rate at 2 weeks was significantly associated with CAI at 2AI (p < 0.001 for both comparisons, infliximab trough levels in blood, though little is known regarding predictive factors in relation to the clinical efficacy of tacrolimus in UC patients. Use of tacrolimus therapy for 3 months, patients in clinical remission were given azathioprine for maintenance at an appropriate dosage. Using the Rachmilewitz clinical activity index (CAI), clinical remission was defined as a score of ≤4. Predictive factors associated with short- and long-term tacrolimus efficacy were analyzed by evaluating various clinical parameters.

**Conclusion:** Tacrolimus induction therapy was effective for patients with moderate to severe steroid-refractory UC. Our results clearly indicate that clinical remission achievement at 2 weeks is useful for predicting both short- and long-term outcome in UC patients treated with that therapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1692 INFLIXIMAB (IFX) IN MODERATE TO SEVERE ULCERATIVE COLITIS (UC): COMPARISON BETWEEN SCHEDULED TREATMENT STRATEGY AND BRIDGE STRATEGY

A.M. Sambuelli1, A. H. Gill2, S. M. Negreria3, M. I. Bellicoso1, S. Goncalves1, S.P. Huernos1, P.R. Tirado1, P. Chaverro1, A. Cabanne2
1IBD Section - Medicine, Bonorino Ualdo Hospital, Buenos Aires/Argentina
2Pathology, Bonorino Ualdo Hospital, Buenos Aires/Argentina

Contact E-mail Address: alicia.sambuelli@gmail.com

Introduction: UC is a potentially severe disease that carries an increased risk of complications and colectomy. Immunosuppressant and biological therapies are relevant tools for complex patients. The ACCENT study showed that in Crohn’s disease (CD), scheduled IFX infusions vs. episodic are associated with greater efficacy. The historical difficulties of economic access in IBD and the lack of a standard IBD treatment plan led to the development of a bridge strategy. This strategy (p=0.007), strong ‘cyclical’ timeline (ß 1.33 (95% CI 0.33–2.34), p=0.019), more ’consequences’ (ß 2.00 (95% CI 0.60–3.42), p=0.006), stronger ‘emotional representations’ (ß 1.58 (95% CI 0.08–3.08), p=0.039) and a low ‘coherence’ (ß –1.29 (95% CI –2.45–(0.14)), p=0.029). In addition, the coping strategies increased ‘diverting attention’ (ß 1.34 (95% CI 0.26–2.66), p=0.047) and increased ’consideration’ (ß 1.18 (95% CI 0.10–2.27), p=0.033), as well as the illness outcomes low physical (ß –7.22 (95% CI –9.68–4.77), p<0.001) and mental (ß –3.10 (95% CI –5.99–(0.23), p=0.035) health and increased activity impairment (ß 0.15 (95% CI 0.07–0.23), p<0.001) were related with the shift of biological drug compared with the scheduled strategy ‘pacing’ (p=0.003) was found in IFX patients with arthropathies compared with baseline scores.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1694 INFLIXIMAB BIOSIMILAR CT-P13 THERAPY IS EFFECTIVE IN MAINTAINING ENDOSCOPIC REMISSION IN ULCERATIVE COLITIS–RESULTS FROM MULTICENTRE OBSERVATIONAL COHORT

K. Farkas1, A. Balint1, M. Rutka1, M. Kolar1, M. Bordlik1, D. Duriczova1, V. Hruby1, M. Lukas1, K. Mitrova1, K. Malickova1, M. Lukas1, Z. Szepes1, F. Nagy1, K. Palatka1, S. Lovas1, Z. Vegh1, Z. Kurti1, A.A. Csontos1, P. Miheller1, R. Bor1, A. Milasin1, A. Fabian1, P.L. Lakatos1, T. Molnar2
11st Department Of Medicine, University of Szeged, Szeged/Hungary
2IBD Clinical And Research Center, ISCARCE I.V.F., Szeged/Hungary
3Department Of Gastroenterology, University of Debrecen, Debrecen/Hungary
41st Department Of Medicine, Semmelweis University Faculty of Medicine 1st Dept. of Medicine – 1st Department of Internal Medicine, Budapest/Hungary
52nd Dept. Of Medicine, Semmelweis University 2nd Department of Internal Medicine, Budapest/Hungary

Contact E-mail Address: farkas.klaudia@gmail.com

Introduction: CT-P13, the first biosimilar monoclonal antibody to infliximab (IFX) has previously been confirmed to be efficacious in inducing mucosal healing in ulcerative colitis (UC) patients.

Aims & Methods: The aim of this study was to evaluate the efficacy of CT-P13 therapy in maintaining mucosal healing in UC. Patients diagnosed with UC, who were administered CT-P13 from June 2014 at 4 Hungarian and one Czech IBD Centre were prospectively enrolled. Sigmoidoscopy was performed at week 14 and week 54 to assess mucosal healing. Mucosal healing was defined as Mayo endoscopic subscore of 0 or 1. Complete mucosal healing was defined as Mayo endoscopic subscore of 0. CT-P13 trough levels, antibody positivity, serum inflammatory markers as CRP level, fecal calprotectin at weeks 14 and 54, concomitant steroid and azathioprine therapy at the time of mucosal healing and at weeks 14 and 54, previous use of anti TNF drug and the need of dose intensification as possible predictive factors for mucosal healing at week 54 were evaluated. Results: Seventy-five UC patients were included in the study of which 74 patients completed the induction therapy and 54 patients had already completed the 54 week treatment period. Mucosal healing was shown in 55.4% of the patients at week 14 and 61.7% at week 54 (p=0.033). Complete mucosal healing was patient in 24.3% at week 14, but in 54% at week 54. The proportion values of CRP (p=0.017), leukocytes (p<0.001), thrombocytes (p<0.001), and albumin (p=0.002) showed significant difference at baseline and week 54. Mean trough level of CT-P13 was 5.02 µg/ml and 4.4µg/ml at week 14 and 54. Serum antibody positivity was assessed in 7.7% at 26.2% of patients at week 14 and 54, respectively. Dose escalation was necessary in one third of patients. None of the patients need surgery who completed week 54, however 4 subjects who stopped CT-P13 therapy after induction regimen required colectomy.

Conclusion: Suffering from IBD patients in IBD is strongly associated with different Illness perceptions, coping strategies and illness outcomes and changes of these factors over time. As a gastroenterologist, addressing the maladaptive illness perceptions, coping strategies and related poor illness outcomes in these patients may provide an important opportunity to target for behavioral interventions including cognitive behavioural therapy (CBT) or physical exercise.

Disclosure of Interest: All authors have declared no conflicts of interest.
of non-serious infections, 8% (95% CI 6–10%) for serious AEs and 7% (95% CI 3–13%) for VDZ-treated patients was 21% (95% CI 14–32%); 10% (95% CI 6–16%) for week 8 (response p = 0.02; remission: ADA vs GOL p = 0.027). At week 16 only IFX seems to be more effective than GOL in inducing clinical response (p = 0.048) but not remission. No significant difference among the three drugs was observed in patients naïve to anti-TNFs. Treatment was discontinued in 2 patient in IFX group and in 6 patients in GOL group and in 6 patients with ADA because of persistent disease activity.

Conclusion: This single-center study shows that IFX is more effective than GOL both in the induction (8 weeks) and in the maintenance of response (16 weeks). ADA is more effective than GOL in inducing remission at 8 weeks but no significant difference is observed in the medium-term. However, GOL was used mainly as a second or third-line. In naïve patients, efficacy among anti-TNFs is comparable. Our results may help clinicians in the choice of an anti-TNF in UC. It should be preferred in steroid-resistant patients to get a faster response, ADA and GOL should be the first options in steroid-dependent patients naïve to anti-TNFs.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Table 1: Pooled real-world adverse event rates of vedolizumab in inflammatory bowel disease

<table>
<thead>
<tr>
<th>Event</th>
<th>n</th>
<th>Rate, %</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-infectious adverse events (≥2% of patients)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acne or acne-like lesions</td>
<td>290</td>
<td>7.2</td>
<td>4.8–10.9</td>
</tr>
<tr>
<td>Fatigue</td>
<td>569</td>
<td>6.3</td>
<td>2.6–14.6</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>1356</td>
<td>5.2</td>
<td>2.7–9.9</td>
</tr>
<tr>
<td>Exacerbation of IBD symptoms</td>
<td>674</td>
<td>4.9</td>
<td>2.1–11.1</td>
</tr>
<tr>
<td>Muscle pain</td>
<td>147</td>
<td>4.8</td>
<td>2.3–9.7</td>
</tr>
<tr>
<td>Headache</td>
<td>937</td>
<td>4.7</td>
<td>3.0–7.2</td>
</tr>
<tr>
<td>Dizziness</td>
<td>222</td>
<td>4.5</td>
<td>1.4–13.6</td>
</tr>
<tr>
<td>Cough</td>
<td>185</td>
<td>4.0</td>
<td>0.3–39.7</td>
</tr>
</tbody>
</table>

*Includes paradoxical skin manifestations, acute generalised exanthematous pustulosis, dry skin, erythema nodosum, palmar erythema. †Includes spontaneous nausea. ‡Includes liver test abnormalities (transient transaminisits), drug-induced liver injury (not specified). ††Includes severe musculoskeletal syndrome, exacerbation of pre-existing enteropathic arthritis †‡Includes pneumonia, lower respiratory tract infections, respiratory tract infection (not specified)

Conclusion: Pooled analysis of AE rates across multiple studies support the favourable, long-term benefit–risk profile of VDZ in real-world clinical practice, with low rates of infusion-related reactions, serious infections and malignancies reported, and no identification of new safety signals. These results are consistent with integrated safety data reported for VDZ in six clinical trials (>4000 patient-years), despite the selection of complex patients failing previous anti-TNF biologic therapies. Limitations of incidental reporting in real-world studies include potential underestimates of AE rates and the reporting of AEs not regularly observed in clinical trials; for example, due to the variability in medication use and sub-optimal screening of prior infections.

Disclosure of Interest: A. Dr Edward Loftus has received financial support for research from AbbVie, Janssen, UCB, Takeda, Pfizer, GlaxoSmithKline, Amgen, Bristol-Myers Squibb, Genentech, Robarts Clinical Trials, Gilead, Receptos; and has served as a consultant for Abbott, Janssen, UCB, Takeda, Immune Pharmaceuticals, Celgene, Medimmune, Theradis, Genentech, Seres Health, Sun Pharmaceuticals, Bristol-Myers Squibb. S. Schreiber: Has received on-spot consultancy fees from Abbvie, Janssen, Genentech, Mitsubishi, Ferring, Norgine, Tillots, Vifor, Therakos, Pharmacosmos, Pileg, BMS, UCB-pharma, Hospira, Celltrion, Takeda, Biogaran, Boehringer Ingelheim, Lilly, Pfizer, HAC-Pharma, Index
P1697 COST-UTILITY ANALYSES OF BILOGICS FOR REFRACTORY ULCERATIVE COLITIS

S. Campbell1, C. Inserri1, R. Salerno1, A. Cassinotti2, G. Muserra1, M. Piacenza1, A. Ardizzo2
1Pharmacy, ASST Fatebenefratelli Sacco, Milan, Italy
2Gastroenterology, ASST Fatebenefratelli Sacco, Milan, Italy

Contact E-mail Address: secambellavies@gmail.com

Introduction: Although many biologics (Bs) have been approved for the treatment of refractory moderate-to-severe Ulcerative Colitis (UC) in patients who have responded inadequately to conventional therapy, the selection of Bs is controversial due to the lack of head-to-head trials. Indirect economic comparisons of these costly drugs are available from National Healthcare perspectives that are not consistent over time.

Aims & Methods: The objective is to evaluate cost-utility of Bs for the treatment of refractory moderate-to-severe UC both in and the Lombardy Region. A Markov model (considering 3 transition states: remission, clinical response, relapse) was constructed using the software R and Markovchain-package to evaluate incremental cost-utility ratios (ICUR) of adalimumab (ADA), infliximab (IFX), infliximab biosimilar (IFX-B), golimumab (GOL) and vedolizumab (VED) treatments of patients over a 10-year time horizon from the perspective of the Italian (N) and Lombardy Region (R) healthcare system. Clinical parameters were derived from clinical trials. Costs (actualised by 1.5%) were obtained from the National database and Regional public tender. Utility was expressed as QALY (Quality Adjusted Life Years).

Results: Costs per treatment were different from N and R perspective (ADA −55%; IFX −16.7%; IFX-B −29.6%; GOL −9.6%; VED −10%). Direct healthcare costs (treatment cost, visits, lab tests, hospital admissions) were calculated over 10 years of treatment per patient: ADA (N: €114,227, R: €96,314, −40.2%), IFX (N: €130,955, R: €103,081, −22.5%), IFX-B (N: €110,438, R: €78,852, −28.6%), GOL (N: €118,602, R: €96,922, −18.3%), VED (N: €113,852, R: €102,932, −9.6%) with associated QALY respectively of 6.68, 6.66, 6.66, 7.02. From a N perspective, IFX-B was dominating compared to all other treatments. The ICUR of VED/IFX-B was €9843 for 10 years of treatment ($102,932, −9.6%) and $9843 for 10 years of treatment ($118,602, −9.6%). From a R perspective, ADA was dominating compared to all other treatments. The ICUR of ADA/VED was €101,818 for 10 years of treatment ($107,840, −80%)

Conclusion: National and Regional cost-utility analyses produced different results. As Regional price discounts can occur, local analysis is needed to estimate the economic impact of therapies to ensure optimal choice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1698 ENDOSCOPIC SUBMUCOSAL DISSECTION OF ULCERATIVE COLITIS-ASSOCIATED DYSPLASIA: A SINGLE CENTER-BASED EXPERIENCE

D. Yang, S. Lee, K. Chung, E.M. Song, S.W. Hwang, S.H. Park, B.D. Ye, J. Kim, M. Myung, & J. Yang

Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of

Contact E-mail Address: gi.dry.yang@gmail.com

Introduction: Dysplasia is considered as the precursor of colitis-associated cancer in the long standing ulcerative colitis (UC). Although endoscopic submucosal dissection (ESD) has been suggested as an endoscopic resection technique for non-polypoid dysplasia, only a few studies investigated the feasibility of ESD as a dissection (ESD) has been suggested as an endoscopic resection technique for dysplasia diagnosed by the surveillance biopsy specimens taken during ESD. Metachronous or recurrent dysplasia was identified in 2 of 9 patients who underwent follow-up colonoscopy after ESD (median follow-up period of 12.3 months, range 9.2-19.2 months). One developed metachronous LGD at 18 months after ESD and the other developed both metachronous and recurrent LGDs at 8 months after ESD.

Conclusion: According to our ESD series for dysplasia, ESD seems to be feasible for the endoscopic resection of UC-associated dysplasia. However, meticulous surveillance colonoscopy is mandatory to monitor local recurrence and metachronous dysplasia. Non-lifting sign and surface ulceration are highly suggestive of invasive colitic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1699 EVALUATION OF ADHERENCE TO INFLIXIMAB THERAPY IN IBD PATIENTS

A. Chios1, G. Corrales1, F. Cañete1, T. Lubaton1, M. Larrain1, L. Mariá1, A. Mahoula2, E. Cabré2, E. Domènech2
1Gastroenterology, Hospital Germans Trias i Pujol, Badalona/Spain
2Gastroenterology, Charité-Universitätsmedizin Berlin, Campus Benjamin Franklin, Berlin/Germany

Contact E-mail Address: ariadna.losparals@gmail.com

Introduction: Biological therapies are effective treatments for inflammatory bowel disease (IBD) but represent an important economic burden to the healthcare system. Adherence surveillance is necessary to optimize the efficacy of treatment and its costs. This issue has been evaluated just in a few studies.

Aims & Methods: We aim to describe the adherence to infliximab in patients with IBD and identify causes and factors associated with poor adherence. We identified all IBD patients treated with infliximab in a single center since 2009. Fulfillment of the prescribed schedule was assessed for every single infliximab infusion. For every patient, we grouped infusions in “courses of treatment” defined as the administration of infliximab at the same dose and schedule for a minimum of six months. Therefore, restarting the treatment after a holiday of more than 4 months, or changing the interval of doses were considered as a new course of treatment. We defined “infusion well administered” when it was done within seven days before or after the date prescribed.

Results: We included a total of 147 courses of treatment, administered to 100 patients. Seventy-four per cent of courses were Crohn disease patients, and 25% in ulcerative colitis patients. In 89% of courses combo therapy with immunosuppressants was used. The prescribed regimens were: every 8 weeks (76.2%), every 4 weeks (26%), every 6 weeks (7.5%), every 4 weeks (5.4%), every 12 weeks (2.7%) or every 4 weeks (2%). The mean duration of the courses was 23 months (range 6-103). Only 69 out of 1174 infusions (4%), were not properly administered. The reported causes for that included: 36 “unknown” (52%), 18 “change requested by patient” (26%), 15 “due to logistic reasons” (21%) and 4 “other” (5%). 107 course (73%) of the infusions were well administered; in 143 (97%)>80% of infusions were well administered and only 4 courses (2.7%) had less than 80% of adherence. In more than an half of the infusions the cause could not be identified, for that reason analysis of predictive factors could not be performed.

Conclusion: The adherence to the scheduled infliximab regimen was very high and it would contribute to maintain the drug efficacy. The reasons for changing the date of administration should be indicated in the clinical history to identify associated factors and minimize the lack of adherence.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1700 TNF-EXPRESSION OF MONOCYTES IS A PREDICTIVE MARKER FOR RESPONSE TO ANTI-TNF TREATMENT IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

D. Lissner, B. Jessen, E. Sonnenberg, F. Schmidt, A. Kuehl, B. Siggmond

Department For Gastroenterology, Infectious Diseases And Rheumatology, Charité-Universitätsmedizin Berlin, Campus Benjamin Franklin, Berlin/Germany

Contact E-mail Address: domata.lissner@charite.de

Introduction: One-third of all patients with inflammatory bowel diseases (IBD) do not respond to initial treatment with the anti-TNF-antibody Infliximab. Thus, predictive markers for response to anti-TNF-treatment are required.

Methods: The study was designed to investigate the expression levels of TNF produced by peripheral blood mononuclear cells (PBMCs) can predict response to anti-TNF-treatment. Fourteen patients with proven Crohn’s disease (CD) or ulcerative colitis (UC) without treatment with biologics in the past six months were included prior to first Infliximab infusion. Disease activity was measured by the use of Harvey-Bradsaw-Index (HBI) or partial Mayo Score, C-reactive protein (CRP) and ultrasound (Limberg Score). TNF-expression of LPS-stimulated PBMCs was measured by ELISA before treatment. Additionally PBMCs'
intracellular TNF-expression was analysed by flow cytometry. According to a cut-off value patients were divided into low-producers and high-producers. Primary endpoint was clinical response, secondary endpoints were decrease in CRP and Limberg Score. Clinical response was defined as a decline in Score of ≥2 (HBI) or ≥5 (partial Mayo Score). A HBI <5 or a partial Mayo-Score <2 was defined as remission. Results were analysed using the Fisher’s exact test. Results: Nine patients reached the endpoint at week 6 and were available for further analysis (5 patients with CD, 4 patients with UC). The median TNF-expression was defined as remission. Results were analysed using the Fisher’s exact test.

Conclusion: Quantification of TNF-expression in PBMCs and the resulting classification in low- and high-producers could be a potential predictive marker for response to anti-TNF-treatment in IBD patients.

Disclosure of Interest: D. Lissner: Donata Lissner received a research grant from Pfizer and lecture fees from Falk and Abbvie. B. Siegmund: Britta Siegmund received a research grant from Pfizer, served as consultant for Janssen, MSD, Abbvie, Takeda, Hospira and received lecture fees from Abbvie, Falk, Ferring, MSD, Merck, Takeda; all money went to the institution. All other authors have declared no conflicts of interest.

P1702 VEDOLIZUMAB TROUGH LEVELS PREDICT CLINICAL OUTCOMES IN INFLAMMATORY BOWEL DISEASE
L. Guidi1, D. Pugliese1, T. Panici Tonucci2, B. Tolosso2, C. Felice1, A. Papa1, I. De Vitiis1, E. Gremese2, A. Gasbarrini2, G.L. Rapaccini1, A. Armuzzi1
1Internal Medicine And Gastroenterology IBD Unit Unipi, Piroli 4, 00184 Rome, Italy; 2Internal Medicine And Gastroenterology IBD Unit University of Turku, Turku, Finland
22. Statistics was performed by Mann-Whitney test, Spearman’s rho, receiver operating characteristic (ROC) curve analysis.

Results: We included 50 patients (mean age 45.5 ± 3.6 years) with Crohn’s disease (CD, n = 28) and Ulcerative colitis (UC, n = 22). 44 (88%) IBD patients had previous anti-TNFα therapy. Baseline median HBI was 8 (5–16) and median pMayo was 6 (5–7). Median VTL (interquartile range, IQR) at weeks 6, 10 and 14 were 38.6 (20.3–53.5), 25.4 (13.4–45.6) and 17.7 (10.1–33.7) μg/ml, respectively. VTL measured at week 6 were significantly higher in clinical responders as compared to non-responders: median (IQR) 48.1 (32.5–55.8) vs 32.8 (19.7–44.3) μg/ml, p < 0.001. Week 6 VTL were also higher in CRP responders (<5 mg/l): median (IQR) 48.1 (32.5–55.8) vs 32.8 (19.7–44.3) μg/ml, p < 0.001. Week 6 VTL were inversely correlated with CRP (r = −0.39, p = 0.006). By ROC curve analysis a cut-off of 44.3 μg/ml was defined for clinical response at week 6 (AUC 0.677, sensitivity 61.9%, specificity 79.3%, p = 0.002). Week 6 VTL were significantly higher in patients in clinical remission at their last follow-up (median week) compared to non-remitters: median (IQR) 55.8 (46.6–64.1) vs 33.3 (25.9–40.4) μg/ml, p = 0.0005. The ROC curve analysis identified a cut-off of 44.3 μg/ml (AUC 0.813 sensitivity 88.9%, specificity 73.2%, p = 0.0006). Week 14 VTL were also significantly higher in patients in clinical remission at 22 weeks compared to non-remitters: median (IQR) 38.3 (20.5–49.8) vs 13.4 (8.4–20.6) μg/ml, p < 0.0005. The cut-off identified by ROC curve analysis for this outcome was 16.4 μg/ml (AUC 0.820 sensitivity 100% specificity 63%, p = 0.0019). AVA were detected in 2% of patients at week 6, 5.9% at week 10 and 4.5% at week 14 and were not correlated with clinical response.

Conclusion: These preliminary data suggest that obtaining a VTL of 44.3 μg/ml after the first 2 Vedolizumab infusions is correlated with early clinical and biological (CRP) response and with clinical remission at a mean follow-up of 20 weeks. Week 14 VTL are correlated with clinical remission at week 22 and the identified cut off is 16.4 μg/ml. Immunogenicity of Vedolizumab is low in these patients.

Disclosure of Interest: L. Guidi: Lecture fees by AbbVie, Merck, Takeda, Mundipharma, Zambon
B. Siegmund: Britta Siegmund received a research grant from Pfizer, served as consultant for Janssen, MSD, Abbvie, Takeda, Hospira and received lecture fees from Abbvie, Falk, Ferring, MSD, Merck, Takeda; all money went to the institution. All other authors have declared no conflicts of interest.
Results: In the context of ~77,382 patient-years of VDZ exposure and a total of 36 acute VDZ-related flares, 35 (13.3%) occurred in the VDZ database: 20 (57.1%) were non-serious and no serious events were reported. 15 of 15 patients with pre-existing viral hepatitis (B = 5, C = 10) reported flares due to VDZ. Of these, 14 (93.3%) patients presented with acute viral flare or acute viral hepatitis. The second group included 8 patients with concomitant anti-TNF therapy. Of these, 7 (87.5%) reported flares due to VDZ. Events were more common in patients with hepatitis B (9/15 patients) were more common than in patients with hepatitis C (4/8 patients). Adverse events included: 14 events related to VDZ (B = 7, C = 7). The most common events included infections (B = 5, C = 4), dyspepsia (B = 2, C = 1), and febrile conditions (B = 1, C = 1). The remaining events included: 1 event due to concomitant anti-TNF therapy (B = 1, C = 0). Of these, 14/15 patients had a history of viral hepatitis (B = 7, C = 7). Of these, 13/15 patients reported flares due to VDZ. Two events were reported in patients with hepatitis C: one patient was a smoker who reported hepatic neoplasms; the other patient had a history of skin cancer, cholecystectomy, bladder tumour removal and right radical orchidectomy. Both events resulted in VDZ discontinuation. Of events with a reported outcome, 22/26 (84.6%) were resolved or resolved at the time of reporting and 4/26 (15.4%) were unresolved; NR n = 25. VDZ treatment was continued in 10/26 (74.6%) patients and discontinued in 4/26 (14.6%) patients; NR n = 1.

Conclusion: In the post-marketing setting, there was no evidence of increased risk of virus reactivation in patients with hepatitis B or hepatitis C receiving VDZ. Liver-related events were reported in two patients with hepatitis C—two patients who were smokers. The other patient had a history of skin cancer, cholecystectomy, bladder tumour removal and right radical orchidectomy. Both events resulted in VDZ discontinuation. Of events with a reported outcome, 22/26 (84.6%) were resolved or resolved at the time of reporting and 4/26 (15.4%) were unresolved; NR n = 25. VDZ treatment was continued in 10/26 (74.6%) patients and discontinued in 4/26 (14.6%) patients; NR n = 1.

Disclosure of Interest: I.N. Hlimi: No conflict of interest. S. Adsal: Employee of Takeda Pharmaceuticals (Asia Pacific) A. Blake: Employee of Takeda Development Center Europe Ltd F. Bhayat: Employee of Takeda Development Center Europe Ltd All other authors have declared no conflicts of interest.

References

P1704 AMINOSALICYLATES FOR MAINTENANCE THERAPY IN ULCERATIVE COLITIS: IS THE ADHERENCE REALLY IMPORTANT?

D. Marti, M.P. Ballester, M. Fullana, P. Navarro, M.M. Bosé, J. Tosca, F. Moro, M. Minguez
D Digestive Disease, University Clinic Hospital of Valencia, Valencia/Spain

Contact E-mail Address: marballe@salvador.com

Introduction: Adherence to 5-ASA is equivalent to medication intake. For patients with UC, adherence is defined as the percentage of prescribed 5-ASA that is taken. However, adherence to medication is a complex phenomenon and the use of 5-ASA in UC is associated with many factors such as patient characteristics, disease, and treatment. The aim of this study was to analyze adherence to 5-ASA in UC patients.

Methods: This was a retrospective study of all 5-ASA prescriptions recorded in the Hospital de la Santa Creu i Sant Pau (Barcelona, Spain) between 2014 and 2017. All patients were included if they were receiving 5-ASA for at least 1 year. The percentage of adherence was calculated using the number of pills taken divided by the number of pills prescribed. Adherence was considered as 80% or more. The predictor variables were age, sex, disease activity, and the presence of comorbidities. The main outcomes were the percentage of adherence and the percentage of patients who were adherent. The results were analyzed using descriptive statistics and logistic regression analysis. The significance level was set at p<0.05.

Results: A total of 200 patients were included in the study. The mean age was 46 years, 60% were women, and 65% had a proctitis. The percentage of adherence was 80.5%, and 60% of patients were adherent. The variables that were associated with adherence were gender (female vs. male: OR 1.84, 95% CI 1.10–3.08, p=0.02), age (older vs. younger: OR 1.66, 95% CI 1.01–2.69, p=0.04), and the presence of comorbidities (has vs. no: OR 2.12, 95% CI 1.23–3.64, p=0.007).

Conclusion: Adherence to 5-ASA in UC patients is high. However, adherence is associated with several factors, and the use of 5-ASA in UC is a complex phenomenon. Further research is needed to identify strategies to improve adherence to 5-ASA in UC patients.
P1706 DEVELOPMENT AND FEASIBILITY OF A WEB-BASED REGISTRY FOR MULTICENTRE SURVEILLANCE OF EFFECTIVENESS AND SAFETY OF NOVEL IBD-DRUGS IN THE NETHERLANDS

V. B.e. Biemans1, C.J. Van Der Woude2, G. Dijkstra3, A. E. Van Der Meulen - De Jong4, K.h.n. (De Boer5, C.Y. Ponsioen6, B. Oldenburg7, F. Hoentjen8, M.J. Peirck9

1Gastroenterology And Hepatology, Radboudumc, Nijmegen/Netherlands
2Dept. Of Gastroenterology, Erasmus Medisch Centrum Dept. of Gastroenterology, Rotterdam/Netherlands
3UMC Groningen Gastroenterology and Hepatology, Groningen/Netherlands
4Leiden University Medical Center Dept. of Gastroenterology, Leiden/Netherlands
5Gastroenterology And Hepatology, VU University Medical Center, Amsterdam/Netherlands
6Gastroenterology & Hepatology, AMC Amsterdam Gastroenterology and Hepatology - Gastroenterology & Hepatology, AMC Amsterdam Gastro, Amsterdam/Netherlands
7University Medical Center Utrecht, Utrecht/Netherlands
8Dept Of Gastroenterology And Hepatology, Universitair Medisch Centrum St. Radboud, Nijmegen/Netherlands
9Dept Of Gastroenterology And Hepatology, Maastricht University Medical Center Dept. of Gastroenterology, Maastricht/Netherlands

Contact E-mail Address: vince.biemans@radboudumc.nl

Introduction: Randomized controlled trials provide efficacy data of novel IBD drugs. The majority of patients included in these trials however, especially for novel biologics, are highly selected patients from referral centres and are included in a variety of countries with very different health care systems. Inclusion criteria and follow-up protocols are strict and do not reflect routine care. Long-term country specific effectiveness and safety data for novel drugs are therefore warranted. Development and implementation of a novel protocol and electronic case reporting registry for every new compound is however time consuming and expensive. Therefore, the Initiative on Crohn and Colitis (ICC) aimed to develop a web-based registry suitable for capturing, managing, and reporting data for all drugs and all IBD phenotypes in everyday practice in all centres.

Aims & Methods: We aim to test the feasibility of the web-based registry in patients starting vedolizumab. With a structured iterative process with IBD-specialist from the ICC, case report forms and lab-evaluation forms were developed to assess key elements of disease activity, safety and a PROM. Furthermore the ICC decided on a uniform follow-up protocol reflecting everyday practise. A web-based registry for capturing, managing and reporting follow-up data of IBD patients starting a new drug was developed (ICC-case series). The registry automatically reminds the treating physician or nurse prior to novel follow-up visits. Feasibility of the ICC-case series was assessed in 6 centres in the Netherlands in patients who started vedolizumab. To test data extraction and follow-up protocols are strict and do not reflect routine care. Long-term country specific effectiveness and safety data for novel drugs are therefore warranted. Development and implementation of a novel protocol and electronic case reporting registry for every new compound is however time consuming and expensive. Therefore, the Initiative on Crohn and Colitis (ICC) aimed to develop a web-based registry suitable for capturing, managing, and reporting data for all drugs and all IBD phenotypes in everyday practice in all centres.

Conclusion: The ICC developed a uniform web-based registry to study post-marketing safety and effectiveness of novel IBD-drugs. A feasibility study with 230 patients starting vedolizumab showed successful data-capture, managing, and reporting with the ICC-case series in 6 centres. Table 1 shows clear differences between baseline characteristics of real-life Dutch patients and patients in the GEMINI studies underlying the importance of country specific post-marketing data.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1707 SIX-YEAR EFFICACY AND SAFETY OF AZATHIOPRINE TREATMENT IN THE MAINTENANCE OF STERIOD-FREE REMISSION IN INFLAMMATORY BOWEL DISEASE PATIENTS

C. Cassieri1, R. Pica1, E. V. Avallone1, G. Brandimarte2, M. Zipp1, P. Crispino1, D. De Nitto1, G. P. Lecca3, P. Vernia4, P. Paoluzi5, E. S. Corazziari1

1Department Of Internal Medicine And Medical Specialties, “gastrointestinal Unit”, Sapienza University of Rome Dept. of Gastroenterology, Roma/Italy
2Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy, Roma/Italy

Contact E-mail Address: claudio.cassieri@libero.it

Introduction: Azathioprine (AZA) and thiopurine are widely used for induction and maintenance of remission in patients steroid-resistant or dependent with inflammatory bowel disease (IBD). The treatment must be withdrawn in 5–30% of patients due to the occurrence of adverse events.

Aims & Methods: Aim of this study has been to investigate its efficacy and safety in maintaining steroid-free remission in steroid dependent IBD patients six year after the institution of treatment. Data from consecutive IBD outpatients referred in our Institution, between 1985-2015, were reviewed and all patients treated with AZA were included in this retrospective study. AZA was administered at the recommended dose of 2–2.5 mg/kg. Blood chemistry was analysed before administration of the drug, every 10–15 days for the first 3 months and then every 1–2 months following the institution of treatment.

Results: Out of 2722 consecutive IBD outpatients visited in the index period, AZA was prescribed to 415 patients, 227 (54.7%) were affected by Crohn’s disease (CD) and 188 (45.3%) by ulcerative colitis (UC). One hundred and fifty-eight patients with a follow-up <72 months were excluded from the study. Two hundred and fifty-seven patients were evaluated, 143 (55.6%) with CD and 114 (44.4%) with UC. One hundred and forty-two (55.2%) were male...
and 115 (44.8%) female (average age of 35.68 ± 12.22 SD years, range 14–74 y.). Six years after the institution of treatment, 130 (50.6%) patients still were in steroid-free remission (85 CD vs 45 UC, 59.5% and 39.5%, respectively, p = 0.0017), 71 (27.6%) had a relapse requiring retreatment with steroids (29 CD vs 24 UC, 20.3% and 36.6%, respectively, p = 0.0048), 56 (21.8%) discontinued the treatment due to side effects (29 CD vs 27 UC, 20.2% and 23.7%, respectively). Loss of response from 1st to 6th year of follow-up was low, about 20%

**Conclusion:** Six years after the onset of treatment 56% of patients did not require further steroid courses. After the first year loss of response was low in five subsequent years. In the present series the maintenance of steroid-free remission was significantly higher in CD than in UC patients. The occurrence of side effects leading to the withdrawal of AZA treatment has been low.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1708 CLINICAL EFFICACY AND SAFETY OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE IN THE ELDERLY: A UK TERTIARY REFERRAL CENTRE EXPERIENCE**

J. Digby-Bell
Dept. Of Gastroenterology, St. Thomas’ Hospital, London/United Kingdom

**Contact E-mail Address:** jdigbybell@doctors.org.uk

**Introduction:** Many patients, especially the elderly or those with comorbidities, are excluded from clinical drug trials and little real-life data exists on the safety and efficacy of anti-TNF.

**Aims & Methods:** We aimed to compare the clinical efficacy and safety of anti-TNF therapy in patients over 60 years in a tertiary IBD centre in London, UK. We interrogated our IBD databases from January 2009 to November 2015 and performed retrospective data analysis until end of follow up in April 2017. Data was collected on demographics, endoscopy, calprotectin, CRP, clinical scores, serious infections, malignancy, drug levels and anti-drug antibodies. Patients with an age of >60 when starting anti-TNF therapy were identified and <60 comparators were selected at random in a 2:1 ratio. Primary endpoints: week 14 and week 54 steroid-free clinical remission (Harvey Bradshaw Index < 5 or Simple Colitis Activity index < 3) Secondary endpoint: proportion of patients remaining on anti-TNF at the end of follow up

**Results:** See table.

**Conclusion:** Only a small number of >260 patients started anti-TNF (29 out of greater than 650). This may reflect our local population or that clinicians favour anti-TNF therapies in this older group. Overall there was similar clinical efficacy at weeks 14 and 54 of anti-TNF therapy between the ‘young’ and ‘old’ groups. There was a higher discontinuation rate after 1 year of therapy in the older group (p=0.043). There were more adverse events in the older group (7/29) including 3 new cancer diagnoses compared with the younger group (3/58). 4 patients had detectable anti-drug antibodies in the older group despite 2 of them having therapeutic thiopurine suggesting that the elderly may have more immunogenicity than the young. Further studies with more patients across multiple sites are required to clarify safety and efficacy in the elderly.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1709 TACROLIMUS IN REFRACTORY ULCERATIVE COLITIS–12 MONTH OUTCOME IN A SINGLE-CENTRE UK DISTRICT HOSPITAL**

N. Jayasooriya, L. Everson, S. Mann
Gastroenterology, Barnet and Chase Farm Hospital, Royal Free Trust NHS, Barnet/United Kingdom

**Contact E-mail Address:** nishani.jayasooriya@nhs.net

**Introduction:** Rescue therapy is required for patients with moderate - severe ulcerative colitis (UC) who have failed to respond to steroids and thiopurines. Anti-Tumour Necrosis Factor Agents (Anti-TNFs) are widely used before considering a colectomy. Calcineurin inhibitors such as ciclosporin and Tacrolimus may be considered as alternatives to biologics. There have been some case series in assessing the use of Tacrolimus in such patients although the United Kingdom experience is limited. (1, 2)

**Aims & Methods:** We aimed to review the outcome of patients who received Tacrolimus as rescue and subsequent maintenance therapy for refractory symptoms of UC. This was a retrospective single-centre case review series. All patients who were refractory to standard medical therapies and being considered for a colectomy were reviewed by a Gastroenterologist with an interest in Inflammatory Bowel Disease. Demographic data, indications for treatment, clinical course and outcomes were reviewed from Electronic Patient Records (EPR).

**Results:** Fourteen patients (F = 6; mean age of 54 years) received Tacrolimus. 8 patients (57%) had evidence of pancolitis and six patients (43%) had distal colitis. All patients had previously received thiopurines and 11 patients (78.6%) had also received anti-TNFs. Three patients declined Anti-TNF treatment. All patients were steroid-dependent prior to commencing Tacrolimus. One patient received ciclosporin before the switch. The remaining 13 patients were initiated on Tacrolimus in the out-patient setting at a starting dose of 0.1 mg/kg/ day in 2 divided doses. Patients took Tacrolimus for a mean period of 18.8 months (range: 2 months to 49 months). Eight patients (57%) achieved a steroid-free remission within 6 months. An additional 3 patients (23%) had a clinical response within 6 months, but required one course of steroids during this time period. Three patients (23%) failed to respond to Tacrolimus; 1 patient remains steroid-dependent and does not wish to proceed to surgery, 1 patient was switched to infliximab and 1 patient proceeded at 10 months to have an elective subtotal colectomy. Tacrolimus was withdrawn in all 3 non-responders. Of the 11 (78.6%) initial responders, 12-month outcome included withdrawal of Tacrolimus in 7 patients (63.6%). Reasons for withdrawal included: n = 1 renal impairment; n = 1 started on infliximab; n = 3 referred for leucapheresis; n = 1 restarted on Azathioprine and n = 1 referred for proctocolectomy. Three patients (21.4%) remain in steroid-free clinical remission with a good quality of life and

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**Abstract No: P1708**

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<thead>
<tr>
<th></th>
<th>&lt;60 years</th>
<th>≥60 years</th>
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<tbody>
<tr>
<td>Total</td>
<td>n = 58</td>
<td>n = 29</td>
</tr>
<tr>
<td>Week 14 steroid free remission (HBI &lt;5, SCCAI &lt;3)</td>
<td>28/41 (68.3%)</td>
<td>8/16 (50%)</td>
</tr>
<tr>
<td>Week 54 steroid free remission (HBI &lt;5, SCCAI &lt;3)</td>
<td>24/40 (60%)</td>
<td>8/15 (53.3%)</td>
</tr>
<tr>
<td>Remain on anti-TNF at week 54</td>
<td>46/58 (79.3%)</td>
<td>23/28 (82.1%)</td>
</tr>
<tr>
<td>Reasons for stopping anti-TNF before week 54</td>
<td>7 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical &amp; endoscopic remission</td>
<td>2 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction</td>
</tr>
<tr>
<td>Remain on anti-TNF at end of follow up (April 2017)</td>
<td>38/58 (65.5%)</td>
<td>12/29 (41.4%) p &lt; 0.05</td>
</tr>
<tr>
<td>Reasons for stopping biologic during study period</td>
<td>8 primary non-response 4 secondary loss of response 3 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical and endoscopic remission 2 infections (sinus and respiratory) 1 stopped attending</td>
<td>4 primary non-response 2 secondary loss of response 3 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical and endoscopic remission 1 infection (ophthalmic) 1 new diagnosis cancer (colorectal) 1 severe fatigue 1 peripheral neuropathy 1 moved away 1 stopped attending</td>
</tr>
<tr>
<td>Length of time on anti-TNF if stopped (months)</td>
<td>Range: 3–73 Median: 12</td>
<td>Range: 3–63 Median: 18</td>
</tr>
<tr>
<td>Anti-drug antibodies detectable during follow up infliximab weeks 14, 34 and 76</td>
<td>3/58 (5.2%)</td>
<td>4/29 (13.8%)</td>
</tr>
<tr>
<td>Adverse events throughout follow up</td>
<td>1 new diagnosis cancer (testicular) 1 infusion reaction 1 infection (dental abscess)</td>
<td>3 new diagnosis cancer (prostate, colorectal &amp; thyroid) 1 spontaneous ileal perforation requiring emergency surgery 1 infusion reaction 2 infections (chest infection and shingles)</td>
</tr>
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</table>

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All authors have declared no conflicts of interest.
no adverse effects on maintenance treatment with Tacrolimus. 11 patients (43%) completed 12 months of follow-up.

Conclusion: Tacrolimus should be considered as an alternative treatment for patients with refractory UC in the out-patient setting. This is particularly useful if the patient is unwilling to consider a colectomy. With close monitoring and prompt action if necessary, it is safe and effective allowing patients an alternative immunosuppressant which may either avoid the need for a colectomy or, give some time to adjust to its implications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1710 A REAL LIFE EFFECTIVENESS OF ADALIMUMAB VERSUS GOLIMUMAB IN MODERATE-TO-SEVERE ULCERATIVE COLITIS: A MULTICENTER EXPERIENCE FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)

S. Renna1, F. Mocciaro2, M. Ventimiglia1, F.S. Macaluso1, R. Orlando1, M. Billeci1, M. Cappello4, M. Mendolaro5, A.C. Privitera6, C. Ferracane6, A. Armuzzi6

Aims & Methods: We aimed to compare the efficacy of Adalimumab and Golimumab in the induction and maintenance treatment of moderate-to-severe ulcerative colitis (UC). No comparable data between the 2 drugs are available up to now. Aims of this study were: to evaluate the efficacy of Adalimumab (ADA) and Golimumab (GOL) in the treatment of moderate to severe UC, respectively; to report the rate of clinical response and the rate of clinical remission. From June 2015 until April 2017, 197 consecutive pts with moderate to severe UC were treated with ADA or GOL. The efficacy was evaluated at 8 week and at the end of the follow up between naive and non naive pts and at the end of the follow up between naive and non naive pts.

Results: 113 pts were treated with ADA and 79 with GOL for a median follow up of 40.21 [20.32, 69.14] weeks for ADA and 34.00 [17.43, 54.79] weeks for GOL (p = 0.08). Eighty-eight pts were naïve to anti-TNFαs (59 ADA, 29 GOL, p = 0.09). No difference in Mayo Score value was observed between the 2 groups at the time of first drug injection (p = 0.92). After 8 weeks clinical benefit was achieved in 93/118 (78.8%) pts treated with ADA and 50/79 (63.3%) pts treated with GOL (p = 0.026). Clinical remission was achieved in 48/118 (40.7%) pts treated with ADA and 20/79 (25.3%) pts treated with GOL (p = 0.038). At the end of the follow up clinical benefit was achieved in 79/118 (66.9%) pts treated with ADA and 37/46 (80.0%) pts treated with GOL (p = 0.008). Clinical remission was achieved in 50/118 (42.4%) pts treated with ADA and 23/79 (29.1%) pts treated with GOL (p = 0.088). No difference was observed in clinical outcomes at 8 weeks and at the end of the follow up between naive and non naïve pts (p = 0.187). At the end of the follow up the median Endoscopic Mayo Score was 3.00 [0.00, 5.00] in pts treated with ADA and 4.00 [1.00, 7.00] in pts treated with GOL (p = 0.025). Univariate analysis revealed that age > 40 years at the time of first drug injection and age ≤ 40 years at the diagnosis were associated with higher remission rate in pts treated with ADA respect to pts treated with GOL at 8 weeks and at the end of the follow up (p = 0.046 vs 0.016 respectively). The rate of clinical remission increased > 5 years was associated with a higher remission rate in pts treated with ADA respect to pts treated with GOL at 8 weeks and at the end of the follow up (p = 0.037).

Conclusion: This is the first study where the comparable efficacy of ADA and GOL was evaluated. These real life data confirmed the efficacy of subcutaneous anti-TNFαs in the treatment of moderate to severe UC. ADA resulted to be more effective than GOL in inducing and maintaining clinical benefit. Larger prospective studies with longer follow up are warranted to confirm this data.

Disclosure of Interest: S. Renna: Abbvie, MSD, Takeda. F. Mocciaro: Abbvie, MSD F.S. Macaluso: MSD, Abbvie, Takeda A. Orlando: Abbvie, MSD, Takeda. All other authors have declared no conflicts of interest.

P1711 REAL-LIFE STUDY (GOURE-UC) EVALUATING THE EFFECTIVENESS OF GOLIMUMAB FOR THE TREATMENT OF ULCERATIVE COLITIS: AN INTERIM ANALYSIS FROM ITALIAN GROUP FOR THE STUDY OF INFLAMMATORY BOWEL DISEASE (IG-IBD)

D. Pugliese1, A. Variola2, A. Erivitiera3, M. Allocca4, F. Bossi5, M. Cappello6, G. Lorenzon7, S. Mazzuoli8, G. Scarpulla10, S. Festa1, L. Moser1, G. Tapet1, G. Bodini1, M. Di Girolamo10, L. Grossi1, F. Mocciaro8, C. Ricci9, S. Saibeni9, R. Spagnuolo10, E. Capoferro2, A. Armuzzi6

Aims: The efficacy of golimumab (GOL) in the treatment of inflammatory bowel disease (IBD) has been documented in several clinical trials. However, limited data is available in the real-life setting where clinicians treat UC patients following the results of clinical trials. We aimed to evaluate the clinical effectiveness of GOL in a real-life setting.

Methods: We conducted a retrospective, observational study (GOURE-UC), which included patients who received GOL as first-line treatment for UC (n = 577) or were switched from other anti-TNFα therapy (n = 182) for moderate-to-severe UC from 2012 to 2019. GOL was administered as monotherapy or in combination with other immunosuppressants or as maintenance therapy for up to 3 years. The primary endpoint was the prevention of colectomy. Secondary endpoints included the induction and maintenance of remission, safety, and tolerability.

Results: Of the 577 patients who received GOL as first-line therapy, 40% (n = 231) achieved clinical remission (CDAI ≤ 150) and 65% (n = 376) had a clinical response (CDAI ≥ 70) at week 12. At week 54, 57.1% of patients continued on GOL treatment. Ten patients (2.7%) underwent colectomy during the follow-up period. The most common adverse events were infections, gastroenteritis, and skin reactions. The overall incidence of serious adverse events was low, with 4.4% experiencing at least one serious adverse event.

Conclusion: This real-life study confirms the effectiveness and safety of GOL in treating UC, with a low incidence of serious adverse events. The results support the continued use of GOL in the real-life setting.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Anti-TNFs are well-established in therapeutically management of Crohn’s disease (CD). Real-life data on their pattern of use in a French clinical setting are, however, limited to this day.

Aims & Methods: The objective of this study was to examine for characteristics of CD patients and anti-TNF use in a real-life setting in France through the general sample of health insurance beneficiaries (EGB database) which includes reimbursement data from a sampled 1/97th of the French population. A cohort of 1280 patients with CD in the EGB database between 01/01/2010 and 31/02/2014 was retrospectively constituted, of which 189 (14.8%) initiated an anti-TNF treatment. Treatment discontinuation rate was analyzed during that period and were studied for the analysis. An additional analysis was performed based on French hospital discharge data (medical information systems program [PMSI]) from 8142 CD patients to compare results from the EGB database but only support infliximab use due to its exclusive hospital availability in France (adalimumab can be prescribed in both hospital and retail markets).

Results: 47.8% of anti-TNF treated patients were male and the mean age at the initiation of an anti-TNF treatment was 38. The mean duration between diagnosis and treatment initiation of an anti-TNF treatment was 6 years. Concomitant treatments such as corticosteroids and immunosuppressants were prescribed at least once in 63% and 47% of patients respectively. Around 35% of patients initiated a treatment with infliximab and 43% with adalimumab. Results at 12 months after anti-TNF initiation are presented in the table below:

Table 1: Anti-TNF use in patients initiating an anti-TNF treatment with at least 12 months of follow-up A\textsubscript{12} at 12 months, 13.6% of patients underwent surgery.

Results from the hospital discharge database confirmed some of our observations. Optimization rate for infliximab 12 months after initiation was similar (38.1%) at 12 months for infliximab and anti-TNF treatments. Treatment discontinuation rate was also within the same range observed and stable over time, with 10% of patients discontinuing infliximab treatment each year and a discontinuation rate after 12 months of treatment of 27.2%.

Conclusion: The general sample of health insurance beneficiaries’ database provides a unique representative sample to analyze and describe real-life usage of anti-TNF in Crohn’s disease patients in France.

References

P1714 PREDICTIVE FACTORS OF RESPONSE TO ANTI-TNF A TREATMENT OF COMPLEX ANO-PERINEAL FISTULAS IN CROHN’S DISEASE

Introduction: Ano-perineal fistulas (APF) are a common location of Crohn’s disease (CD). Their treatment is still disappointing. Identifying the predictive factors of response could guide the practitioner to adapt the anti-TNF treatment of each patient.

Aims & Methods: We performed a descriptive, longitudinal and retrospective study over a period of 14 years. We included all patients with a definite diagnosis of complex AP of CD treated with anti-TNF a with a minimum follow-up of one year. Patients less than 16 years of age or over 70 years were excluded and non-obstructing patients were also excluded. A univariate and multivariate statistical analysis was then carried out using the SPSS software to identify the predictive factors of response to the treatment.

Results: A total of 49 patients had complex AP treated with anti-TNF a. 10% of the patients had also recto-vaginal fistulas. The mean age was 31 years. The sex ratio women/men was 1.35. All of the patients had an MRI at diagnosis. Patients had concomitant antibiotics and seton drainage in all cases. 76% of the patients received azathioprine. After the induction phase, 53% of the patients received...
achieved clinical remission, 31% a partial clinical response and 12% a primary failure. This was maintained a during a median follow-up after a year of anti-TNF therapy. After a mean time of 13 months, 42% of the patients had a loss of response. The analytical study found that the absence of recto-colic involvement, CRP negativity and normalization of platelet count under treatment and achievement of clinical remission after the induction phase were predictive factors of long term good response to anti-TNF therapy. Clinical remission after the induction phase was the only independent predictive factor of long-term remission under maintenance treatment after multivariate analysis. However, partial response or remission of UC was predictive of a long-term good response as well as the presence of a recto-vaginal fistula and young age at diagnosis.

Conclusion: According to our results, the type of response obtained after the induction phase seems to be closely related to the subsequent development of our patients. Further studies assessing early therapeutic adaptation strategies could better evaluate this perspective in the event of a partial clinical response. In addition, rectal involvement and recto-vaginal fistulas are factors of poor response for which aggressive and specific treatment is essential.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1715 COMPARISON OF ORIGINAL AND BIOSIMILAR INFlixIMAB IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: A RETROSPECTIVE AND MULTICENTRIC STUDY IN SPAIN

H. Martínez Lozano1, J. Miranda Bautista1, K. Villa2, Y. González-Lama3, P. López Serrano2, J. L. Pérez Calle2, P. Pérez Galindo3, D. Carpio López4, V. Mataalla1, M. Calvo2, M.I. Vera1, I. Marín-Jiménez1, L. Menchón Vísol1

1Gastroenterología y Dietética. Hospital General de Castellón, Castellón, Spain
2Gastroenterología, University Hospital Puerta de Hierro Majadahonda, Madrid, Spain
3Gastroenterología, University Hospital Fundación Alcorcón, Madrid, Spain
4Gastroenterología, University Hospital Complex of Ponferrada, Ponferrada/Spain

Contact E-mail Address: helena18_3@hotmail.com

Introduction: The management of chronic inflammatory bowel disease (IBD) has experienced significant advance with the development of biologic therapy. Infliximab (IFX) was the first monoclonal antibody approved for IBD. The patent expiry of biologics and their relatively high costs that result in a significant economic burden on the healthcare system, has led to the development of biosimilar agents. The biosimilar IFX has been authorised for use in all the indications as the reference IFX. The demonstration of biosimilar IFX efficacy and safety equivalence was based on two pivotal clinical trials in rheumatic diseases. As a result of the extrapolation to IBD, there is growing controversy regarding the appropriate use of biosimilar IFX. The efficacy and safety of infliximab reference in inducing and maintaining remission in IBD has been extensively proven in clinical trials. However, the role of biosimilar IFX, has not been systematically investigated in clinical practice.

Aims & Methods: We aimed to compare the safety and efficacy in inducing and maintaining remission in IBD, between the reference IFX group and biosimilar IFX group. This retrospective, multicenter study was carried out at 4 tertiary hospitals (October 2013 to December 2016). The analysis included two cohorts of consecutive IBD patients. One cohort comprised of patients who were started original IFX since 2013. The second cohort included patients who were treated from the introduction of biosimilar IFX. Adverse events (AEs), demographic, clinical, endoscopic and laboratory data were collected on all patients. Efficacy was assessed according to response and remission at 14th, 54th week. For CD, response was defined as a decrease in partial Mayo score of 2 or more from baseline and a partial Mayo score of 1 or less was used to remission. For CD, response was defined as a decrease in Harvey-Bradshaw score of 3 or more from baseline, and a Harvey-Bradshaw score of 4 or less was used to remission. We used Student’s t-test for independent samples and Chi-square test. Time to withdrawal due to adverse effects was estimated using Kaplan-Meier survival analysis, and the log rank test was used to test for treatment group differences.

Results: The analysis included 346 consecutive IBD patients. 104 treated with original IFX and 242 with biosimilar IFX. 103 patients were diagnosed with CU, 208 with CD and 5 with indeterminate colitis. Overall median follow-up was 21 months. Baseline clinical activity scores were not significantly different among the 2 groups. Frequency of concomitant azathioprine and systemic steroids were not different among both groups. Patients in biosimilar infliximab group were more likely to experience previous biologic treatment failure (29.2% versus 20.2% in the original IFX, p = 0.0163). There were no significant differences in patients achieving response and remission at weeks 14 and 54. There were no significant differences in rate of withdrawals among the 2 groups (37.1% versus 36.9% for biosimilar IFX, p = 0.811). There were no significant differences in cumulative discontinuation rate due to AEs in original IFX and biosimilar IFX (42.42, (95% CI 39.49–45.34) months versus 44.61 (95% CI 42.66–46.56) months, log-rank test p = 0.292).

Conclusion: Our study showed similar efficacy and safety profile of biosimilar IFX compared to original IFX.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1716 DOES SEVERE ENDOSCOPIC COLITIS PREDICT STEROID REFRACTORY DISEASE IN ACUTE SEVERE CULITIS?

F. Er-Rahbi1, S. Elmajoubi1, E.M. Amine, W. Khannoussi, Z. Ismaili, G. Kharrasse

Gastroenterology, Ouja University Hospital, Ouja/Morocco

Contact E-mail Address: fadoua.errahbi@gmail.com

Introduction: Acute severe Colitis (ASC) is a severe complication of inflammatory bowel disease (IBD), for which there is no consensus definition. Its diagnosis is based on clinico-biological and endoscopic criteria. Low endoscopy is essentially positive for the diagnostic perspective of ASC as well as for the diagnosis of IBD

Aims & Methods: The objective of this study is to describe the endoscopic aspect of ASC and its interest in therapeutic management in our series of 48 cases it is a prospective descriptive and analytical study of a series of 48 cases of acute severe Colitis (ASC) collected during a period of 3 years (2014-2016) in the gastroenterology department.

Results: The average age of our patients is 39.8 ± 10.4 years with extremes ranging from 14 to 73 years. 51.9% (25 cases) were females. 28 cases (58.3%) were known to have IBD, with 24 cases of UC (58.3%). Initial endoscopy was performed in all patients. The average time to perform endoscopy (from the onset of symptoms) was 37 days (2 to 75 days). Severe endoscopic aspects were present in 30 patients: deep ulcer (29 cases), spontaneous bleeding (4 cases), friability (4 cases). Other endoscopic lesions found were erythema (12 cases), erosions (5 cases), superficial ulcer (25 cases), pseudo polyps (14 cases), contact bleeding (27 cases). Biopsy was performed in all patients, histology was in favor of UC in 64.8% cases. CMV viral inclusions were found in 2.08% of cases. First-line medical treatment is based mainly on parenteral corticosteroid therapy, had been established in all cases. A second-line treatment with anti-TNF agents was used in 5 cases (10.4%) while surgical treatment was indicated in 15 cases (31.25%) of which 12 cases had severe endoscopic colitis. Steroid refractory disease was associated with endoscopic severe colitis (p = 0.04). In mono-variated analysis, endoscopic severe colitis was found in more females than males (53.8 vs 43.3). With a statistically significant difference p = 0.020

Conclusion: Endoscopy in ASC occupies an important place to specify the morphological severity and thus make the positive diagnosis, the severe endoscopic colitis constitutes one of the predictive elements of steroid refractory disease requiring the use of a second therapeutic pallium.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1717 BASELINE CALPROTECTIN DOES NOT PREDICT RESPONSE TO BIOLOGICAL THERAPY IN ULCERATIVE COLITIS

D. Storey1, T. Skouras2, A. Bond1, S. Dodd3, S. Subramanian3

1Division Of Gastroenterology And Hepatology, Royal Liver and Broadgreen University Hospitals NHS Trust, Liverpool/United Kingdom
2Gastroenterology, Royal Liverpool University Hospital, Liverpool/United Kingdom
3Royal Liverpool University Hospital, Liverpool/United Kingdom

Contact E-mail Address: Thomas.skouras@nhs.net

Introduction: Response to biological drugs in ulcerative colitis (UC) is variable with induction response rates of 64.5% (vs 29.3% for placebo), 50.4% (vs 34.6% for placebo), 51.0% (vs 30.3% for placebo), 47.1% (vs 25.5% for placebo) for infliximab, adalimumab, golimumab and vedolizumab, respectively. Apart from prior exposure to anti-tumour necrosis factor (anti-TNF) agents and concurrent immunomodulatory therapy, predictors of clinical response and remission to biological drugs have not been well defined. We sought to investigate the utility of baseline faecal calprotectin (FC) and early change in FC in predicting clinical response and remission to biological therapy in UC.

Aims & Methods: Patients who were commenced on any biological therapy for UC and had a baseline FC at the time of commencement were included in this retrospective study. Disease activity was monitored serially by calculation of Simple Clinical Colitis Activity Index (SCCAI) or by Physician global assessment (PGA) or by treatment persistence. Clinical response was defined as decrease in SCCAI/CDAI of 3 or a decrease in PGA of ≥1 (n=5) to vedolizumab or ≥2 (n=5) to vedolizumab (P = 0.56). Similarly, responders (909 [13, 2100] [n=28]) and non-responders (850 [240, 2100] [n=13]) to anti-TNF agents had comparable calprotectin values at baseline. P = 0.93.

Conclusion: In a single-centre series of biological treated UC patients, baseline FC did not predict clinical response at 6 months.

Disclosure of Interest: S. Abraham: Advisor report for Abbvie, Janssen and Behringer-ingleheim On speaker bureau for Dr Falk, Abbvie and MSD. All other authors have declared no conflicts of interest.
P1718  EIGHT YEARS EXPERIENCE OF DRUG EFFICACY IN CROHN’S DISEASE PATIENTS: A PROSPECTIVE MULTICENTER REAL-LIFE STUDY

M. Lodyga1, P. Eder2, M. Gawron-Kiszka3, M. Hartleb1, J. Kierkus4, M. Klopopcka1, M. Kukulska5, M. Gryzmiłowski2, E. Malecka-Panas1, E. Poniewierska1, I. Smola1, T. Raw2, J. Regulà1, G. Rydzewska1

1Department Of Gastroenterology And Haematology, Medical University of Szczecin, Szczecin; Poland
2Department Of Gastroenterology, Hepatology, And Feeding Disorders, Children’s Memorial Health Institute, Warsaw/Poland
3Gastroenterology Nursing Unit, Centre For Therapeutic Endoscopy, University Hospital No2 Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University, Torun; Poland
4Department Of Gastroenterology And Haematology, Medical University, Wroclaw/Poland
5Department Of Digestive Tract Diseases, Medical University of Lodz, Lodz; Poland
6Department Of Gastroenterology And Haematology, Medical Centre for Postgraduate Education, Warsaw, Warsaw/Poland
7Faculty Of Medicine And Health Science, University Jana Kochanowskiego, Kielce/Poland

Contact E-mail Address: mlodyga@op.pl

Introduction: The prevalence of Crohn’s disease is important for planning of health care and allocation of clinical resources. In 2005, a National Patient’s Registry in Poland was established to collect demographic and clinical data. In 2013, 6030 of patients have been enrolled to the Polish National CD Patient’s Registry, conducted in 95 gastroenterology centers in Poland. Patient’s phenotype according to: Montreal classification, demographics, smoking, alcohol consumption, extraintestinal manifestation and medical treatment have been evaluated. The impact of demographic factors on the use of drugs from different groups (mesalazine, prednisone, azathioprine, methotrexate, anti-TNF), and medications efficacy and tolerance was assessed. The efficacy assessment was evaluated according to subjective 4-step scale. Similarly treatment tolerance was assessed according to 2-step scale.

Results: No gender effects were observed on the use or efficacy of individual drug classes, although greater tolerability of prednisone and azathioprine was observed in men (respectively 95.56 vs 93.82 and 93.4 vs. 91.65, both p < 0.005). Smoking did not affect the effectiveness and tolerability of the used medications. However surprisingly fewer smokers were treated with azathioprine, methotrexate, and anti-TNF in comparison to non-smokers (38 vs 45%, 0.5 vs 1.55%, 0.5 vs 11%, all p < 0.05). In patient’s declaring casual alcohol use, the efficacy and tolerability of prednisone was significantly better than in patient’s declaring abstaining (89 vs 84 and 96 vs 93%; p < 0.05). Referring to the Montreal classification, efficacy of mesalazine, prednisone and azathioprine was significantly higher in A1 group with the lowest in A2 patients (A1: 90, A2: 83, A3: 86 for prednisone, p < 0.05) In patient’s declaring casual alcohol use, the efficacy and tolerability of prednisone was significantly better than in patient’s declaring abstaining (89 vs 84 and 96 vs 93%; p < 0.05).

Conclusion: This is the first study comparing efficacy and tolerability of treatment methods used in “real-life” practice in Poland during last 8 years. Most observations are in compliance with data from clinical trials. Positive effect of casual alcohol consumption on efficacy of medications requires further observation. Interestingly some unexpected relationships, concerning similar efficacy of infliximab in different disease behavior was found. This effect requires also further observations in regards to more frequent use of anti-TNF drugs in last years.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1719  EFFICACY OF VEDOLIZUMAB INDUCTION THERAPY IN PATIENTS WITH SEVERE, MULTI-THERAPEUTIC RESISTANT INFLAMMATORY BOWEL DISEASE

R. Bor1, K. Farkas1, P. Mihellé2, K. Palatka1, T. Szamos2, P.L. Lakatos1, K.B. Geece3, P.A. Golovic4, A. Vincze2, L. Lakner5, M. Rutka1, A. Balint1, A. Fabian1, A. Milasz5, Z. Szepes1, T. Molnar1

1First Department Of Medicine, University of Szeged First Department of Internal Medicine First Department of Internal Medicine, Torun/Poland
2Second Department Of Internal Medicine, Semmelweis University, Budapest/Hungary
3Department Of Gastroenterology, University of Debrecen, Debrecen/Hungary
4Military Hospital–State Health Centre, Budapest/Hungary
51st Department Of Medicine, Semmelweis University Faculty of Medicine 1st Dept. of Medicine - 1st Department of Medicine, Semmel, Budapest/Hungary
61st Department Of Gastroenterology, Medical University of Szeged, Szeged/Hungary
71st Department Of Medicine, University of Pecs, Pecs/Hungary

Contact E-mail Address: bor.reni86@gmail.com

Introduction: Vedolizumab (VDZ) is the first gut-specific monoclonal antibody alternative to anti-tumor necrosis factor alpha therapy in patients with moderate-to-severe inflammatory bowel disease (IBD). It has been registered since 2016 in Hungary, but currently the high treatment costs are considerably limiting the availability of VDZ. All newly initiated VDZ therapy is individualized, it should be approved by the steering committee of five Hungarian IBD-specialists. This results in that VDZ therapy is available exclusively for patients in whom conventional treatment was ineffective or contraindicated.

Aims & Methods: The aim of our non-interventional retrospective study was to assess the efficacy of induction VDZ therapy: 41 patients with Crohn’s disease (CD) and 25 with ulcerative colitis (UC) received VDZ induction therapy between September 2016 and April 2017 in Hungary. Efficacy of induction therapy was assessed based on the changes of activity indices on week 14.

Results: A total of 35 IBD patients (27 Crohn’s; 8 ulcerative colitis) were included in our study. CD patients had a median time from diagnosis of IBD to LTBI of 9 years (0–48 years). LTBI treatment was the primary outcome of the study. Risk of TB reactivation still exists. The efficacy of LTBI treatment in IBD patients receiving biologic therapy and the timing of biologic therapy initiation has not been extensively studied.

Aims & Methods: In order to evaluate the effectiveness of LTBI treatment in IBD patients receiving biologic therapy, we conducted a retrospective review of all IBD patients diagnosed with LTBI following a tuberculosis skin test (PPD) or interferon gamma release assay (IGRA) and who received biologic therapy between January 1996 and August 2016. A total of 20 patient demographics, TB risk factors, chest x-ray findings, biologic agent used, prior and concomitant therapies, and LTBI treatment regimen. TB reactivation after completion of LTBI treatment was the primary outcome of the study. Risk of TB reactivation was calculated using McGill University’s ‘The Online TST/IGRA Interpreter’. Results: A total of 35 IBD patients (27 Crohn’s; 8 ulcerative colitis) were included in the study. Their median age was 38.3 years (14.4 years) and 68.6% were male (Table 1). The median time from diagnosis of IBD to LTBI was 9 years (0–48 years). Prior IBD therapies included corticosteroids (86%), aminosalicylates (83%), other immunosuppressants (69%). At least 43% of patients have been previously exposed to at least 1 biologic agent. The most common LTBI treatment regimen wasisoniazid (INH) for 9 months (n = 26, 74%). Biologic therapy used were infliximab (n = 14, 40%), adalimumab (n = 10, 29%), vedolizumab (n = 7, 20%), and certolizumab pegol (n = 4, 11%). Combination therapy with an immunomodulator and a biologic agent was administered in 57% of cases (n = 20). All patients were treated for LTBI and the majority (83%) was treated prior to

P1720  OUTCOMES OF TREATMENT FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE RECEIVING BIOLOGIC THERAPY

G. Piovazeri Ramos1, G. Strohl1, B. Al Bawardy2, W. A. Faubion2, K. Papadakis3, P. Escalante4

1Internal Medicine, Mayo Clinic, Rochester/United States of America/MN
2Gastroenterology And Hepatology, Mayo Clinic, Rochester/United States of America/MN
3Pulmonary And Critical Care Medicine, Mayo Clinic, Rochester/United States of America/MN

Contact E-mail Address: ramos.guilherme@mayo.edu

Introduction: Tuberculosis (TB) reactivation is of particular concern in patients with inflammatory bowel disease (IBD) treated with biologic therapies. Screening for latent tuberculosis infection (LTBI) is indicated prior to initiating treatment. The 2016 American Gastroenterological Association (AGA) guidelines recommend the use of an interferon-gamma release assay (IGRA) or tuberculin skin test (TST) for the identification of LTBI in patients with IBD. This is the first systematic review to evaluate the effectiveness of LTBI treatment in IBD patients receiving biologic therapy and the timing of biologic therapy initiation has not been extensively studied.

Aims & Methods: In order to evaluate the effectiveness of LTBI treatment in IBD patients receiving biologic therapy, we conducted a retrospective review of all IBD patients diagnosed with LTBI following a tuberculin skin test (PPD) or interferon gamma release assay (IGRA) and who received biologic therapy between January 1996 and August 2016. The median time from diagnosis of IBD to LTBI was 9 years (0–48 years). Prior IBD therapies included corticosteroids (86%), aminosalicylates (83%), other immunosuppressants (69%). At least 43% of patients have been previously exposed to at least 1 biologic agent. The most common LTBI treatment regimen wasisoniazid (INH) for 9 months (n = 26, 74%). Biologic therapy used were infliximab (n = 14, 40%), adalimumab (n = 10, 29%), vedolizumab (n = 7, 20%), and certolizumab pegol (n = 4, 11%). Combination therapy with an immunomodulator and a biologic agent was administered in 57% of cases (n = 20). All patients were treated for LTBI and the majority (83%) was treated prior to

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starting biologic therapy. The median time from initiation of LTBI treatment to biologic was 43 days (IQR 23–40). The median duration of follow-up was 2.9 ± 3.3 years. The median calculated annual risk of developing active TB without treatment was 0.52% (0.08%–1.3%). Of the cohort studied, only one patient taking adalimumab monotherapy after completing 6 months of INH therapy developed reactivation of TB. The estimated TB reactivation rate in our cohort was 0.98 cases per 100 patient-years of follow up.

### Table 1: Cohort Characteristics and Estimated Post-treatment Tuberculosis Reactivation Rate

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Residual disease patients</th>
<th>Median time to POR</th>
<th>CI 95%</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>Events</td>
<td>LL</td>
</tr>
<tr>
<td>Residual disease patients</td>
<td>187</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>General characteristics</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mean Age (years)</td>
<td>38.3 (±14.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Sex</td>
<td>24/35 patients</td>
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<td></td>
</tr>
<tr>
<td>Type of Inflammatory Bowel Disease (IBD)</td>
<td>Ulcerative Colitis (23%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crohn’s Disease (77%)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mean Time since IBD</td>
<td>9 years (range: 0–48)</td>
<td></td>
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<tr>
<td>Type of Biologic Therapy</td>
<td>Infliximab (40%)</td>
<td></td>
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<tr>
<td>Adalimumab (29%)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vedukzimab (20%)</td>
<td></td>
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<tr>
<td>Cortolzimab (12%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type Latent Tuberculosis Therapy</td>
<td>Isoniazid (INH) for 9-months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy</td>
<td>(74%) INH for 6-months (11%) Rifampin 4-months (9%) INH + Rifampin for 3-months (3%) Others (3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median time to initiate biologic therapy</td>
<td>43 days (range: 4–3653)</td>
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<td></td>
</tr>
<tr>
<td>Mean duration of follow-up</td>
<td>2.9 ± 3.3 years</td>
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<td></td>
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<tr>
<td>Mean Pre-treatment Risk of Development of Tuberculosis</td>
<td>0.52%/year (range: 0.08%–1.3%/year)</td>
<td></td>
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<tr>
<td>Estimated Post-treatment</td>
<td>0.98 cases per 100 patient-years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuberculosis Reactivation Rate</td>
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</table>

**Conclusion:** Treatment for LTBI in patients with IBD treated with biologics is effective, but does not eliminate the risk of reactivation, which occurred at a rate of 0.98 cases per 100 patient-years in general. Additional studies with extended follow-up are warranted to further characterize the efficacy of LTBI treatment in these patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1721 CLINICAL CHARACTERISTICS AND MANAGEMENT OF CROHN’S DISEASE IN PATIENTS WITH RESIDUAL DISEASE AFTER SURGERY COMPARED WITH CURATIVE SURGERY. RESULTS FROM PRACTICROHN STUDY**


1Gastroenterology Unit, Hospital Germans Trias i Pujol, Barcelona/Spain
2Gastroenterology Unit, Hospital Universitario La Paz, Madrid/Spain
3Gastroenterology, Hospital General Universitario de Alicante, Alicante/Spain
4Gastroenterology Unit, Hospital Policlínico La Fe and Ciber-EHD, Valencia/Spain
5Gastroenterology Unit, Hospital Universitario Reina Sofia, Córdoba/Spain
6Gastroenterology Unit, Complejo Hospitalario Universitario de Santiago, Santiago de compostela/Spain
7Medical Department, MSD, Madrid/Spain

**Contact E-mail Address:** eugenidomenex@gmail.com

**Introduction:** Resection in Crohn’s disease (CD) intends to be a curative surgery, but 43% of patients will have a relapse. We aimed to describe the characteristics and management of patients with residual disease after surgery (RD) and to compare these with patients with curative surgery (CS) in post-operative CD patients.

Aims & Methods: PRACTICROHN was a retrospective study that included adult patients from 26 Spanish hospitals who underwent CD-related ileocolonic resection in 2015. We identified all CD patients with a prior surgical resection with median time to POR being longer in patients who received prophylaxis compared to curative surgery. In the case of residual disease although prophylactic treatment is useful, most of the patients will present POR. RD is a factor of poor prognosis in post-operative CD patients.

**Disclosure of Interest:** L. Cea-Calvo: MSD employee
B. Romero: md employee
B. Juliá De Páramo: MSD employee

All other authors have declared no conflicts of interest.

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**P1722 SEVERITY OF BILE ACID MALABSORPTION CORRELATES WITH LENGTH OF ILEAL RESECTION IN CROHN’S DISEASE**

T. Skouras1, Y. Prasad2, S. Dodd3, S. Subramanian4

1Gastroenterology, Royal Liverpool University Hospital, Liverpool/United Kingdom
2Royal Liverpool University Hospital, Liverpool/United Kingdom

**Contact E-mail Address:** Thomas.skouras@nhs.net

**Introduction:** Bile acid malabsorption (BAM) is a common cause of diarrhoea in Crohn’s disease (CD) patients with ileal resection and can lead to complications such as renal and biliary stone disease. BAM is usually diagnosed by selenium labelled homotaurocholic acid test (75SeHCAT) but its availability is limited. Thus, a large proportion of resected CD patients either remain underdiagnosed or subject to empirical therapy. There is a paucity of studies examining the correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM.

**Aims & Methods:** We identified all CD patients with a prior surgical resection who underwent 75SeHCAT testing at our institute. Testing was based on the treating clinician’s discretion. The length of resected ileum was recorded from histopathology report. We conducted a Spearman’s correlation test to check for correlation between length of resected ileum and percentage retention on 75SeHCAT.

**Conclusion:** Resection in Crohn’s disease can lead to complications such as renal and biliary stone disease. BAM is usually diagnosed by selenium labelled homotaurocholic acid test (75SeHCAT) but its availability is limited. Thus, a large proportion of resected CD patients either remain underdiagnosed or subject to empirical therapy. There is a paucity of studies examining the correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM. There was moderate correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM. There was moderate correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM.
P1723 A MICROBIAL SIGNATURE OF PSYCHOLOGICAL DISTRESS IN IRRTIBLE BOWEL SYNDROME

H. Duboc

Introduction: Irritable Bowel Syndrome (IBS) is associated with alterations along the brain-gut-microbiota axis. Previous studies have suggested a parallel segregation of microbial features with psychological burden in IBS (1,2,3).

Aims & Methods: This increases the need to evaluate microbial correlates of psychological distress, anxiety, depression and stress perception. 16s rRNA fecal microbial analyses (Mignola MiSeq, V1-2 amplified from total DNA) in 48 IBS patients (Rome-III criteria, mean age 42 years, 35 female subjects, 25 diar- rhoea-dominant, 5 constipation-dominant and 18 alternating-type IBS). Assessment of psychological and clinical variables with validated questionnaires, microbial analysis via QIIME. Machine learning to predict psychological distress through a composite model of bacterial features. Correlational analysis and comparisons in bacterial abundance between subgroups defined by thresholds in psychological variables.

Results: Thirty-one patients (65%) showed psychological distress, 22 (31%) anxiety, and 10 depression (21%). Psychological distress was uncorrelated with IBS severity (Spearman’s ρ = 0.05, p = 0.736). Microbial beta diversity was significantly associated with distress and depression (q = 0.044 each). A random forest model using 148 microbial signatures was able to correctly classify patients regarding symptom severity of IBS (AUC = 0.89). Patients exceeding thresholds of distress, anxiety, depression and stress perception showed significantly higher abundances of Proteobacteria (LDA = 2.5). Patients with anxiety were characterized by higher abundances of Bacteroidetes (LDA = 3.0). Distinctly with Lachnospiraceae with L. fumariarum (q = 0.58, p = 0.018), anxiety positively with Anaerotruncus (p = 0.65, q = 0.001).

Conclusion: A microbial signature accurately predicted the presence of psychological distress. Psychological variables significantly segregated gut microbial features, underscoring the role of brain-gut-microbiota interactions in IBS. Supported by Austrian Society of Gastroenterology and Hepatology (ÖGGH) and funds of the Österreichische Nationalbank, Fund project number: 16506.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1724 SACCHAROMYCES BOULARDII CNCM I-745 LOWERS FECAL CHOLIC ACID CONCENTRATIONS DURING ANTIBIOTIC TREATMENT IN HEALTHY VOLUNTEERS: A NEW MICROBIOTIC SIGNATURE IN THE PROTECTION AGAINST CLOSTRIDIUM DIFFICILE INFECTION

H. Duboc1, C. Chong Nguyen1, T. Kabbani2, D. Rainteau1, L. Humbert1, C. Chong Nguyen1, T. Kabbani2, D. Rainteau1, L. Humbert1, J. Peter, C. Fournier, L. Knoblich, B. Keip, G. Moser

Introduction: Saccharomyces boulardii (SB) CNCM I-745 demonstrated clinical efficacy in the secondary prevention of post-antibiotic Clostridium difficile infection (CDI), but the mechanism remains unclear. Cholic acid (CA) is a primary BA which facilitates spore germination in vitro, increases in stool during antibiotic therapy. The concomitant administration of SB during AC treatment significantly reduces this CA peak. These results highlight new human data on a potential mechanism for post-antibiotic CDI: alteration of the microbiota can encourage germination of C. difficile spores in increased CA concentrations and reduced concentrations of secondary BAs. The effectiveness of SB in preventing recurrent CDI may be explained, in part, through modulation of microbiota changes that influence the balance of pro- and anti-germination BA concentrations.

Disclosure of Interest: H. Duboc: I worked with Biocodex as a consultant for the development of a free smartphone App for patients suffering of constipation.

Aims & Methods: We assessed the abundance of Fusobacterium in CRC, colorectal mucosa and saliva. We extracted DNA from mucosal biopsies and measured bacterial levels by quantitative PCR of the 16S ribosomal RNA gene. We also investigated the homology of F. nucleatum in oral cavity and CRC.

Results: In 51 CRC cases, Fusobacterium positivity was significantly higher in CRC compared to controls (p < 0.05). Fusobacterium was more detected in CRC (12.9%) than in normal tissue (2.3%) respectively. The detection rate of F. nucleatum was 96% in saliva, 95% in CRC by next-generation sequencing. A total of 15 patients with CRC were included to check the homology of F. nucleatum in saliva and CRC. From the 15 patients, 9 were F. nucleatum-positive in saliva and CRC. For the 6 patients who were F. nucleatum-positive in saliva, from these patients who were F. nucleatum-positive in saliva and CRC, we next looked for the results of AP-PCR and 6 patients have shown common band patterns.

Conclusion: The results support a link between the abundance of F. nucleatum in oral cavity and CRC. Our data also indicate that there may be a route from the oral cavity to the CRC in F. nucleatum positive cases. We are now identifying DNA sequences, specific for the objective strains.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. Castellarin, M., Warren, R. L., Freeman, J. D., Dreolini, L., Krzywiński, M., Strain, D., Barnes, R., Wexler, E., Matta, S., & Holt, A. 2012. Fusobacterium nucleatum infection is prevalent in human colorectal adenomas and cancers, some specific bacterium have been identified as a related factor. Recent studies have reported a high abundance of Fusobacterium nucleatum (F. nucleatum) in colorectal cancer (CRC) subjects compared to normal subjects12. F. nucleatum is also known as a pathogenic species of oral microbiota, but it is not known if F. nucleatum plays a role in other part of the digestive tract. F. nucleatum may affect metabolic pathways for the carcino- genesis5. We examined whether there is relationship between F. nucleatum oral cavity and CRC.

Aims & Methods: We assessed the abundance of Fusobacterium in CRC, colorectal mucosa and saliva. We extracted DNA from mucosal biopsies and measured bacterial levels by quantitative PCR of the 16S ribosomal RNA gene. We also investigated the homology of F. nucleatum in oral cavity and CRC.

Results: In 51 CRC cases, Fusobacterium positivity was significantly higher in CRC compared to controls (p < 0.05). Fusobacterium was more detected in CRC (12.9%) than in normal tissue (2.3%) respectively. The detection rate of F. nucleatum was 96% in saliva, 95% in CRC by next-generation sequencing. A total of 15 patients with CRC were included to check the homology of F. nucleatum in saliva and CRC. From the 15 patients, 9 were F. nucleatum-positive in saliva and CRC. For the 6 patients who were F. nucleatum-positive in saliva, from these patients who were F. nucleatum-positive in saliva and CRC, we next looked for the results of AP-PCR and 6 patients have shown common band patterns.

Conclusion: The results support a link between the abundance of F. nucleatum in oral cavity and CRC. Our data also indicate that there may be a route from the oral cavity to the CRC in F. nucleatum positive cases. We are now identifying DNA sequences, specific for the objective strains.
P1727 HUMAN MILK OLIGOSACCHARIDES: A NEW STRATEGY AGAINST POST-ANTIBIOTIC CLOSTRIDIUM DIFFICILE INFECTION?
L. K. Vigsnaes
Business Development, Glycom A/S, Horsholm/Denmark

Contact E-mail Address: louise.vigsnaes@glycom.com

Introduction: Human Milk Oligosaccharides (HMOs) are a family of complex carbohydrates found in high concentrations in human milk and which are now becoming commercially available. In clinical studies, in both infants and adults, HMOs powerfully and specifically modulate the gut microbiota by increasing bifidobacteria and reducing certain pathogenic bacteria (1,2). Also, HMO bacterial consumption results in the production of beneficial metabolites such as short chain fatty acids and the lowering of pH. Hence, the selective growth of bifidobacteria on HMOs can create an ecological niche that is more colonization resistant against pathogens. Bifidobacteria may also have a direct impact on microbial toxins by reducing their level and cytotoxic effect (3). Antibiotics, especially broad-spectrum antibiotics, dramatically impact the microbiota and its balance, and have been implicated in the pathogenesis of many health conditions including gastrointestinal symptoms such as diarrhoea (4). The most commonly cited mechanism for antibiotic-associated diarrhoea is intestinal overgrowth of the pathogenic bacterium, Clostridium difficile.

Aims & Methods: The aim of this study is to investigate, in in vitro models of C. difficile infection, (1) the impact of HMOs on the microbiotal community and activity (e.g. bacterial metabolites and pH), and (2) the anti-pathogenic activity of HMOs against C. difficile, with a focus on preventing recurrence of the infection. Two in vitro models, each using human faecal microbiota infected with C. difficile, were used to examine the impact of HMOs on bacterial metabolic production and C. difficile infection. One model is a 48 hour batch fermentation, while the other is a simulated gut model, run for 3 weeks post infection, which simulates the infection cycle of C. difficile after antibiotic treatment.

Results: The study revealed that the HMOs increase the level of bifidobacteria, reduce the level of beneficial bacterial metabolites such as short chain fatty acids and decrease pH compared to a control with no added HMOs. Additionally, HMOs reduced the level of C. difficile; in some cases completely eradicated C. difficile below detection limits. This antimicrobial effect of HMOs on C. difficile was pH-independent, hence another mechanism is causing the anti-pathogenic activity of HMOs.

Conclusion: Conclusively, the results show that HMOs can impact C. difficile infection in an in vitro system, which suggests HMOs as a potential approach to reduce risk of antibiotic associated diarrhoea and post-antibiotic C. difficile infection.


References
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P1728 CHANGES IN GUT MICROBIOTA ASSOCIATED WITH AGING IN OBESE INDIVIDUALS
R. Tanaka1, M. Matsuzaka1, S. Nakaji2, Y. Sasaki3
1Medical Informatics, Hiroaki University, Hiroaki/Japan
2Hiroaki University, Hiroaki/Japan

Contact E-mail Address: r-tanaka@hiroaki-u.ac.jp

Introduction: It has been reported that the composition of human gut microbiota changes with aging, body mass index (BMI), diet and other environmental factors. In particular, the relationship between gut microbiota and obesity has been underlined frequently because intervention in the microbiota may reduce body fat. In this study, we investigated the relationship between obesity and composition of gut microbiota in healthy Japanese population.

Aims & Methods: Participants were 1,082 healthy Japanese adults (410 males, 672 females) who participated in the Iwaki Health Promotion Project in 2014. Faecal samples were analysed by 16S rRNA gene-targeted sequencing to determine family composition of gut microbiota. They were classified into obese group (BMI ≥ 25) and normal weight group (BMI < 25) according to Japanese standard and were stratified into 7 age groups, 19-29, 30-39, 40-49, 50-59, 60-69, 70-79 and 80-90. The family composition of gut microbiota in each age group was compared between obese and normal group.

Results: There were 235 obese participants, and 847 normal ones. The proportion of Bacteroidiaceae decreased substantially, and Ruminococcaceae increasing slightly with aging in obese group. The proportion of Bifidobacteriaceae, Lachnospiraceae and Porphyromonadaceae decreased gradually with aging in both groups.

Conclusion: Changes in composition of gut microbiota with aging were different between obese and normal group. Some previous researches observed differences of gut microbiota between obese and normal group, but many of the researches did not take aging into consideration. Our study indicated that different intervention stratified with age could be needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
BMC Infect Dis 2014; 14: 733.

P1729 BACTERIOCIN PRODUCTION BY MUCOSAL BACTERIA IN COLONRECTAL NEOPLASIA
D. Kohnova1, M. Forstova2, P. Moravkova2, S. Rejchrt1, D. Smajs3, J. Bures1
12nd Of Internal Medicine - Gastroenterology, Charles University, Faculty of Medicine and University Hospital in Hradec Kralove, Hradec Kralove/Czech Republic
3Department Of Clinical Microbiology, Charles University, Faculty of Medicine and University Hospital in Hradec Kralove, Hradec Kralove/Czech Republic

Contact E-mail Address: darina.kohnova@seznam.cz

Introduction: Due to its high incidence, sporadic colorectal cancer (CRC) remains a major public health problem in the Czech Republic. The exact contribution of large intestinal bacteria to the pathogenesis of CRC has not been elucidated yet, still the mucosal, not the luminal, microbiota seem to play the crucial role. Bacteriocins are small proteins, produced by probiotic bacteria, that inhibit other bacteria and induce the death of the target bacteria. Bacteriocins are divided into more groups, colicins and microcins are the most important ones. Bacteriocins possess antibacterial, antineoplastic, pro-inflammatory and probiotic effect.

Aims & Methods: The aim of this prospective study was to evaluate bacteriocin production by mucosal large intestinal bacteria in colorectal neoplasia. We used an original methodology reported by our group (1). Mucosal biopsies were taken in the caecum, transverse colon and rectum within the colonoscopy in patients with non-advanced colorectal adenoma, non-a-A (11 men, 10 women, mean age 65 ± 10), advanced colorectal adenoma, a-A (which was defined as neoplasia larger than 10 mm and/or containing villous component and/or containing high grade dysplasia; 13 males, 17 females, mean age 70 ± 10) and in the controls (average risk population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 57 ± 14). Bacteriocin production by mucosal culture bacteriocin production by each strain was investigated by PCR methods.

Results: A total of 249 mucosal biopsies were taken (60 controls, 63 non-a-A, 60 a-A, 66 CRC) and samples were further investigated. Colcin producing strains were isolated in 22% (13/60) controls, 59% (37/63) non-a-A, 55% (33/60) a-A and in 76% (50/66) CRC. Significantly higher production of colcins was observed in non-a-A, a-A and CRC group when compared to controls, p < 0.001. Significantly higher production of colcins was confirmed in patients with CRC compared to patients with a-A, p = 0.016. Microcin producing strains were isolated in 23% (14/60) controls, 56% (35/63) non-a-A, 78% (47/60) a-A and in 62% (41/66) CRC. Significantly higher production of microcins was observed in non-a-A compared to controls, p = 0.002, in a-A and CRC group when compared to controls, p < 0.001. Microcins were produced more frequently in patients with a-A compared to those with non-a-A, p = 0.008.

Conclusion: Strains isolated from large bowel mucosa in patients with colorectal neoplasia produce bacteriocins more frequently compared to those with normal findings on colonoscopy. We presume, that mucosal large intestinal microbiota with their products including bacteriocins play an important role during the development of colorectal neoplasia.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
BMC Infect Dis 2014; 14: 733.

P1730 CARBOXYLIC AND AMINO ACIDS MIXTURE IDENTICAL TO THE METABOLITES OF THE PROBIOTIC ESCHERICHIA COLI ML17 INDUCES BACTERIOCIN SYNTHESIS IN PROBIOTIC LABACTICILLUS HELVETICUS D75 AND D76 STRAINS AND ENHANCES THEIR ANTIMICROBIAL ACTIVITY AGAINST TEST PATHOGENS
T. Vakhitov1, V. Toropov1, O. Shalaeva1, S. Sitkin2, E. Tkachenko3
1Dept. Of Microbiology, State Research Institute of Highly Pure Biopreparations, St. Petersburg/Russian Federation
2Dept. Of Internal Diseases, Gastroenterology & Dietetics, North-Western State Medical University named after I.I. Mechnikov, St. Petersburg/Russian Federation
3Kirov Military Medical Academy, St. Petersburg/Russian Federation

Contact E-mail Address: tkachenko@mail.ru

Introduction: The production of bacteriocins is considered as the key metabolic function of gut microbiota and as the inherent property of probiotic strains. Bacteriocins and metabolites of probiotic microorganisms (metabiotics) can optimize host-specific physiological functions related to human health.

Aims & Methods: This study aims to: (a) detect the bacteriocin genes of probiotic strains Lactobacillus helveticus D75 (NCBI Reference Sequence NZ_CP002829.1) and Lactobacillus helveticus D76 (NCBI Reference Sequence NZ_CPI6827.1) and (b) evaluate in vitro effects of the carboxylic and amino acids mixture identical to the metabolites of the probiotic Escherichia coli strain M17 (components of ActiFood®-S dietary supplement). The antagonistic activity of Lactobacillus helveticus D75 and Lactobacillus helveticus D76 strains was estimated by the deferred antagonism method. The identification of bacteriocin genes was performed by PCR using helveticin J gene primers. Amplified fragments were sequenced using ABI PRISM® 310 Genetyx Analyzer and were analyzed using NCBI/BLAST.

Results: The identical sequences of 537 bp homologous to gene fragment of helveticin of Lactobacillus helveticus DPC 4371 (lvi_1632 gene) were detected
in DNA of both probiotic strains. Sequencing of these fragments showed differences in the incidence of severe diseases between the FMT-treated patients and the AB-treated patients. The addition of the carboxylic and amino acids mixture (Actibloc®-S) results in 2-2.5-fold enhanced antimicrobial activity of both tested probiotics. The best pathogens (Escherichia coli O75 and Salmonella Enteritidis) were significantly increased in the FMT group, showing the potential of gut microbial metabolites mixture and identified probiotic bacteriocins for human health has yet to be realized.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1731 LONG-TERM SAFETY AND EFFECT ON GASTROINTESTINAL SYMPTOMS OF FECAL MICROBIOTA TRANSPLANTATION

P. Arkkila1, A. Hillamaa2, J. Jalaraka3, E. Mattila4, V. Anttilla5, R. Satozeki6
1Gastroenterology, Helsinki University Hospital, Helsinki, Finland
2University of Tartu, Tartu, Estonia
3Helsinki University, Helsinki, Finland
4Infectious Diseases, Helsinki University Hospital, Helsinki, Finland
Contact E-mail Address: perttu.aarikka@hus.fi

Introduction: Fecal microbiota transplantation (FMT) has been shown to be effective in treating recurrent Clostridium difficile infection. Concern has been raised about the long-term safety of FMT.

Aims & Methods: The aim of this study was to determine the long-term safety of fecal microbiota transplantation (FMT), and its effect on gastrointestinal symptoms (GI) in Clostridium difficile (CDI) patients. We studied 84 patients of which 45 received an FMT treatment via colonoscopy and 39 served as controls receiving antibiotic treatment (AB) for the recurrent CDI and followed their recovery up to 3.8 years. All together 130 patients (55 patients in the FMT group and 75 patients in the AB group were sent a 45-item questionnaire collecting information about the patient demographics, their physical and mental health, including allergies, infections, gastroenterological conditions such as IBD and IBS, diabetes, autoimmune diseases, neurological disorders, mental wellbeing and malignancies. Response rate for the questionnaire was 64.6%.

Results: There were no differences in the incidence of severe diseases between the groups including the incidence of IBD, diabetes, diseases of the nervous system, autoimmune disease, incidence of colon polyps and cancer. Change of weight was neither different between groups (kg/SD): FMT + 2.5 (5.6) and AB + 1.3 (5.6), p = 0.51. The AB treated subjects recorded more frequently that their bowel function had become worse and more irregular after the treatment (p = 0.011, P = 0.001) compared to FMT group. 77.8% of the patients treated with FMT experienced GI symptoms related to IBS whereas 92.3% of antibiotic-treated patients recorded these symptoms (P = 0.006). AB patients experienced more symptoms of the upper intestinal tract than the FMT patients (p = 0.001). In this cohort 97.6% of the FMT-treated patients and 60% of AB treated patients would prefer in the future that their initial treatment to be FMT instead of antibiotics.

Conclusion: FMT is a rational, durable, safe, and acceptable treatment option for patients with recurrent CDI. No severe diseases appeared after FMT and FMT seem to relieve GI symptoms better than antibiotic treatment. FMT and AB treated patients would prefer in the future that their initial treatment for recurrent CDI to be FMT instead of antibiotics.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1732 CLOSTRIDIUM DIFFICILE-ASSOCIATED DISEASE IN A PORTUGUESE HOSPITAL CENTER

T. Gago, A. Antunes, A.M. Vaz, P. Queirós, J. Roseira, A. C. Cunha, A. Ramos, H. Guerreiro
Serviço De Gastroenterologia De Faro, Centro Hospitalar do Algarve, Faro, Portugal
Contact E-mail Address: taniagago@gmail.com

Introduction: Clostridium difficile-associated disease (CDAD) is an infection caused by Clostridium difficile, gram-positive, anaerobic, spore-forming and toxin-producing bacteria. Infection is recognized as the leading cause of diarrhea associated with health care services in the developed countries. In Portugal epidemiological data are limited.

Aims & Methods: Characterize Clostridium difficile-associated disease episodes in a Portuguese Hospital Center. Retrospective analysis of 250 hospitalized patients with CDAD, in Centro Hospitalar do Algarve, between 2011 and 2015. The data was obtained from clinical processes and statistical analysis was performed with SPSS version 23.

Results: The patients were mostly women (52%). The mean incidence of CDAD was 0.21% and the patients had an associated mortality of 28%. The year with the highest incidence was 2015 (0.53%) but with a lower associated mortality rate. CDAD was mostly acquired at the hospital level (75.6%) and the mean length of hospital stay was 33 days. About 82.4% of the cases were first occurrence and the remaining (18.6%) were recurrences of CDAD. The majority of the patients under study performed Proton Pump Inhibitors-IBP (52.8%) and antibiotic therapy (74.4%) (26.8% made a single antibiotic, and 23.6% 2 or more distinct antibiotics). Penicillin antibiotic class was the most used, followed by Cephapirin (21.5%), Fluoroquinolones (11.4%) and Macrolides (10.1%).

Conclusion: A significant increase in the incidence of CDAD was observed in this study. This increase may be related to several factors, such as the improvement of laboratory diagnostic methods, increased antibiotic prescription, hospital contamination with Clostridium difficile spores or with the appearance of new and more virulent Ribotypes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1733 THE EFFICACY OF SELECTIVE ARTERIAL EMBOLIZATION IN THE MANAGEMENT OF DIVERTICULAR BLEEDING

1Digestive Disease Center, Yokohama city Minato Red Cross Hospital, Yokohama/Japan
2Gastroenterology, Yokohama-city Red Cross Hospital, Yokohama/Japan
3Gastroenterology, Tokyo Medical and Dental University, Graduate School of Medical Science, Tokyo/Japan
Contact E-mail Address: yfukami.gast@gmail.com

Introduction: Colectic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. Persistent bleeding or acute massive bleeding of presenting with hemodynamic disorders requires an interventional treatment. The question of what is the best treatment for acute diverticular bleeding remains...
unanswered. In our institution, we gastroenterologists perform interventional radiology to feasibility rule out an upper GI source.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1735 GLASGOW-BLACHFORD SCORE ACCURATELY PREDICTS THE NEED OF TRANSFUSION IN ACUTE LOWER GASTROINTESTINAL BLEEDING. A DIAGNOSTIC ACCURACY EVALUATION STUDY

S. Machlib, E. Martinez-Bauer2, P. Garcia-Iglesias1, A. Lira1, C. Marmol3, G. Llibre1, J.P. Da Costa1, M. Gallach1, V. Puig-Divi1, F. Junquera1, R. Campo1, X. Calvet1, E. Brullet1, Gastroenterology, Hospital Universitari Parc Taulí, Sabadell/Spain 2Corporacion Parc Taulí, Sabadell/Spain

Contact E-mail Address: stmachlab@tauli.cat

Introduction: The incidence of acute lower gastrointestinal bleeding (LGB) is increasing in Western countries, but the predictors of its outcome are not well studied and defined.

Aims & Methods: The aim of this study was to compare the accuracy of Glasgow-Blachford score (GBS) with three available risk scores (State, Velayos and Newman) for predicting the need of any clinical intervention (endoscopic therapy, vascular embolization, surgery and need of transfusion) in patients admitted for acute LGB. Retrospective study from January 2013 to December 2015 in a university tertiary care hospital. Patients with acute LGB were identified using the International Classification of Diseases (9th Revision) and Clinical Modification codes for admission diagnosis. Scores were retrospectively calculated according to clinical reports data. Area under the receiver operating characteristic curve (AUROC), sensitivity, specificity, positive and negative predictive values were calculated for four scores. Also the best cut-off of each score was chosen from using the AUROC curve values.

Results: A total of 298 (51%) men consecutive patients with acute LGB were identified. Median age was 76.1 years (range 25.4–96.5), 201 (67.4%) of patients were older than 70 years. Five patients (1.7%) died, 18 (6%) developed recurrent bleeding, 89 (29.9%) needed transfusion, 30 (12.1%) received endoscopic therapy, and 3 (1%) underwent transcatheter arterial embolization. No patient required any surgical intervention. AUROC of GBS score was 0.87 (95%CI:0.82–0.91) for the need of transfusion, and 0.82 (95%CI:0.76–0.87) for the need of any clinical intervention. AUROC for the need of transfusion and clinical intervention were 0.68 (95%CI:0.61–0.74) and 0.67 (95%CI:0.60–0.73) for the Strate score, 0.77 (95%CI:0.71–0.83) and 0.74 (95%CI:0.68–0.80) for the Velayos score and 0.78 (95%CI:0.72–0.85) and 0.74 (95%CI:0.68–0.81) for the Newman score, respectively. GBS was significantly more accurate than LGB risk scores for predicting the need of transfusion. Although AUROC of GBS was also numerically better for predicting the need of any clinical intervention, the difference was only significant when comparing with the Strate score. All the risk scores were more accurate for determining the need for transfusion than for the need of clinical intervention. Sensitivity, specificity and positive and negative predictive values for each score are shown in table 1.

Conclusion: The GBS was superior to the 3 LGB risk scores for predicting the need for transfusion and clinical intervention. The GBS may be an useful tool for risk stratification in acute LGB.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Sensitivity (S), specificity (Sp), Positive (PPV) and negative (NPV) predictive values of the different scores for detecting the need of transfusion (TRF) or clinical intervention (CI). *Best cut-off scores for Blachford score were 6 for transfusion and 4 for clinical intervention. Values are expressed as %.

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<th>SPF PV</th>
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Conclusion: The GBS was superior to the 3 LGB risk scores for predicting the need for transfusion and clinical intervention. The GBS may be an useful tool for risk stratification in acute LGB.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1734 ACCURACY OF THE NASOGASTRIC TUBE AND THE BUN/CREATININE RATIO FOR DISTINGUISHING BETWEEN UPPER AND LOWER SOURCES OF GASTROINTESTINAL BLEEDING. A SYSTEMATIC REVIEW

S. Machlab, E. Martinez-Bauer, P. Garcia-Iglesias, A. Lira, C. Marmol, G. Llibre1, J.P. Da Costa1, M. Gallach1, V. Puig-Divi1, F. Junquera1, R. Campo1, X. Calvet1, E. Brullet1, Gastroenterology, Hospital Universitari Parc Taulí, Sabadell/Spain

Contact E-mail Address: stmachlab@tauli.cat

Introduction: The insertion of a nasogastric tube (NGT) and assessment of the bloodstream of theNGT or BUN/creatinine ratio were recommended as initial measures to distinguish between upper and lower gastrointestinal bleeding (American College of Gastroenterology 2016). As the nasogastric tube is one of the most bothersome interventions for the patient, we evaluated the evidence supporting these recommendations.

Aims & Methods: The aim of the study was to identify the diagnostic accuracy (sensitivity, specificity, positive predictive value, negative predictive value and likelihood ratio) of the NGT and the BUN/creatinine ratio for distinguishing between upper and lower sources of gastrointestinal (GI) bleeding. We conducted a systematic review of the literature in order to identify studies assessing the diagnostic accuracy of the NGT or BUN/creatinine in patients with melena, hematobilia or rectorrhagia without hematemesis. The search was performed in November 2016 in five data bases (PubMed, Scopus, Web of Science, Cochrane Plus Library and OpenGrey).

Results: Four studies met the selection criteria (two evaluating the NGT, one BUN/creatinine and one BUN/creatinine ratio above 30 markedly increased the probability of an upper GI source with a positive likelihood ratio ranging from 2 to 11. Unfortunately, the sensitivity of both tests for upper GI bleeding was very low (negative likelihood ratios around 0.5). Characteristics and results of the studies selected are shown in table 1.

Conclusion: For patients with gastrointestinal bleeding without hematemesis, BUN/Cre ≥30 indicates a high probability of an upper GI source. Nasogastric tube aspiration provides little additional information and so is not indicated. Neither test reliably rules out an upper GI source of bleeding.

Abstract No: P1734

Table 1: Characteristics and results of the studies

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<th>Study (year)</th>
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<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Positive Predictive value (%)</th>
<th>Negative Predictive value (%)</th>
<th>Negative Likelihood ratio</th>
<th>Positive Likelihood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richards 1990</td>
<td>Retrospective 1981–1990</td>
<td>126 BUN/creat (Cut off &gt; 36)</td>
<td>57</td>
<td>100</td>
<td>100</td>
<td>53</td>
<td>0.63</td>
<td>+++++</td>
</tr>
<tr>
<td>Aljebreen 2004</td>
<td>Retrospective 1999–2001</td>
<td>520 NGT</td>
<td>68</td>
<td>54</td>
<td>54</td>
<td>78</td>
<td>0.61</td>
<td>1.44</td>
</tr>
<tr>
<td>Witting 2006</td>
<td>Retrospective 1997–2002</td>
<td>325 BUN/creat (Cut off &gt; 30)</td>
<td>91</td>
<td>94</td>
<td>91</td>
<td>81</td>
<td>81</td>
<td>0.65 0.56</td>
</tr>
<tr>
<td>Kessel 2016</td>
<td>Retrospective 2011–2014</td>
<td>386 NGT</td>
<td>28</td>
<td>86</td>
<td>99</td>
<td>2</td>
<td>0.84</td>
<td>2</td>
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</tbody>
</table>

Therefore, in cases of uncertainty, an upper GI endoscopy will be necessary to make a correct diagnosis.
Results:

and we analyzed characteristics, management and clinical outcome in patients in recent years. We investigated patients with ALGIB on anticoagulation therapy (NOACs). The use of NOACs has been increasing compared with warfarin in taking anticoagulants either warfarin or non-Vitamin K oral anticoagulants.

Introduction:

Contact E-mail Address: geodiamant@hotmail.com

Aims & Methods:

All patients with ALGIB on anticoagulation therapy treated in our hospital during a seven year period were evaluated. Characteristics and clinical outcome were compared between patients on warfarin and patients on NOACs.

Results:

Out of 587 patients with ALGIB, 43 (7.3%) were on NOACs and 68 (11.6%) on warfarin with an age 75.9 ± 9.5 vs 77.1 ± 7.9. The bleeding site was in the small bowel in 2/43 and 6/68 respectively. Causes of bleeding were not different between the two groups except for polyps/neoplasia (8/43 vs 6/68, p = 0.003).

Endoscopic hemostasis was more commonly needed in patients on NOACs 17/43 (39.5%) vs 18/68 (26.5%) p = 0.049).

Blood transfusions and need for other interventions (embolization and surgery) were not different. Also recurrence of bleeding (4/43 vs 11/68) and mortality (3/43 vs 0/68) were low and not statistically different between the two groups.

Conclusion: ALGIB in patients on NOACs although presents some differences it has a similar clinical outcome to patients with ALGIB on warfarin.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Chong V, Hill AG, MacCormick AD. Accurate triage of lower gastrointestinal bleed (Letter) – University Hospital of Patras. Part. 25:19-23.


NOBLADS - THE NEW RISK SCORE TO PREDICT THE SEVERITY OF ACUTE LOWER GASTROINTESTINAL BLEEDING

M. Patita, G. Nunes, R. Barosa, L. Ramos, C. Fonseca
Gastroenterology, Hospital Garcia de Orta, Almada/Portugal

Aims & Contact Email Address: martapatita21@gmail.com

Method & Contact: We aimed to evaluate the accuracy of the NOBLADS score to predict severe LGIB and the outcome of patients admitted by LGIB. We performed a retrospective, observational and unicentric study. Including patients admitted for acute LGIB and submitted to endoscopic evaluation between January/2015 and March/2016. LGIB was classified as severe if ≥ 2 units of erythrocyte concentrate (UCE) were required and/or if hematocrit drop > 20%. Total score ranges from 0-8; when total score is ≥ 2, it is considered high risk for severe LGIB.

Introduction: A new risk score for acute lower gastrointestinal bleeding (LGIB) has recently been validated, based on 8 admission criteria–nonsteroidal anti-inflammatory drugs use, absence of diarrhea, absence of abdominal tenderness, presence of hematochezia or melena, presence of hematemesis or emesis, platelet > 100k, age ≤ 65 or ≥ 80 years, and comparison between warfarin and DOAC are clarified as secondary endpoint.

Reference


NOBLADS score is simple and quick to apply. It predicts with high accuracy the risk of severe LGIB and allows to identify patients that are more likely to require transfusion support, intervention and prolonged hospitalization. In clinical practice, NOBLADS score may be useful to select on admission patients who will benefit from hospitalization or from earlier intervention.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


NOBLADS is simple and quick to apply. It predicts with high accuracy the risk of severe LGIB and allows to identify patients that are more likely to require transfusion support, intervention and prolonged hospitalization. In clinical practice, NOBLADS score may be useful to select on admission patients who will benefit from hospitalization or from earlier intervention.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


ENDOSCOPIC MUCOSAL RESSECTION OF COLORECTAL POLYPS IN PATIENTS ON ANTICOAGULANTS

S. Kohayashi1, T. Nowa2, K. Harada3, H. Seki1, Y. Noma1, T. Ueki3, H. Okada3

1Fukuyama City Hospital, Fukuyama/Japan
2Okayama University Hospital, Okayama/Japan

Contact E-mail Address: sayo444@hotmail.co.jp

Introduction: The management of antithrombotic agents during the peri-endo- scope period concerns the risks of bleeding and thromboembolism. The Japanese Gastrointestinal Endoscopy Society (JGES) guidelines revised in 2012 emphases the risk of thromboembolism rather than bleeding. So heparin bridge of anticoagulants is recommended at high-bleeding-risk procedure such as endoscopic mucosal resection (EMR). However heparin bridge in colorectal EMR raises the bleeding rate to approximately 20%, that is very high-rate incident compared with the bleeding rate of 0.3-6.1% generally. It is doubtful whether heparin bridge is appropriate.

Aims & Methods: The aim of this study to clarify the safeness of colorectal EMR under anticoagulating without a heparin bridge in anticoagulated patients.

All three cases of DOAC was medicine once a day. Thromboembolism was not observed.

The NOBLADS score is simple and quick to apply. It predicts with high accuracy the risk of severe LGIB and allows to identify patients that are more likely to require transfusion support, intervention and prolonged hospitalization. In clinical practice, NOBLADS score may be useful to select on admission patients who will benefit from hospitalization or from earlier intervention.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Gastroenterological Endoscopy Vol79 No.3 2014
We conducted subgroup analyses according to the identity of FDRs affected. We searched, assessed and extracted data from eligible studies. The relative risks and grey literature were searched from their inception to December 2016, and all vs. that the risk of CRC conferred by family history of CRC in parents vs. siblings individual with probands who were parents, siblings, and those with two or more individuals, implying that age of onset could potentially enhance the discriminatory capability of CRC prediction scores.

**Conclusion:**
Fifty-six case-control and seven cohort studies involving 9.28 million subjects were included in the analysis. A family history of CRC in FDRs was associated with significantly higher risk of CRC in index subjects (RR \( > 50 \) vs. \( \leq 50 \); \( 50 \) vs. \( > 50 \); \( 60 \) vs. \( > 60 \); \( > 60 \) years, \( p < 0.001 \)). The rate affected does not seem to be necessary when the risk of CRC in asymptomatic individuals is predicted.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

## P1741 IS THERE ANY DIFFERENCE IN RISK OF COLORECTAL CANCER AMONG ASYMPTOMATIC SUBJECTS WHOSE SIBLINGS VS. PARENTS WERE AFFECTED? A SYSTEMATIC REVIEW AND META-ANALYSIS

J.L. Huang, M.C. Wong, C. Chan, J. Lin, W.W. Cheung, M. Liang, Y. Fang, C. Yu, D. Fung
Chinese University of Hong Kong, Hong Kong/Hong Kong Prc

**Contact Email Address:** martin_wong@cuhk.edu.hk

**Introduction:** The current literature is mixed regarding whether first-degree relatives (FDRs) of CRC patients who suffered from colorectal cancer (CRC) at much earlier age are at substantially increased risk of CRC.

**Aims & Methods:** The present systematic review and meta-analysis examined the CRC risk conferred by family history of CRC in FDRs according to their age of onset. We searched Ovid Medline, EMBASE and grey literature from their inception to December 2016, and included all screening studies that investigated the family history of CRC in FDRs that led to diagnosis of CRC and incidence/prevalence of CRC. Two reviewers independently worked on selection, assessment and data extraction of eligible articles. A random effects meta-analysis was employed to pool relative risks (RR) and odds ratios. Subgroup analyses were performed according to the age of onset of CRC in FDRs of asymptomatic subjects \( (< 40 \) vs. \( \geq 40 \); \( < 50 \) vs. \( \geq 50 \); \( < 60 \) vs. \( \geq 60 \) years). Statistical heterogeneity was assessed by the I\(^2\) statistic. Publication bias was evaluated by an inverted funnel plot analysis with Begg’s regression model.

**Results:** Fifty-six case-control and seven cohort studies involving 9.28 million subjects were included in the analysis. A family history of CRC in FDRs of asymptomatic subjects conferred a significantly higher risk of CRC \( RR = 1.76, 95\% CI = 1.57–1.97; p < .001, I^2 = 95\% \) earlier age of onset of CRC in FDRS was associated with significantly higher risk of CRC in index subjects \( RR = 3.29, 95\% CI = 1.67–6.49 \) vs. \( \leq 40 \) years \( RR = 1.42, 95\% CI = 1.24–1.62 \) vs. \( \leq 40 \) years \( p = 0.017; RR = 2.81, 95\% CI = 1.94–4.07 \) vs. \( < 50 \) years \( RR = 1.47, 95\% CI = 1.28–1.69 \) vs. \( < 50 \) years \( p = 0.001 \). The Begg’s test did not identify any publication bias (Kendall’s tau = 0.122, \( p = 0.159 \)).

**Conclusion:** A family history of CRC in FDRs whose age of onset is earlier than or 40 or 50 years conferred a significantly higher risk of CRC to asymptomatic individuals, implying that age of onset could potentially enhance the discriminatory capability of CRC prediction scores.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

## P1742 GILBERT SYNDROME IS NOT THAT INNOCENT?

1Health Promotion Center And Integrated Cancer Prevention Center, Tel Aviv Medical Center, Tel Aviv/Israel
2Tel-Aviv Sourasky Medical Center, Tel Aviv/Israel

**Contact Email Address:** nadira@tivme.gov.il

**Introduction:** Gilbert’s syndrome is considered to be entirely benign. Some studies have shown a reduced risk for cardiovascular disease (CVD). There is conflicting data regarding cancer risk among Gilbert’s syndrome patients.

**Aims & Methods:** We aimed to evaluate the association of Gilbert syndrome with CVD and cancer. Clinical and epidemiological data was obtained from consecutive healthy subjects undergoing annual screening at the Integrated Cancer Prevention Center in Tel Aviv. The annual check-up includes: thorough examination by specialists in internal medicine, surgery, dermatology/plastic surgery, OB/GYN, urology, oncology, oral surgery, gastroenterology. Blood work (smac 24; blood count, TSH, CRP, PSA), vaginal, PSA and mammography (>40ys), LDCT in heavy smokers and all needed imaging when clinically indicated. Peripheral blood DNA was extracted from all subjects. Gilbert syndrome was determined by clinical criteria (normal liver function tests but to mild elevation in unconjugated bilirubin < 3 mg/dl without any hemolysis). In the majority of the cases the diagnosis was confirmed genetically by the homozygous mutation (TA)\(^{7TAA}\) in the promoter region of UGT1A1 enzyme. Prevalence of CVD and cancer were compared between subjects with/without Gilbert syndrome.

**Results:** A total of 6258 (49%) men and 6461 (51%) women, mean age 47.0 ± 11.3 years, were included of which 1,019 had clinical Gilbert. Gilbert was significantly more common among men (11.5% vs. 4.6% \( p < 0.001 \)). The rate of Gilbert syndrome was equal in Sephardic and Ashkenazi Jews. Malignancy and CVD were diagnosed in 678 (5.3%) and 1,837 (14.4%) subjects respectively. The prevalence of any CVD was significantly higher in the Gilbert group (OR 1.23 95% CI 1.04–1.46 p = 0.017), as compared to non-Gilbert group (OR 1.37 95% CI 1.12–1.68 p = 0.003) and CVA (1.1% versus 0.6% \( p = 0.06 \)). Higher rate of kidney and bladder cancers (2.64, 1.22–5.70, \( p = 0.019 \)) was also observed in the Gilbert group. In contrast, the prevalence of breast cancer was much lower among Gilbert’s patients with Gilberts (OR 0.47 95% CI 0.25–0.97, \( p = 0.034 \)).

**Conclusion:** In Israel Gilbert syndrome is not that innocent. In a large cohort it seems to be associated with increased risk of hypertension, CVD and CVA. Bladder cancer is higher but females are protected from breast cancer. Further studies are mandated in order to better understand these findings and determine proper screening and surveillance practices in Gilbert disease.

**Disclosure of Interest:** N. Arber: Bayer Bio-view Gi-View Micro-med Check-up All other authors have declared no conflicts of interest.

## P1743 CHARACTERISTICS AND PREDICTORS OF INTERVAL CANCER: A CASE-CONTROL STUDY

I. Laish1, J. Mizrahi2, F. Konikoff1
1Meir Medical Center, Kfar Saba/Israel
2Stony Brook University Hospital, New York/United States of America

**Contact Email Address:** ido.laish@gmail.com

**Introduction:** Interval colorectal cancer is largely related to a poor endoscopic performance (missed lesions, incomplete resection or different polyps) and the development of the polyp (accelerated growth). Thus, quality endoscopic measures and Lynch syndrome were highly investigated for their association with interval cancer. However, most reports came from the Western world and not the Middle East, and differences in ethnicity or environmental factors might potentially have impact on the biology of tumor progression. In addition, patient-related factors were less investigated for their association with interval cancer. The aim of this study was thus to assess tumor and patient characteristics and predictors of interval cancer in a population from Israel.

**Aims & Methods:** This retrospective cohort study included all patients that were diagnosed with colon cancer in our institution between 2005–2014. Cases included patients with a previous colonoscopy within 1–10 years before the diagnosis of cancer, with either negative findings or benign polyps. Only full colonoscopies with at fair or good preparation were included. Interval cancer was defined on an individual basis, when cancer occurred within the recommended surveillance interval according to accepted guidelines. Cases were further stratified according to time since last negative colonoscopy (< 3 years, 3–10 years). Positive controls were cancer patients without previous colonoscopy, and "negative" controls were sex- and age-matched patients with two negative colonoscopies within the study period who were randomly selected on a 5:1 ratio. Tumor characteristics (location, staging) and patient-related features (age, gender, positive family history of colon cancer, aspirin use, diabetes, diverticulosis) were compared between cases and control groups.
Results: 845 patients were diagnosed with a colon cancer within the study period, and 83 cases (9.8%) were found to have interval cancer. Among them, 51 patients (61.5%) had negative findings at index colonoscopy, while 22 (28.5%) had either non-advanced adenomas (12%) or advanced adenoma (26.5%). Compared to "positive" controls with primary cancer (575 patients with full data), patients with interval cancer were older (84% above 60y vs. 65%, p = 0.03) and had proximal (caecal to splenic flexure) tumor location (57% vs. 34%, p = 0.0001), but gender (47% vs. 53% males) and tumor staging (78% vs. 70% in stage 0–2, p = 0.12) were not different. Compared to "negative" healthy controls (255 participants) without interval cancer and negative findings at index colonoscopy (51 patients) had higher prevalence of diabetes (33% vs. 15%, p = 0.002) but the same rate of family history, aspirin use and diverticularitis. There were no significant differences in all these characteristics between patients with interval cancer < 5 years and ≥5 years.

Conclusion: With patients interval cancer to be older and have proximal tumor location than patients with primary colon cancer, and have higher prevalence of diabetes. A close surveillance or the use of better endoscopic techniques (e.g. use of NBI (narrower retrieval time) should be considered for patients with these characteristics.

Disclosure of Interest: All authors have declared no conflicts of interest.

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<th>P1744 THE RELATIONSHIP BETWEEN QUANTITATIVE FIT RESULTS AND NEOPOLYPLAFLICKSTINGS</th>
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J.M. Grega, M. Borgiaon, D. Pace, S. Antle, S. Stone, E. Randell, J. Quinlan
Dept. Of Gastroenterology, Memorial University, St. John's/Canada

Contact E-mail Address: jmgrega@mun.ca

Introduction: Fecal Immunochromatographic Testing (FIT) is currently used in most Canadian provinces to screen for colorectal cancer. Newfoundland and Labrador Colon Cancer Screening Program. 21,371 patients enrolled in the program between the ages of 50–74 and at average risk for colon cancer between July 1, 2012 and June 30, 2016. 16,152 participants returned their FIT tests. 1831 were positive on at least one FIT kit and underwent colonoscopy. The positive FIT values ranged from 100.0 to 541.07. The mean FIT was 942.3 (25th percentile: 145, 50th percentile: 260, 75th percentile: 576). Of the 1831 participants who had a colonoscopy 73 (4.0%) were found to have colorectal cancer and 1092 (59.6%) were found to have an adenoma.

Aims & Methods: The goal of this study is to assess the effectiveness of different FIT cut-offs and number of FIT tests for detecting adenomas and colorectal cancer.

Results: Data for this study were obtained in a prospective fashion using the Newfoundland and Labrador Colon Cancer Screening Program. 21,371 patients enrolled in the program between the ages of 50–74 and at average risk for colon cancer between July 1, 2012 and June 30, 2016. 16,152 participants returned their FIT tests. 1831 were positive on at least one FIT kit and underwent colonoscopy. The positive FIT values ranged from 100.0 to 541.07. The mean FIT was 942.3 (25th percentile: 145, 50th percentile: 260, 75th percentile: 576). Of the 1831 participants who had a colonoscopy 73 (4.0%) were found to have colorectal cancer and 1092 (59.6%) were found to have an adenoma. By using only one FIT test at a cut-off of 100, our program would have missed 8.2% of cancers. An additional 541 colonoscopies were required to detect these cancers. If we stratified patients according to number of FIT tests we found that 83.5% of colon cancers detected were positive on both FIT kits at a quantitative cut off of 100. If a FIT cut off of 200 was used and applied to our patients our program would have missed 12.5% of cancers.

Conclusion: Two FIT tests are more effective than one at screening. Patients with two FIT positive results are more likely to have colon cancer, an advanced adenoma and a simple adenoma. Further triaging of colonoscopy wait lists could be considered based on quantitative FIT values and number of positive tests. Provinces and health authorities need to be cautious when determining the FIT cut-offs and number of FIT tests for detecting adenomas and colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

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<th>P1745 METABOLIC RISK FACTORS AND THEIR IMPACT IN COLON CANCER SCREENING: MULTICENTER PROSPECTIVE STUDY</th>
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T. Grega1, S. Suchanek1, O. Majek2, O. Ngo2, P. Minarikova3, B. Seifert4, S. Suchanek5, O. Shonova1, K. Balihar5, J. Cyrany6, M. Benes7, M. Zavoral1
1Institute Of Biostatistics And Analyses, Masaryk University, Faculty of Medicine, Brno/Czech Republic
22nd Dept. Of Internal Medicine, University Hospital Hradec Kralove, Hradec Kralove/Czech Republic
3Department Of Gastroenterology, Hospital Ceske Budejovice, Ceske Budejovice/Czech Republic
4Institute Of Gastroenterology, Faculty Of Medicine, Nemocnice Plzen, Plzen/Czech Republic
5Institute Of Gastroenterology, Institute For Clinical And Experimental Medicine, Prague/Czech Republic
6Department Of Hepatogastroenterology, Institute For Clinical And Experimental Medicine, Prague/Czech Republic
7Department Of Gastroenterology, Institute For Clinical And Experimental Medicine, Prague/Czech Republic

Contact E-mail Address: christoph.schramm@uk-koeln.de

Introduction: Serrated polyps (SPs) have been recognized as precursors of colorectal cancer (CRC), accounting for up to 30% of CRCs via the serrated neoplasia pathway. SPs are classified into hyperplastic polyps (HPs), sessile serrated polyps (SSPs) with or without dysplasia and traditional serrated adenomas (TSAs). The serrated polyp syndrome (SPS) is characterised by multiple SPs throughout the colon. We aimed to determine the prevalence of SPS in patients without metabolic syndrome (control group) and patients with metabolic syndrome, and to evaluate if pre-existing diabetes, dyslipidaemia, hypertension, smoking, obesity, and hypercholesterolaemia are associated with SPS. Hence, we determined a prevalence of SPS of 0% in our cohort. This project has been supported by the Czech Ministry of Health grant NT 13673 and MO 1012.

Contact E-mail Address: christoph.schramm@uk-koeln.de

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1747 CONTRIBUTION OF GERMINE MUTATIONS TO NON FAMILIAL EARLY ONSET CANCERS
A. Mannucci1, F. Calabrese1, R. A. Zuppardo3, U. Elmore4, F. Alecotti2, M. Casale5, M. Tartaroni1, M. Reni3, M. Reitano1, V. Burgio1, M. Hauza1, M. G. Ponzoni1, A. R. Racuzzi3, R. P. Testani4, P. A. Testoni2, G.M. Costi1 1Gastroenterology And Gastrointestinal Endoscopy Unit, Università Vita-Salute San Raffaele, Milano/Italy 2Gastrointestinal Surgery Unit, San Raffaele Hospital, Vita-Salute Università Milano/Italy 3IRCCS Ospedale San Raffaele, Milano/Italy 4Division Of Genetics And Cell Biology, IRCCS San Raffaele, Milano/Italy

Disclosure of Interest: and further development is needed to better classify VUS (25%).

Early onset gastroenterological cancers lacking a positive family history do not support the suspect of familial syndromes.

Aims & Methods: We addressed the contribution of germline mutations to non familial early onset cancers. Patients with pancreatic, gastric, esophageal, duodenal and colorectal cancers were enrolled from 2015 to 2017 at the Gastrointestinal Personalized Medicine unit. Eligibility criteria were the juvenile onset and the negativity for clinical criteria of hereditary cancer syndromes. Early onset colorectal cancer was defined as <45 yrs. For the other cancers, the threshold was defined at 50. Eligible patients provided informed consent. Genes were sequenced by means of a validated Next Generation Sequencing panel of oncological susceptibility genes and confirmed by means of Sanger sequencing.

Results: Among 12 colorectal cancer patients (7F, 5M), NGS analysis showed 2: 2 MSH2 mutation and 1 MSH6 mutation in 11G5 occurring de novo, given the absence of family history; 3 variants of unknown significance (VUS) (2 MSH2 and 1 MLH1); and 7 were negative. Age-stratification revealed that, among those <35 years (n = 4), 1 had MSH2 gene mutation and 3 were negative. In the 36–40 age group (n = 3), 1 had MSH2 and 2 were negative. In the age group 41–45 (n = 5), MSH6 mutation and 2 VUS were found, alongside 2 negative results.

Among the colorectal cancers, 17% of patients had a de novo mutation of Lynch Syndrome, 25% had a VUS, and 58% were negative.

Among 2 pancreatic cancer patients (< 50 yrs, 2 F), one tested negative and the other had a VUS on PMS2.

Reporting performed on 1 esophageal cancer (46 yrs, M) was negative. 1 duodenal cancer (46 yrs, F) has a MSH2 mutation and 2 VUS (MSH6 and PMS2).

Conclusion: A significant percentage (17%) of early onset colorectal cancers resulted in Lynch Syndrome even when family history is not suggestive of hereditary cancer. We reliably infer the determinant role of genetics, even when the family history does not support the hypothesis. Elsewhere, our results suggest that the already known susceptibility genes seldom contribute to sporadic early onset cancers. Other genes and mechanisms may explain the early onset phenotype. Our data show that NGS is often non conclusive in early onset GI cancers, and further development is needed to better classify VUS (25%).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1748 IMPACT OF COLIBACTIN-PRODUCING ESCHERICHIA COLI ON MICRO ENVIRONMENT OF PRECANCEROUS COLORECTAL CANCER MODEL
A. Lopes1, A.H. Casse1, J. Vezian1, E. Cardamone1, D. Pezet3, N. Barnich1, E. Billard1, B. Dumas5, M. Bonnet1 1Université Montpellier 1, INSERM UMR 1071/Université d’Auvergne/INRA USC 2018, Clermont-Ferrand/France 2Histoarchitecture and Bio-Imaging Group, Translational Sciences, Sanofi R&D, France 3Chirurgie digestive, Centre Hospitalier Universitaire, Clermont-ferrand/France 4INSERM UMR 1240 Université d’Auvergne, Clermont-Ferrand/France 5Research Biologics, Sanofi R&D, Vitry-sur-Seine/France

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: Early onset gastroenterological cancers lacking a positive family history do not support the hypothesis of familial syndromes. Increasing evidence links the immune microenvironment, microbiota and tumor cell communication through the tumor microenvironment (TME) and inflammation. Histological analyses showed no difference about intratumoral immune infiltrate density on 11G5 and K12-infected mice. However, using our specific algorithm, we observed a significant increase of lymphoid follicle size in the gut of infected mice with the 11G5 strain compared to mice feeding with non-pathogenic K12 strain. Interestingly, follicle size was positively correlated with tumor volume, on the 11G5 infected group suggesting an association between pro-carcinogenic proprieties of this strain and gut immune response. In addition, we observed an increase of neutrophils (Ly6G cells) on mucosa and lymphoid follicle of mice infected with 11G5 compared to K12 and non-infected mice. These results can be linked with our in vivo optical imaging observations and our results about the increase of neutrophils chemo-attractants CXCL1 and CCL20 measured by qRT-PCR after infection. Analyses of T cells, macrophages, B cells and myeloid suppressive cells are in progress.

Conclusion: Here we can observe an increase of lymphoid follicle associated with tumor volume after colibactin-producing E. coli infection. Our first results suggest that neutrophils can be one of the immune cells implicated in this process. This work shows a link between immune microenvironment, pathogenic E. coli and tumor development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1749 INVESTIGATING THE DIRECT INTERACTION BETWEEN CD24 AND β-CATENIN IN INTESTINAL TUMORIGENESIS
N. Arber1, A. Fokra2, S. Shapira3, D. Kazanov4, F. Bedmy2, B. Eliì3, C. Varol1 1Health Promotion Center And Integrated Cancer Prevention Center, Tel Aviv Medical Center, Tel Aviv/Israel 2Tel Aviv Medical Center, Tel Aviv/Israel 3Gastroenterology, Tel-Aviv Sourasky Medical Center, Tel-Aviv/Israel

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: CD24 is a glycosylphosphatidylinositol-linked protein that functions as an adhesion molecule and is overexpressed at an early stage of CRC (Sagiv et al., 2006). The Wnt/β-catenin signaling pathway plays an important role in the CRC carcinogenesis process. C57BL/6.J mice carrying the ApaMin mutation develop ~24.3 ± 3.7 adenomas and several carcinomas in the small intestine by the age of 16 weeks compared to the ~7 ± 1.7 polyps that ApaMin/CD24-/- (double KO) mice developed. Mice colicoscopy showed a significant reduction in the number and size of polyps upon depletion of CD24 alleles. The ApaMin mice displayed severe splenomegaly (355 ± 68 mg) compared (141 ± 49 mg) in double KO mice similar to WT mice. Hb level in the ApaMin was 5.8 ± 2.5, significantly lower than in the double KO mice (8.2 ± 0.9) and their WT littermate.

Aims & Methods: We aimed to study the cellular interactions between CD24 and β-catenin, and effects of their interaction on intestinal tumorigenesis. CD24 inducible 293T-Rex cells previously developed in our lab (Shapira et al., 2011) and SW480 CRC cells stably transduced with CD24 (Naumo et al., 2014) were used to study this interaction in vitro. Co-immunoprecipitation and immunofluorescent staining were used to investigate the interaction between the two proteins. Far western blotting (FWB) analysis was used to confirm this direct interaction by probing the standard WB membrane with the purified CD24 protein.

Results: In vitro: Western blotting analyses showed that expression of CD24 in 293T-Rex cells induced the activation of β-catenin, while down-regulation of CD24 in SW480 cells caused a decrease in the level of active β-catenin. Cytoplasmic/nuclear fractionation showed that more active β-catenin entered the nuclei of CD24 on CD24 cells (clone 1) than in CD24 cells (clone 4). In addition, in both cell lines, TOP/FOP luciferase reporter assay showed a significant increase in Luciferase activity upon CD24 expression induction. Co-immunoprecipitation studies of CD24 and β-catenin indicated that these two proteins might be interacting. In addition, all HEK-293T cells and SW480 cells, immunofluorescent staining of CD24 and β-catenin showed that these two proteins co-localize on the cellular membrane. Furthermore, far western blotting analysis suggests that a direct interaction between the proteins exist.

Conclusion: 1. CD24 plays a major role in intestinal tumorigenesis. 2. CD24 interacts with the Wnt pathway by activating β-catenin. 3. CD24 interacts directly with β-catenin. 4. Down-regulation of CD24 may be an important aim in the therapy of CRC.

Disclosure of Interest: N. Arber: Bio-view Micro-Medic Check-cap Gi-View Bayer All other authors have declared no conflicts of interest.

P1750 YM155 AS AN INHIBITOR OF CANCER STEMNESS SIMULTANEOUSLY INHIBITS AUTOPHOSPHORYLATION OF EGFR AND G9A-MEDIATED STEMMENESS IN EGFR-POSITIVE CANCER CELLS
C. Cheng1, A. Ho2
1Hematology And Oncology, Mackay Memorial Hospital, Taipei/Taiwan
2Division Of Gastroenterology, Chang Gung General Hospital, Taipei/Taiwan
Contact E-mail Address: aisheng49@gmail.com
Introduction: Cancer stem cells survive as the leading reason to tumor recurrence after tumor repressive treatments. Therefore, it is worth discovering specific and efficient inhibitors against cancer stemness for applications in reducing tumor recurrence. Previously, literature has indicated that YM155 can significantly reduce the stemness-derived tumorsphere formation of gastric carcinomas and suppress EGFR activity. However, the pharmaceutical mechanism of YM155 is not completely clear.
Aims & Methods: The aim of this study attempted to investigate the potential mechanism of YM155 against cancer stemness in EGFR-positive cancers. The tumorspheres derived from EGFR-mutant HCC827 and EGFR-wild-type HTCl116 and A549 cells expressing higher cancer stemness markers, CD133, were used as cancer stemness models.
Results: We found that higher EGFR autophosphorylation (Y1068) in HCC827-, A549-, and HCC116-derived tumorspheres compared to the parental cells, which induced tumorsphere formation through activating G9a-mediated stemness property. YM155 was demonstrated to inhibit the tumorsphere formation by unexpectedly blocking the autophosphorylation of EGFR and G9a-mediated stemness pathway. The chemical and genetic inhibitions of EGFR and G9a revealed the significant role of EGFR-G9a pathway in maintaining the cancer stemness property.
Conclusion: In conclusion, this study not only revealed that EGFR triggered the formation of tumorspheres through elevating the G9a-mediated stemness, but also demonstrated that YM155 inhibited the formation of tumorspheres by simultaneously blocking autophosphorylation of EGFR and activity of G9a as a potent anti-stemness agent against EGFR-positive cancers.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1754 FGFR4 IS A FUNCTIONAL TUMOR SUPPRESSOR THROUGH INHIBITING AMPK/mTOR PATHWAY IN COLORECTAL CANCER
L. Xu1, N. Zhang2, L. Huang1, X. Liu1, S. Peng1, Z. Zeng1, M. Chen1
1Department Of Gastroenterology, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou/China
2Sun Yat-sen University, Guangzhou/China
3State Key Laboratory Of Oncology In South China, Sun Yat-sen University Cancer Center, Guangzhou/China
Contact E-mail Address: liuxia320@163.com
Introduction: Promoter hypermethylation-induced epigenetic silencing of tumor related genes played a key role in the initiation and development of colorectal cancer (CRC). Using Methylated DNA Immunoprecipitation (McDIP), we identified that Fibroblast growth Factor 14 (FGF14) was preferentially methylated in CRC.
Aims & Methods: We aimed to investigate the epigenetic regulation and biological function of FGF14 in CRC. The expression of FGF14 in 10 CRC cell lines and 24 pairs of CRC tissues and paired adjacent normal tissues by real-time PCR. CRC cells were treated with DNA demethylating agent 5-aza-2-deoxycytidine (5-Aza). The methylated status of FGF14 in CRC cell lines and CRC tissues were determined by real-time MSP. The biological function of FGF14 in CRC was interrogated by cell viability assay, colony formation, immunofluorescence and flow cytometry, as well as in vivo study.
Results: FGF14 was downregulated or silence in all (10/10) CRC cell lines, while it was ready expressed in normal colonic tissues. The expression of FGF14 was significantly lower in primary CRCS as compared to their adjacent normal tissues (P < 0.01). The loss of FGF14 gene expression was restored by treatment with DNA demethylating agent 5-Aza. Re-expression of FGF14 in CRC cell lines inhibited colony formation, suppressed cell viability, and induced cell apoptosis via AMPK/mTOR pathway, accompanied with enhanced protein expression of cleaved caspase-3, cleaved caspase-7, cleaved caspase-9 and PARP. In xenograft mouse model, overexpression of FGF14 significantly reduced tumor growth (P < 0.001).

Conclusion: FGF14, which induces cell apoptosis via AMPK/mTOR pathway, is a novel tumor suppressor down-regulated by epigenetic inactivation.
Disclosure of Interest: All authors have declared no conflicts of interest.

References
B. J. Meijer
TRANSCRIPTION FACTORS UPON ER STRESS IN THE LS174T P1756 UNBIASED ANALYSIS OF REGULATION OF Conclusion: POLD1 operates multiple cancers, associated with a somatic mutation of mismatch repair BRAF genes (either of MSH2, MSH6, PMS2) in 13.9% of CRC patients and 25.9% of GC patients. Mutation (detected in 33.2% of cases), that of mismatch repair genes (either of MLH1, MSH2, MSH6, PMS2) in 13.6%, POLE in 9.1%, and POLD1 in 4.5%, respectively, in the hypermutator group. Conclusion: Hypermutator was recognized in 5-10% of digestive system cancers, particularly in CRCs and GCs. Cases of hypermutator sometimes develops multiple cancers, associated with a somatic mutation of mismatch repair genes. Further research must be needed to clarify the characteristic of hypermutator of the digestive organs in the therapeutical aspects.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1757 MICROBIOTA A NEW INDICATOR OF COLORECTAL CANCER (CRC) HETEROGENEITY
I. Sobhani1, B. Bergstein2, A. Ghoiizian3, S. Kennedy2
1Dept. De Hepato-Gastroenterologie, Universite Paris 12 Hospital H. Mondor Dept. of Hepato-Gastroenterology, Creteil/France
2Statistica, Csb, Institut Pasteur, Paris/France

Introduction: Location and somatic gene signature of CRCs may impact prognosis and therapy response. A relative specific CRC-related dysbiosis has been characterized.

Aims & Methods: The aim was to characterize colon microbiota in CRC patients regarding location, gene markers and outcome. Patients (N=173) signed consent forms. Deoxynucleotide (dNTP) library sequencing was performed on Illumina HiSeq2500 analysis of stool DNA: 72 CRC (35 sporadic-S, 19 Lynch-L), 87 asymptomatic subjects (normal colonoscopy), 14 first-degree healthy relatives from Lynch families. "MOCAI" pipeline was used, library sorted (Piled quality score 20 Alientrimmer v0.4) after exclusion of <50 Lm, human genes or phage sequences. Quality sequences were aligned (REFMG.V13) and most abundant genes constructed (MBMA program v0.1). The Shanam program (shaman.c3bi.pasteur.fr) was used. The number of bacteria was estimated (REFMG.V13). The linear model (GLM) was implemented in the DESeq2 R kit. Differences between Control (N=87) and CRCs (N=69), between L (N=19) and S CRCs(N=50), and between CRC (N=19) and Healthy Lynch relatives were obtained after interaction of age, BMI and gender was considered (GLM model). TSAs were defined when value was retained in the correction (Benjamini and Hochberg). The specific taxonomic composition of the control and CRC groups was subjected to random analysis (Caret’s R package) with two optimization parameters (precision and kappa) in the model.

Results: There was no difference for gender, age (p=0.08) and BMI (p=0.187) in the L and S CRCs. Significant differences were observed between Normal and CRCs, CRC-CRC and L-CRC, L-CRC and first degree relatives (family) based on the common component (similarity of sequences): 13 species differentiated Normal and CRCs, two were more prevalent in L-CRC. The panels of bacteria linked with location, MSI, Ras mutations, methylation phenotypes and survival were identified. No significant link was observed with TNM Staging: I (N=17, 2L and 1S), II (N=12, 5L and 7S), III (N=20, 10L, 10S), IV (N=22.1L, 21S). DFS might be dysbiotic dependent.

Conclusion: CRC dysbiosis is location-dependent. Several bacteria are associated with Ras mutation, MSI, and methylation status. They may directly or through microbiota impact the prognosis. Microbiota signature should be taken in consideration in trials.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1758 EPIGENIC SILENCING OF SMOCI IS ASSOCIATED WITH DEVELOPMENT OF COLORECTAL TRADITIONAL SERRATED ADENOMAS
H. Aoki1, E. Yamamoto2, A. Takasawa1, T. Niinuma1, H. Yamano2, H. Matsushita1, T. Harada1, T. Sugai1, H. Suzuki1
1Dept. Of Molecular Biology, Sapporo Medical University, Sapporo/Japan
2Dept Of Gastroenterology And Hepatology, Sapporo Medical University, Sapporo/Japan

Introduction: Colorectal serrated lesions (LSs) include hyperplastic poly (HP), traditional serrated adenoma (TSA) and sessile serrated adenoma/poly (SSA/P). SSA/Ps are well-known precursors of colorectal cancer (CRC) characterized by BRAF mutation and microsatellite instability (MSI), whereas the molecular characteristics of TSAs are not fully understood.

Results: By using an unbiased transcriptomics approach we identified transcription factors that are lost on protein level upon ER stress. Furthermore, our data suggests that the significant loss of the transcriptional regulator CtBP2 contributes to intestinal epithelial stem cell differentiation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: hironori_a1125@yahoo.co.jp
Aims & Methods: We aimed to identify epigenetic alterations associated with the development of TSAs and to clarify the associations between clinical, pathological and molecular characteristics in colorectal lesions. The genome-wide DNA methylation status in TSAs consisting of protruding and flat components was analyzed by using Illumina HumanMethylation450 BeadChip, and changes in DNA methylation during the development of TSAs were identified. Methylation of identified genes and CIMP markers (MINT1, -2, -12, -31, p16 and MLH1) and BRAF/KRAS mutations were analyzed in 847 colorectal lesions and 61 samples of normal colonic tissue. Results: Fluorescence overlap between detection channels was used to express DNA methylation status in TSAs and CRCs, and that SMOC1 methylation is strongly associated with KRAS mutation and CIMP-low. Conclusion: Methylation of SMOC1 is associated with TSA development but is rarely observed in SSA/Ps. Immunohistochemical analysis of SMOC1 may be a useful marker to discriminate between SSA/Ps and TSAs. Our data suggests that SMOC1 methylation may play a role in the neoplastic pathways arising in TSAs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1759 DEVELOPMENT AND VALIDATION OF PREDICTIVE MODEL FOR PARTICIPATION IN COLORECTAL CANCER SCREENING IN KOREA

J. Chung1, J.J. Park2, J.Y. Yoon3
1National Medical Center Division of Gastroenterology, Seoul/Korea, Republic of
2Department of Internal Medicine, Gaungnam Severance hospital, Seoul/Korea, Republic of
3Gastroenterology, Kyung Hee University Hospital at Gang Dong, Seoul/Korea, Republic of

Contact E-mail Address: drbeatris@hanmail.net

Introduction: The number of individuals partaking in colorectal cancer (CRC) screening is still to be low even after the implementation of the Korean Government’s National Cancer Screening Program for CRC. The aim of this study is to identify factors associated with partaking in CRC screening.

Aims & Methods: The Korean National Health and Nutrition Examination Survey (KNHANES) 2007 ~ 2010 datasets were used to develop a CRC screening participation screening score. 10,527 individuals aged ≥50 who completed the survey and not previously diagnosed with CRC were selected. Both logistic regression (LR) analysis and artificial neural network (ANN) were used to develop predictive models. Multilayer perception ANN was constructed based on 16 clinical variables. We then validated the models using the KNHANES 2011 and 2012 (n = 9586) datasets and compared them with each other.

Outcomes: Of 10,527 individuals selected, 57.0% (n = 6005) responded unscreened for CRC. Among various demographic and socioeconomic factors, for example, age, gender, smoking, income, education, level, private health insurance, self-reported depression, self-reported health status, and residence were found to be independently associated with CRC screening. LR analysis produced screening score (range 0–10.3), and a cutoff point of ≥5.5 defined 49% as unscreened for CRC and yielded area under the curve (AUC) of 0.626. When validated with KNHANES 2011 and 2012 datasets, the AUC of the defined LR model was 0.663, meanwhile the area under the curve (AUC) of 0.626. When validated with KNHANES 2011 and 2012 datasets, the AUC of the defined LR model was 0.663, meanwhile the AUC of ANN based predictive model was 0.743.

Conclusion: The ANN produced better performing model than LR analysis based model in identifying population with low CRC screening participation. Sensible predictive models. Multilayer perception ANN was constructed based on 16 clinical variables. We then validated the models using the KNHANES 2011 and 2012 (n = 9586) datasets and compared them with each other.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1760 CD24 PREDICTIVE LEVELS- A SIMPLE NOVEL BLOOD TEST TO IDENTIFY INDIVIDUALS WITH COLON CANCER MALIGNANCIES

N. Arber1, S. Shapiro1, D. Kazanov1, A. Fokina1, Z. Sally2, S. Zigdon2, J. Maayan1, L. Ari1, K. Ron1, L. Alissa1, I. Ofer1, E. Liberman1
1Health Promotion Center And Integrated Cancer Prevention Center, Tel Aviv Medical Center, Tel Aviv/Israel
2Tel-Aviv Sourasky Medical Center, Tel Aviv/Israel

Contact E-mail Address: nadira@tlmc.gov.il

Introduction: Background: CD24, a mucin-like cell surface molecule, highly expressed in solid tumors and hematological malignancies (HM) (Gastro 2006, Clin Can Res 2007, Can Res 2008). mAb to CD24 was found to inhibit the growth CD24 cancer cells (Gastro 2009). We have shown that a simple non-invasive blood test evaluating CD24 levels on PBL had good sensitivity and specificity for detecting colorectal neoplasia in subjects undergoing screening colonoscopy (Kraus et al., 2009).

Aims & Methods: We aimed to improve a simple, noninvasive blood test that could reliably identify individuals with different types of cancer. Blood was taken from patients with various malignancies (CRC, Pancreatic Cancer (PC), gastric cancer (GC), sarcoma and HM), that was confirmed by histology. Age, gender and ethnic matched healthy individuals served as controls. Good blood quality. They underwent an extensive workload at the Integrated cancer prevention center at Tel Aviv Medical Center (Eur J Intern Med. 2013) All samples were collected and processed identically. For each sample, 20,000 leukocytes were analyzed by flow cytometry for the expression of CD24. An initial template database was created using gates within the software to create a hierarchical population tree at the beginning of the screen. All additional analyses were accomplished after data acquisition have been completed. The template file include compensation adjustment. All data were collected in order to minimize fluorescence overlap between detection channels.

Results: The novel assay was improved significantly, distinguished healthy from CRC (Fig.1a) (P < 0.013), PC (Fig.1b) (P < 0.018), biliary tract (P < 0.45E-12), gastric (Fig.1c) (P < 0.003), and lymphoma (Fig.2a) (P < 0.002) and lymphoma (Fig.2b) (P < 0.002) patients. CD24 expression levels were higher by up to 25% in cancer cases as compared to normal subjects. The sensitivity and specificity for CRC were 79.2% and 74.7%, and for PC 70.0% and 75.9%, respectively.

Conclusion: Conclusion: CD24 expression in PBLs is a promising blood test for the early detection of CRC, PC, and HM.


Introduction: Colonoscopy is considered the gold standard for prevention and early detection of colorectal cancer (CRC), however its effectiveness is directly related to quality of bowel preparation. Two of the quality measures of colonoscopy, cecal intubation rate and adenoma detection rate, are both associated with adequate bowel preparation. Data on factors associated with quality of preparation using Picolax® are limited.

Aims & Methods: We aimed to evaluate factors associated with a good bowel preparation using Picolax® (Sodium picosulfate/magnesium citrate) in the Israeli heterogeneous population. Consecutive outpatients referred for colonoscopy were prospectively assessed by a nurse practitioner filling out a questionnaire. Hemoglobin or haematocrit, blood consumption, time of total preparation and time between end of prep to colonoscopy were evaluated. Quality was assessed using the Boston Bowel Preparation Score (BBPS). Bowel prep was considered "good" if BBPS was ≥6 and <21 in each segment or "bow" if BBPS was <6 or ≥21 in any colon segment. Results: A total of 452 patients were included in the study (M = 54%, mean age 56.5 ± 16.3 yrs), 366452 (81%) achieved a "good" bowel preparation, and 86 (19%) were classified as "not good." No significant difference was observed between genders and in terms of achieving a good bowel preparation (p = 0.77, p = 0.054). There was a significant difference among diabetics (n = 93, 20.6%) and non-diabetics (n = 359, 79.4%) in quality of the bowel prep. While 69.9% of diabetics achieved a good bowel preparation only 83.8% of non diabetics achieved a good bowel preparation (p = 0.004). In the univariate analysis, Bisacodyl had no effect on bowel preparation (p = 0.83) except in the diabetics, where the 3 tablets achieved 73.3 ± 1.9% (median = 5) vs. 43.1 ± 1.5 (median = 4) tablets fared better (p = 0.018). Other chronic diseases had no effect on bowel preparation. Drinking 3–7 vs 8–15 glasses of water achieved good preparation in 72.7% vs 83.5% of cases, respectively (p = 0.01). Time from end of preparation to colonoscopy -1.5 (median = 1.9) in quality significantly better prep vs ≥4 hrs (p = 0.002). In the multivariable model for prediction of quality of bowel preparation that included the time between sachets of picolax, number of water cups consumed, diabetes, gender, and age we found that all, excluding age, were good predictors of bowel preparation. Women had a better chance of achieving an adequate bowel preparation (OR1.68, p = 0.045, 95% CI = 1.01–2.79). Patients without diabetes had a better chance of achieving an adequate bowel preparation (OR = 2.05, p = 0.014, 95% CI = 1.16–3.65). Patients who had 5–9 hours between the 2 sachets of picolax had a lower chance of achieving an adequate bowel preparation as compared to those who had 9 to 24 hours between the 2 sachets (OR = 0.375, p = 0.009, 95% CI = 0.180–0.783). Lastly, drinking fewer than 8 cups lowers the chance of achieving an adequate bowel preparation (OR = 0.461, p = 0.003, 95% CI = 0.275–0.775).
Conclusion: Diabetics require a more intense bowel preparation aided by Bisacodyl, which does not help others. Time between both doses should exceed 8 hours and preparation should end no later than 8 hours prior to colonoscopy. Patients should be instructed to drink a minimum of 8 glasses of water with each dose of picolax.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1762 IMPROVED ADENOMA DETECTION WITH ELUXEO LINKED COLOR IMAGING (LCI) AS COMPARED TO THE TRADITIONAL WHITE-LIGHT HIGH-DEFINITION COLONOSCOPY—A RANDOMIZED CONTROLLED TRIAL

M. Szalai1, L. Oczella1, Z. Dubravskis2, A. Szepes3, L. Madacy3
1Endo-Kapszula Private Endoscopy Unit, Szekesfehervar/Hungary
2Gastroenterology & Endoscopy, Bacs-Kiskun Country Hospital
3Department Of Gastroenterology, Bacs-Kiskun County Hospital, Hungary, Endocam LTD, Szekesfehervar/Hungary

Contact E-mail Address: dr.szalai.milan@gmail.com

Introduction: Colonoscopy is the gold standard method of colorectal cancer and polyp screening, but polyps are missed during a colonoscopic examination at a rate that varies from 6% to 27%. Improved adenoma detection rates can be achieved with optimized endoscopic visualization methods. A recently developed new Fujinon endoscope system, Eluxeo carries a new function of electronic chromoendoscopy, Linked Color Imaging (LCI), that enhances the coloring and visibility of mucous membranes and blood vessels which are difficult to see with the conventional endoscopes. In our prospective randomized study, we evaluated the effectiveness of LCI, a new endoscopic visualization technique that may enhance image quality to improve colonic adenoma detection.

Aims & Methods: Up till now 247 eligible patients, elder than 45 years, admitted for screening outpatient colonoscopy were randomly enrolled to undergo high-definition white-light colonoscopy (WLC) or LCI colonoscopy during instrument withdrawal. The colonoscopic procedures were performed by three experienced endoscopists (median 7000 processor and with either the conventional high-definition Fujinon EC 590Z or a new EC 760Z VS Eluxeo colonoscope. All of the colonoscopic procedures were made under Propofol deep sedation guided by an anesthesiologist team. The minimum withdrawal time was defined as more than 6 minutes. All colonoscopies were routinely assisted with pure CO2 insufflation. The primary outcome parameter of our study was to assess and compare the polyp and adenoma detection rate with the two endoscopic technology.

Results: A total of 247 patients were randomized (mean age 58.7 years), 101 patients enrolled in the WLC group and 146 patients in the LCI group. No significant differences have been observed in the patient demographics and colonoscopy withdrawal time between the two groups. Patients having both colorectal polyps and adenomas were detected more frequently in the LCI group than in the control group: 60.9% and 43.8% versus 55.4% and 33.6% respectively, however, this was not statistically significant (p = 0.32 and 0.16). In contrast, the total number of adenomas relative to the total number of polyps detected with LCI withdrawal were significantly higher than with conventional WLC: 105 vs. 82, respectively (p < 0.04).

Conclusion: The LCI enhancement of the Fujinon Eluxeo colonoscopy system was superior to the conventional HD-WLC in detecting patients with colorectal adenomas, which was mainly due to the ability of the more sensitive detection of minute (less than 5 mm) adenomas.Study was supported by ECT grant GINOT 2.1.1.15-2015-00128.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1763 COMPREHENSIVE ANALYSIS OF LONG NON-CODING RNAs WITH CHARACTERISTIC EXPRESSION LEVEL ALTERNATION IN COLONORECTAL ADENOMAS AND CANCERS

A. Kalmár1, Z.B. Nagy2, O. Galamb2, B. Wichtmann3, B.K. Bartak2, G. Valcza2, K. Szereti2, Z. Tulaszay2, P. Irga2, B. Molnár1
12nd Dept. Of Internal Medicine, Semmelweis University, Budapest/Hungary
2Zsigmondy Institute of Internal Medicine and Department of Internal Medicine, Cell Analysis Laboratory, Budapest/Hungary

Contact E-mail Address: alexandra.kalmar@gmail.com

Introduction: Long non-coding RNAs (lncRNAs) play role in colorectal cancer (CRC) development, however, lncRNA expression profile in CRC and its relation to the epigenetic regulatory system still remain incomplete. Aims & Methods: We aimed the perform whole genomic lncRNA expression to the epigenetic regulatory system still remain incomplete. We examined a total of 245 colon samples. Of those, there were 101 colorectal carcinoma tissues, for 70 of which paired normal mucosa was also examined. A total of 74 colorectal adenomas were examined. Quantitative real time PCR was used to measure AAT expression. Clinical evaluation of AAT levels was demonstrated in terms of disease-free survival (DFS) and overall survival (OS).

Results: Alpha-1-antitrypsin expression was found to be significantly associated with longer DFS (p = 0.028). Cox proportional hazard regression model using univariate analysis revealed that high status alpha-1-antitrypsin expression is a significant factor for disease-free survival (DFS) (p = 0.002) and overall survival (OS) (p = 0.026) in patients with colorectal cancer. Kaplan-Meier survivor curves demonstrated that low alpha-1-antitrypsin expression is significantly associated with longer DFS (p = 0.001) and also OS (p = 0.021).

Conclusion: Our data suggests that alpha-1-antitrypsin expression could be considered as a potential biomarker of unfavorable prognosis for colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

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neoplastic, and therefore should be resected, hyperplastic polyps never turn malignant and do not require specific endoscopic therapy. The aim of our prospective, randomised study was to distinguish subcentimetric hyperplastic and adenomatous polyps based on Fujinon FICE versus Eluxeo BLI electronic chromoendoscopic technology with high-definition colonscopy with and without optical magnification.

Aims & Methods: In order to create a video and digital picture library of polyps, patients undergoing screening or diagnostic colonoscopy were considered for inclusion. Patients with at least one histologically verified <10mm polyp were included. Two videos and a still picture of each polyp were recorded with and with 50x optical zoom at standard white-light (WLI), and with FICE-light or BLI-light were recorded with Fujinon EC 590Z and EC760Z endoscopes and stored in an anonymized database. One of the video-library was created by each of our 5 colonoscopic experts (ML, SZM, OL, DZS, and SZA) independently and randomly reviewed all of the cases with a standardized electronic questionnaire. In each case, all of the observers had to assess the color, the vascularization and the surface of the polyps, and the pit pattern was also assessed (i.e. Kudo classification). Finally, with the definition of confidence (low/medium/high on VAS), the histological prediction and the final decision has been clarified on each lesion as neoplastic or non-neoplastic (hyperplastic).

Results: Up till now 115 polyps were enrolled and recorded into our digital web-based library, 59 were assigned into the FICE and 56 into the BLI group. All of the detected 115 polyps were endoscopically removed and histologically analyzed and this was regarded as gold standard. The overall accuracy with WLI versus FICE versus BLI technology of the 5 experts without zoom and with 50x magnification to differentiate between hyperplastic and adenomatous lesions were 77.62% and 84.31%, vs. 74.58% and 83.90% vs. 89.84%, respectively. There was an excellent correlation between the histopathological results and our KUDO classification with both FICE and BLI technology. Both 50x times optical zoom and BLI technology were independently and significantly improved our confidence rate that was associated with a more precise histopathological prediction as compared to non-zoom, WLI or FICE endoscopic polyp assessment.

Conclusion: The new electronic chromoendoscopic technology with Eluxeo BLI significantly improved the reliability of the histology prediction as compared to Fujinon EC590Z and EC760Z technology. High-confidence predictions for the differentiation of neoplastic and non-neoplastic polyps with Eluxeo BLI electronic chromoendoscopy provide a potential for real-time endoscopic diagnosis of hyperplastic polyps to support resect and discharge strategy. (Study was supported by ECT grant GB/15-5/0128)

Disclosure of Interest: All authors have declared no conflicts of interest.
symptomatic condition (lumbago; lesion site (Rx/Rx/Rb), 1/2/19 cases; mean tumor size, presence of biopsies, metastatic enzymes; biopsy positivity rate, 11/14 (78.5%); presence/absence of endoscopic ultrasonography, 11/11 cases; and M/S/M/MP, 1/19/1 cases. The TNM classification of the cases was as follows: T1a, 16 cases; T1b, 5 cases; T2, 1 case; N1, 1 case; and M1, 1 case. The treatment was palliative (curative intention/endoscopic mucosal resection with ligation/endoscopic mucosal resection/endoscopic submucosal dissection/surgery/desert/therapy in 5/7/2/1/1 case. Of 19 endoscopic treatment cases, 15 corresponded to a tumor diameter of ≤10 mm, with negative resection margin and vascular invasion as criteria for curative resection, and 3 cases of unknown stumps were recognized. In the EMRL group, all cases were negative. In all the cases except the case of other-disease death, it elapsed without recurrence. Both surgical cases showed a positive vascular invasion, and one case was a confirmed N1, but neither of the patients survived without a recurrence. In the case with hepatic and bone metastases, medication was administered, and the effect was temporarily effective, but the patient died a year and a half later.

Conclusion: Endoscopic treatments are considered appropriate for rectal NETs with low malignancy, and they are being used as a selective eradication method.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1772 Efficacy and Safety of Twelve Chemopreventive Regimens for the Recurrence of Colorectal Adenomas: A Network Meta-Analysis

H. Chen
Jiangsu Province Hospital, Nanjing/China

Contact E-mail Address: chenhun686@hotmail.com

Introduction: Although various pharmacological agents have been trialed for recurrent colorectal adenomas, their comparative effectiveness remains unknown. We conducted both direct and indirect comparisons of twelve chemopreventive agents for recurrent colorectal adenomas.

Aims & Methods: MEDLINE, EMBASE, Scopus, Web of Science, and Cochrane Central Register of Controlled Trials, and ClinicalTrials.gov were searched up to May 1, 2016. RCTs were assessed by a random-effects model within a Bayesian framework. Agents for each outcomes were ranked by surface under the cumulative ranking area (SUCRA). This study is registered with PROSPERO, number CRD42016041923.

Results: 33 RCTs were eligible, enrolling 44,647 participants treated by twelve regimens: 9 aspirin and other NSAIDs, 11 antioxidants, 4 dietary supplements, and 2 calcium with vitamin D. For each regimen, findings were significantly better for sulindac plus metformin, ursodeoxycholic acid (UDCA), aspirin plus calcium with vitamin D, and difluoromethylornithine (DMFO) plus sulindac. For recurrent colorectal adenomas, findings were significantly better for sulindac plus difluoromethylornithine than other tested agents. Aspirin/NSAIDs was more effective than placebo in both pairwise (OR, 0.73 [95% CI, 0.59 to 0.90]) and network analysis (0.75 [95% CI, 0.57 to 0.98]). Subgroup analysis showed the highest probability of aspirin (≤10 mg/L) to be the most efficacious agent among all NSAIDs (SUCRA = 71.7%). For safety profiles, the top three ranked agents were metformin (86.8%), antioxidants (82.0%) and dietary supplements (65.9%), but none reached statistically significant when compared with placebo. Aspirin/NSAIDs performed the worst (16.4%) with significantly more serious adverse events than placebo (pairwise OR, 1.25 [95% CI, 1.14 to 1.38]; NMA OR, 1.25 [95% CI, 1.12 to 1.44]). Other regimens were not significantly different to each other in both pairwise and network comparisons, these agents include antioxidants, dietary supplements, calcium as well as folic acid.

Conclusion: For individuals with presumed increased risk of CRC, moderate-to-large dose aspirin/NSAIDs is a reasonable combination therapy both effective for recurrent colorectal adenomas. Future studies are required to provide more precise estimates of the optimal NSAIDs with an effective dose and low adverse events. We also suggest the further evaluation of NSAIDs-associated combination regimens and other novel agents (e.g., melatonin) in the chemoprevention of CRC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1774 Prognostic Role of Glasgow Prognostic Score in Patients with Colorectal Cancer: Evidence from Eight Studies

Y. Liu1, X. He2, J. Pan3, S. Chen2, L. Wang4
1Institute of Gastroenterology, Hangzhou/China
2Department of Gastroenterology, Sir Run Run Shaw Hospital, Zhejiang University Medical School, Hangzhou, China
3Department of Endocrinology and Metabolism, Second Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou/China
4The Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China

Contact E-mail Address: liu.chi@163.com

Introduction: Colorectal cancer (CRC) is the third most common cancer worldwide. However, CRC is an indolent disease that likely influences survival. The Glasgow Prognostic Score (GPS) was proposed to predict survival in CRC patients by the combination of the level of serum C-reactive protein (CRP) and albumin, which are indicators of systemic inflammatory response and nutritional status respectively. Growing evidence suggested that GPS was served as an independent prognostic index in a variety of malignant cancers. For patients with CRC, the GPS system was also widely studied, but the results were controversial.

Aims & Methods: To investigate the correlation between GPS and prognosis of patients with CRC to further clarify its clinical significance. A comprehensive search was performed. Embase, Web of Science, Web of knowledge, and Chinese National Knowledge Infrastructure was performed to identify eligible studies, from which the risk of overall survival (OS) and cancer-specific survival (CSS) were extracted. A random-effect model was adopted to combine hazard ratio (HR) and 95% confidence interval (CI). Heterogeneity and publication bias among studies were assessed.

Results: 25 articles with a total of 5660 participants were included. The pooled results indicated that elevated GPS was associated with poor OS (HR = 2.83, 95%CI: 2.00–4.00, P < 0.01) and CSS (HR = 1.94, 95%CI: 1.51–2.49, P < 0.01). This correlation was confirmed both in primary operable and advanced inoperable patients. Increased GPS was also closely related to advanced tumour-node-metastasis (TNM) stage (odds ratio [OR] = 1.44, 95%
Disclosure of Interest: All authors have declared no conflicts of interest.

References:

**P1775 COST EFFECTIVENESS OF THE FIRST SURVEILLANCE COLONOSCOPY IN POPULATION WITH ADVANCED COLORECTAL POLYPS OR MULTIPLE POLYPS FROM COLORECTAL CANCER SCREENING PROGRAM**

L. Carot1, M. Gonzalez2, M. Battile1, A. Burron2, X. Bessa Casarras3, M. Andreu Garcia4, A. Alvarez-Urturi1
1Gastroenterology, Hospital del Mar, Barcelona/Spain
2Hospital del Mar, Barcelona/Spain

Contact E-mail Address: l.carot.le@parcdelmar.cat

Introduction: The implementation of the CRC screening program has generated an increase in surveillance colonoscopies. However, the intermediate-high risk group that included advanced lesions (size >10 mm, villous component or high grade dysplasia) or the presence of 3 or more polyps, has a low incidence of metachronous risk lesions when performing colonoscopy at 3 years according to the current recommendations. Identifying predictors of metachronous lesions would provide a better risk stratification and improve the efficiency of surveillance programs.

Aims & Methods: We aimed to identify the cost effectiveness of the first surveillance colonoscopy and the predictive factors of metachronous lesions at 3 years in individuals with advanced lesions or ≥3 polyps detected at baseline screening colonoscopy. This was an analysis of all cases with advanced polyps and/or multiplicity from CRC screening program population of Barcelona detected at baseline colonoscopy during the years 2010–2011 and with a performed colonoscopy after 3 years. Epidemiological and clinical data of all individuals were collected as well as the morphological data of all polyps. For the statistical study, a bivariate analysis and logistic regression were performed.

Results: 638 cases were identified, with mean age of 64 years. 342 were men (62.6%). 23.8% required more than one colonoscopy for the complete removal of all polyps. A complete surveillance colonoscopy at 3 years was performed in 518 cases (82%) with an average surveillance time of 38 months [15–75]. Mean fecal hemoglobin was 440 ng/ml. 51.8% suffered from hypertension, 15% from diabetes mellitus, 46.5% from dyspepsia and 12.3% from chronic obstructive pulmonary disease. 45.8% of individuals were overweight (BMI ≥25) and 34.7% were obese (BMI ≥30). Surveillance colonoscopy was normal or with low-risk polyps in 420 cases (80.1%); and advanced polyps or multiplicity were identified in 98 cases (18.9%). 73 advanced adenoma in 59 cases (11.4%), ≥3 adenomas in 62 cases (11.1%), ≥3 adenomas and/or serrated in 71 cases (13.7%). The presence of ≥3 adenomas and/or serrated polyps was the only variable that was associated with increased risk of the diagnosis of advanced adenomatous or serrated lesions in surveillance colonoscopy (p < 0.001).

Conclusion: In individuals with advanced polyps and/or multiplicity the incidence of metachronous risk lesions at 3 years is low. Assessment a baseline colonoscopy with complete removal of all the polyps could allow to increase the interval of surveillance, maintaining and ensuring the compliance of the surveillance colonoscopy at 3 years in the cases with multiplicity in the baseline colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: The transition to population-based program resulted in the improve-ment of target population participation followed by increase in colorectal neo-plasia detection.

Disclosure of Interest: All authors have declared no conflicts of interest. Supported by the projects M01012 and PRVOUK-P27-LF1/1

**P1778** LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOUS DISSECTION FOR EARLY CANCER AND HIGH GRADE DYSPLASIA IN COLORECTUM

P. Zhou1, T. Chen2
1Endoscopy Center, Zhongshan Hospital, Fudan University, Shanghai/China

**Contact E-mail Address:** chentao66@yahoo.com

**Introduction:** Although endoscopic submucosal dissection (ESD) is a widely accepted treatment for colorectal neoplasia, little is known about large consecutive studies evaluating long-term outcomes of early cancer and high grade dysplasia. We assessed the efficacy and safety of ESD for early cancer and high grade dysplasia in colorectum and evaluated the long-term outcomes, including local recurrence and metastasis.

**Aims & Methods:** We performed a retrospective analysis of data collected from 5 consecutive patients with 520 colorectal early cancer and high-grade dysplasia treated with ESD between January 2007 and December 2013. Histology and patient data were collected during an average follow-up time of more than 5 years to determine tumor stage and type, resection status, complications, tumor recurrence, and distant metastasis.

**Results:** The overall rates of en bloc resection, complete resection, R0 resection, major complications were 94.4%, 91.5%, 89.2% and 2.1%, respectively. Large tumors and snare-assisted ESD were independent factors of piecemeal resection. ESD of colon tumors increased the risk for complications. During the follow-up period, all patients remained free from metastasis. However, local recurrence occurred in 4 patients (0.8%); large tumors and piecemeal resection were risk factors.

**Conclusion:** ESD is effective and safe for resection of early cancer and high grade dysplasia in colorectum and long-term outcomes are favorable. ESD is indicated for the treatment of colorectal early cancer and high grade dysplasia to obtain curative resection and prevent the local recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1779** LOW UPTAKE OF PSYCHOLOGICAL THERAPIES AMONG PATIENTS WITH IRRITABLE BOWEL SYNDROME IN SECONDARY CARE

O. Craig1, C. Black2, L. Houghton2, A.C. Ford1
1Leeds Gastroenterology Institute, St. James’s University Hospital, Leeds/United Kingdom
2Leeds Institute Of Biomedical & Clinical Sciences, St. James’s University Hospital, Leeds/United Kingdom

**Contact E-mail Address:** ofcraig@gmail.com

**Introduction:** Patients with irritable bowel syndrome (IBS) often have co-existent mood disorder and psychological illness. Meta-analyses of randomised controlled trials consistently demonstrate that psychological therapies, such as cognitive-behavioural therapy (CBT) and hypnotherapy, are effective treatments for IBS. In the UK the National Institute for Health and Care Excellence (NICE) recommends considering the use of these in patients with no response to pharmacological therapies, and for refractory symptoms.

**Aims & Methods:** We performed a cross-sectional survey to examine willingness to engage with psychological therapies. We collected complete symptom data from consecutive patients of the WMC study. Were analyzed data about gastric emptying time (GET), small bowel transit time (SBTT), colonic transit time (CTT) and whole gut transit time (WGET).

**Results:** One patient could not swallow the capsule, and of the 14 patients completing the study, 8 reported GI symptoms. Compared to non-symptomatic patients, those with GI symptoms showed significant delayed transit in the stomach, colon and whole gut (table 1). However, small bowel transit did not significantly differ. GI dysfunction was not correlated with H&Y score in this small study used the risk factor score was correlated, suggesting a pan-enteric problem in symptomatic individuals. There was a significant correlation between the Wexner constipation score and the whole gut transit time (WGET).

**Conclusion:** GI symptoms were prevalent in symptomatic but not non-symptomatic PD. The results of Wireless Motility Capsule did not differ between non-symptomatic patients and controls.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1780** GUT SYMPTOMS AND TRANSIT DISTURBANCE IN PARKINSON’S DISEASE ARE PAN-ENTERIC BUT NOT UBQUITOUS: A WIRELESS MOTILITY CAPSULE STUDY

V. Passananti, N. Zarate Lopez, R. Sweis, A. V. Emmanuel
GI Physiology Unit, University College London Hospital, London/United Kingdom

**Contact E-mail Address:** valentinapassananti@gmail.com

**Introduction:** Symptoms of gastrointestinal dysfunction are among the most common non-motor complaints in Parkinson’s patients. These may involve muscles from the oropharynx to the anorectum, and the autonomic and enteric nervous system are often involved, resulting in secondary bowel dysmotility.

**Aims & Methods:** The objectives of this study were to evaluate a technology measuring the spectrum of gut dysfunction, the Wireless Motility Capsule (WMC), in Parkinson’s disease. We also wanted to correlate transit measures with gastrointestinal symptoms. Fifteen PD patients and 7 controls (table 1) were included. PD severity were scored with the modified Hoehn and Yahr (H&Y) staging scale. GI symptom burden was identified by Wexner constipation score and Gastroparesis Cardiomyopathy Index (GCSI). Acidity, motility and transit data were obtained, as standard, by WMC. All medications affecting pH and motility, including L-dopa, were discontinued for 5 days before and for the duration of the study. GET, small bowel transit time (SBTT), colonic transit time (CTT) and whole gut transit time (WGET).

**Results:** One patient could not swallow the capsule, and of the 14 patients completing the study, 8 reported GI symptoms. Compared to non-symptomatic patients, those with GI symptoms showed significant delayed transit in the stomach, colon and whole gut (table 1). However, small bowel transit did not significantly differ. GI dysfunction was not correlated with H&Y score in this small study used the risk factor score was correlated, suggesting a pan-enteric problem in symptomatic individuals. There was a significant correlation between the Wexner constipation score and the whole gut transit time (WGET).

**Conclusion:** GI symptoms were prevalent in symptomatic but not non-symptomatic PD. The results of Wireless Motility Capsule did not differ between non-symptomatic patients and controls.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Table:**

<table>
<thead>
<tr>
<th>Non-symptomatic (n=6)</th>
<th>Symptomatic (n=8) [p value vs Non-symptomatic PDI]</th>
<th>Controls (n=7) [p value vs Non-symptomatic PDI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET 3.2 [0.0003] 2.1</td>
<td>5.18 ± 0.58 [0.0007] 2.58 ± 1.14 [0.4713] 3.2 ± 0.7193</td>
<td>5.40 ± 0.70 [0.7294] 2.83 ± 6.90 [0.5156]</td>
</tr>
<tr>
<td>SBTT 4.08 ± 0.71</td>
<td>4.17 ± 0.34 [0.7193] 4.10 ± 0.40 [0.7294]</td>
<td>5.68 ± 13.1 [0.0924] 2.6 ± 1.8 [0.4713]</td>
</tr>
<tr>
<td>CTT 3.3 ± 1.5</td>
<td>14.3 ± 3.2 [0.0003] 2.1 ± 3.0 [0.6428]</td>
<td>56.8 ± 13.4 [0.2744] 2.1 ± 3.0 [0.6428]</td>
</tr>
<tr>
<td>Age 61.2 ± 10.9</td>
<td>69.6 ± 13.4 [0.0017] 22.6 ± 9.6 [0.5704]</td>
<td>22.6 ± 9.6 [0.0017] 22.6 ± 9.6 [0.5704]</td>
</tr>
<tr>
<td>M:F 5:1</td>
<td>2:1 [0.0003] 2:1 [0.0003]</td>
<td>2:1 [0.0003] 2:1 [0.0003]</td>
</tr>
</tbody>
</table>

**Conclusion:** We have shown that Parkinson’s patients with gut symptoms have both upper and lower complaints. Symptomatic PD patients also have markedly delayed transit times throughout the whole gut compared to asymptomatic PD patients and controls. Whilst severity of constipation is related to delayed colonic transit no such relationship was present between gastroparesis symptoms and gastric emptying. The implication is that treating symptomatic Parkinson’s patients should address the whole gut, whether with prokinetics or dual therapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1781** OUTLET DYSFUNCTION IS PREVALENT IN SEVERE FUNCTIONAL BLOATING: PRELIMINARY REPORT FROM A MULTICENTER ITALIAN STUDY

P. Iovino1, M.C. Neri2, L. D’Alba3, S. Gallotta1, G. Chiariom1
1Medicine And Surgery, University of Salerno, Baronissi, SA/Italy
2Istituto Pio Albergo Trivulzio, Milan/Italy
3Gastroenterology And Digestive Endoscopy, Azienda Ospedaliera San Giovanni Addolorata, Rome/Italy

**Contact E-mail Address:** piovino@unisa.it

**Introduction:** Bloating and abdominal distension are common and bothersome symptoms of gastrointestinal disorders (FGID). Recent studies demonstrated that an impairment in psychological therapies as their first-choice treatment option than those with mild or moderate symptoms (7.7% versus 21.7%, P<0.10).

**Conclusion:** Despite high levels of psychological comorbidity and NICE recommendations, patients with IBS in a specialist clinic were generally reluctant to consider psychological therapies such as CBT or hypnotherapy. Those with anxiety, depression, somatof orm-type behaviour, or severe symptoms were no more willing to consider these therapies than those without.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
the handling of gas is a relevant underlining mechanism in FGID patients with bloating. The combination of symptoms associated with predominant FI in these patients is lacking.

Aims & Methods: Our aim is to study the relationship between the defecation pattern, the severity of bloating and the abdominal girth measurements in FGID patients consulting for bloating as primary complaint with/without visible abdomen being not responsive to dietary advice. We performed a prospective, multi-center study of patients with severe abdominal bloating (VAS score ≥ 4 on a 100-mm scale) as primary complaint with/without visible abdominal distension. Patients were recruited at 4 gastroenterology outpatient clinics in Italy. Combinedaccording to the Rome III criteria. All patients were prescribed a lactose-free diet supplemented by dietary advice according to the NICE guidelines for two weeks. A belt around the abdomen at standardized sites provided assessment of abdominal girth measurements. During the 2-week run-in period patients completed a daily diary log including abdominal bloating and pain/discomfort scores (100-mm VAS), Bristol Stool Form and stool frequency. At randomization visit, all patients filled in a questionnaire on adequate relief of bloating on a Likert scale and a further abdominal bloating 100-mm VAS were recorded. Subsequently patients provided assessment of abdominal girth two hours after a meal. All patients reporting insufficient adequate relief of abdominal bloating at the end of the run-in period underwent a standardized balloon expulsion test (BET) scored as either successful or failed. A straining questionnaire was also administered.

Results: 76 patients (66 female, 39.3 ± 12.2 mean age, 6 IBS-D, 6 IBS-M, 30 IBS-C, 9 IBS-U, 6 FC, 16 FB, 3 FD) completed the 2-week run-in period. A significant negative correlation was found between adequate relief and both bloating and abdominal girth changes (r = -0.53 and -0.52, p < 0.001, respectively). 37/76 (70%) patients reported inadequate relief (worse or no improvement). Among the non-responders the vast majority (68%) failed the BET. Multiple regression analysis showed that BET (successful or failed) as dependent variable, was significantly related to bloating severity. No relationship was demonstrated for abdominal girth changes, FGID diagnosis and straining questionnaire.

Conclusion: In this prospective, multicenter trial simple diet advise was of benefit in approximately 30% of FGID patients consulting for severe bloating. In the non-responders outlet dysfunction was prevalent and correlated with subjective bloating perception. The study is ongoing, but our data may support bowel retraining as potential treatment option for functional bloating.

Disclosure of Interest: None

Contact E-mail Address: emanuela.rubichini@gmail.com

Introduction: Faecal Incontinence (FI) is a common and socially disabling condition, more prevalent among females over 50 years old. Detailed anatomical and physiological assessment of each patient is important to determine the correct cause of FI and selection the most appropriate therapy. Conventional and High Resolution (HR) Anorectal Manometry (ARM) is a useful tool to categorize anal and/or rectal dysfunction in addition to provide physiological assessment of both anal sphincters and rectum.

Aims & Methods: To evaluate symptoms and anorectal function of patients affected by FI, we included 358 patients with FI (77% female (F) and 23% men (M), mean age 63 range 22–92 year) referring to the outpatient unit of Digestive Pathophysics of S. Giovanni Addolorata Hospital, Rome from January 2006 to December 2016. Clinical presentation (history, symptom profile and severity) and anorectal physiological evaluation (digital examination, manometry, rectal sensory testing, balloon evacuation test) were analyzed. The manometric parameters obtained with conventional and HR-ARM were: resting pressure, squeeze pressure, rectal compliance, rectal sensitivity and the anorectal pattern during the defecatory maneuvers.

Results: Out of 358 patients (32%) reported both FI and difficult evacuation stool, while also urinary incontinence UI (47%). Proctological surgery (n 122, 34%), pelvic surgery (n 77, 21%) and traumatic anal or vaginal delivery. Furthermore, patients with FI referred difficulty evacuating stools, too. In fact in patients with dysosyme-type constipation, the FI may be confused with an enuresis. Finally we observed these prevalent manometric alterations: combined dysfunction IAS and EAS, and rectal hypersensitivity. Manometric findings could help physicians to identify appropriated patients for a biofeedback therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

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2. Townsend DC, Carrington EV, Grossi U, Burgell RE, Wong JY, Knowles CH, et al. “entero-neurogastroenterology. Research Unit Gastroenterology Department, Hospital General Vall deHebron, Vall d‘Hebron Research Institute, Barcelona/Spain
3. Neuro-immuno-gastroenterology. Research Unit Gastroenterology Department., Hospital General Vall deHebron, Vall d‘Hebron Research Institute, CIBERehd, Barcelona/Spain
4. Nuclear Medicine Department, Hospital General Vall d Hebron, Barcelona/Spain

Contact Email Address: eladiahibaercaselles@gmail.com

Introduction: Bile acid malabsorption (MAB) is a common and frequently under-investigated cause of chronic diarrhoea. Most of the cases of chronic diarrhoea after excluding organic disorders are labelled as functional diarrhoea or irritable bowel syndrome (IBS). The most commonly used diagnostic test is Schematic homocholic acid taurine (SeHCAT) scan due to its sensitivity, specificity, safety and low cost. However this test is not frequently used in the algorithm for the diagnosis of chronic diarrhoea.

Aims & Methods: We aimed to evaluate the usefulness of SeHCAT scan in evaluating patients with chronic diarrhoea and identify potential risk factors associated to MAB. We retrospectively reviewed all patients who had SeHCAT scan between June 2014 and October 2016 in a University Hospital. BAM was defined as SeHCAT retention of less than 15%. We collected the following variables: demographic characteristics, IBS-D/Rome III criteria, duration of diarrhoea (months), stool culture, parasitologic investigation of stool specimens, background of comorbid gastrointestinal and other comorbid conditions, positive HLA-DQ2 and DQ8 haplotype.

Results: 137 patients referred to clinic for chronic diarrhoea underwent SeHCAT testing over the reviewed period. 42M; 95F, median age 46 y (range 0–76) median BMI 25.3 kg/m2 (range 17.3–39.7), 70.4% of patients had IBS-D Rome III criteria, median duration of diarrhoea 48 months (95% CI 43.0–59.24). Background of co-morbid gastrointestinal conditions 45.3% (62/136), other co morbid conditions 55.3% (75/136). History of previous positive stool culture 13%, other pathologies and parasitologic investigation of stool specimens 13% (17/136). Percentage of positive HLA-DQ2 and DQ8 haplotypes were 27.8% (35/126) and 10.2% (13/127), respectively. SeHCAT test was positive for BMA in 48.9% (67/137); 25.4% (mild 10–15%); 31.3% (moderate 5–10%), and 43.5% (severe < 5%). Patient characteristics between positive and negative SeHCAT test were similar (Table 1). Interestingly, patients with SeHCAT test exhibited longer periods of diarrhoea.

Table 1

<table>
<thead>
<tr>
<th>Sex (M/F)</th>
<th>Positive</th>
<th>Negative</th>
<th>SeHCAT test</th>
</tr>
</thead>
<tbody>
<tr>
<td>30(57)</td>
<td>12(36)</td>
<td>18(51)</td>
<td></td>
</tr>
<tr>
<td>Age (median; 95% CI)</td>
<td>48(0.45;53.4)</td>
<td>40(0.49;49.4)</td>
<td></td>
</tr>
<tr>
<td>BMI (median; 95% CI)</td>
<td>26(42.5;25.8)</td>
<td>23(42.5;25.9)</td>
<td></td>
</tr>
<tr>
<td>Duration of diarrhoea (months; median; 95% CI)</td>
<td>60(43.5;66.9)</td>
<td>24(0.035;58.34)</td>
<td></td>
</tr>
<tr>
<td>IBS-D/Rome III criteria</td>
<td>67.2% (45.67)</td>
<td>71.4% (50.70)</td>
<td></td>
</tr>
<tr>
<td>(%)</td>
<td>34.3% (23.67)</td>
<td>14.3% (10.70)</td>
<td></td>
</tr>
<tr>
<td>(%)</td>
<td>14.9% (10.67)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>(%)</td>
<td>41.8% (28.67)</td>
<td>48.6% (34.70)</td>
<td></td>
</tr>
<tr>
<td>Other co morbid conditions</td>
<td>57.1% (36.63)</td>
<td>53.6% (37.69)</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
P1784 INTAKE OF FERMENTABLE OLIGO-, DI- AND MONOSACCHARIDES AND POLYOLS (FODMAPS) INCREASES THE RISK OF IRRITABLE BOWEL SYNDROME (IBS) IN INDIVIDUALS EXPOSED TO PSYCHOSOCIAL STRESS IN THE COMMUNITY: RESULTS OF A LARGE, PROSPECTIVE, POPULATION BASED STUDY


1Abdominal Center: Gastroenterology, St. Claraspital, Basel/Switzerland
2Gastroenterology, Department of Gastroenterology, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, Hangzhou, Zhejiang Province, China, Hangzhou/China
3Gastroenterology, Department of Gastroenterology, The First People's Hospital of Hangzhou, Hangzhou, Zhejiang Province, China, Hangzhou/China
4Gastroenterology, Department of Gastroenterology, Zhejiang Hospital, Hangzhou, Zhejiang Province, China, Hangzhou/China
5Department of Epidemiology & Statistics, Department of Medicine, Zhejiang University, Hangzhou, Zhejiang Province, China, Hangzhou/China
6Zhejiang Provincial Key Laboratory of Laparoscopic Technology, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, Hangzhou, Zhejiang Province, China, Hangzhou/China

Contact E-mail Address: dr.mark.fox@gmail.com

Introduction: The cause of IBS is unclear; however, food intolerances share many features with this condition. Consumption of FODMAPs has been shown to induce IBS-type symptoms (Shephard 2008) and clinical trials have shown that a low FODMAP diet can improve symptoms in this patient group (Halmos 2014). However, FODMAP intake is not higher in IBS than in health (Bohn 2013) and it is not proven that the outcome of low FODMAP diet is better than standard dietary advice in this condition (Bohn 2015). Recent, experimental research has shown that psychological factors are associated with increased postprandial symptoms in IBS patients (Zhu 2013, Van Oudenhove 2016). This study was designed to assess the relative importance of, and interaction between, psychiatric disease, social stress and diet in the aetiology of IBS in the general community.

Aims & Methods: This population based study tested the hypothesis that high FODMAP intake increases the risk of IBS more in individuals with psychiatric disease and/or life event stress than other members of the community.

Subjects aged 16–74 were randomly selected from five South-Chinese communities. All subjects completed questionnaires by face-to-face inquiry with investigators including demographic information, gastrointestinal symptoms (Rome III, dietary intake (food frequency chart validated in Chinese community), psychiatric disease (HADS), life event stress (LES) and quality of life (SF-8).

Results: From 1999/2015 (94.7%) members of the community that completed study questionnaires, 117 (5.9%) had IBS by Rome III criteria. The IBS group ingested less lactose than the "No-IBS" group (P = 0.024). Intake of other FODMAPs was similar in both groups (P = 0.346). Compared to the "No-IBS" group, individuals with IBS had a greater likelihood of depression (OR 1.5 (0.97–2.32); p < 0.05), anxiety (2.84(1.84–4.39), p < 0.001), recent life event stress (1.5(1.03–2.20); P = 0.03) or medical and/or surgical co-morbidity (OR 2.9(1.30–5.45), P < 0.001). The IBS group also had lower quality of life (P < 0.001).

Joint effects analysis demonstrated that high FODMAP intake alone was not associated with abdominal symptoms; however, IBS was more common in those with a high FODMAP intake and concomitant psychosocial factors known to increase visceral sensitivity to digestive dysfunction (Zhu 2013). (ClinicalTrials: NCT0126597)

Disclosure of Interest: All authors have declared no conflicts of interest.

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Van Oudenhove, L. "Depression and Somatization Are Associated With Increased Postprandial Symptoms in IBS Patients." Gastroenterology 2016.

P1785 CHARACTERIZING IBS PATIENTS WITH ANXIETY OR DEPRESSION
I. Pontien1, M. Simrén1, H. Törnblom1
1Department Of Internal Medicine And Clinical Nutrition, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden

Contact E-mail Address: irina.pontien@gu.se

Introduction: A large proportion of patients with irritable bowel syndrome (IBS) suffer from anxiety or depression, but the associations with pathophysiologic findings and overall symptom reporting are not clear.

Aims & Methods: We included 772 patients with IBS (Rome III criteria) who attended a university hospital-based outpatient clinic specialized in functional GI disorders between 2005 and 2015. The patients underwent examinations to investigate oro-anal transit time (OATT) and visceral sensitivity (rectal balloon distension and a lactulose challenge test), and they also completed questionnaires to assess depression, anxiety and somatic symptoms. In addition, we recorded the presence of anxiety or depression by a validated self-rated assessment tool (HSCL-25), which asks patients to indicate whether any of the listed symptoms are present during the last week. In patients with a positive response, an interview was performed to assess the presence of more severe symptoms at the subscale level. The patients were stratified into a low stress group (<57), high stress group (57–85), and very high stress group (>85) with regards to the total QOL index score.

Results: Based on validated HAD cut-off levels (≥8), anxiety and depression were present in 55% and 26% of the IBS patients, respectively. More women were anxious (p < 0.001), but for depression no gender differences were detected (p = 0.76). IBS patients with anxiety or depression were younger (p < 0.001), and more commonly reported sexual and/or physical abuse (p < 0.001) than IBS patients without anxiety or depression. The presence of anxiety or depression did not differ between IBS subgroups based on the predominant bowel habit (p = 0.41, p = 0.18). For an overview of comparisons of data from questionnaires and pathophysiological examinations, see table 1. Both the presence of anxiety and of depression were associated with reports of more severe GI and extraintestinal symptoms, GI-specific anxiety, fatigue, and lower sense of coherence. Regarding pathophysiologic examinations, the findings were more inconsistent. OATT was similar between groups, as were stool form and frequency. Visceral sensitivity tended to be higher in patients with anxiety, and depressed patients reported more severe pain during the lactulose challenge.
test. Quality of life (IBSQOL) was reduced for all domains in patients with anxiety and depression (p < 0.001 for all comparisons).

Table 1: Characterization of IBS patients with anxiety or depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Anxiety</th>
<th>Median</th>
<th>P-value</th>
<th>Depression</th>
<th>Median</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS-SSS</td>
<td>No</td>
<td>283.33</td>
<td>&lt;0.001</td>
<td>Yes</td>
<td>298.30</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VAS</td>
<td>No</td>
<td>35.52</td>
<td>&lt;0.001</td>
<td>Yes</td>
<td>79.56</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SOC</td>
<td>No</td>
<td>153.12</td>
<td>&lt;0.001</td>
<td>Yes</td>
<td>146.11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PHQ-12</td>
<td>No</td>
<td>6.9</td>
<td>7.10</td>
<td>Yes</td>
<td>7.0</td>
<td>0.001</td>
</tr>
<tr>
<td>MF1</td>
<td>No</td>
<td>14.14</td>
<td>&lt;0.001</td>
<td>Yes</td>
<td>15.19</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>OATT (days)</td>
<td>No</td>
<td>1.31</td>
<td>0.67</td>
<td>Yes</td>
<td>1.34</td>
<td>0.52</td>
</tr>
<tr>
<td>Stool form (BSF)</td>
<td>No</td>
<td>4.4</td>
<td>0.93</td>
<td>Yes</td>
<td>4.0</td>
<td>0.49</td>
</tr>
<tr>
<td>Stress Vanc (stool/day)</td>
<td>No</td>
<td>1.7</td>
<td>0.57</td>
<td>Yes</td>
<td>1.7</td>
<td>0.36</td>
</tr>
<tr>
<td>Lactulose challenge test, perceived pain (AUC)</td>
<td>No</td>
<td>776.833</td>
<td>0.06</td>
<td>No</td>
<td>705.170</td>
<td>0.01</td>
</tr>
<tr>
<td>Balloon distension, pain threshold (mmHg)</td>
<td>No</td>
<td>28.24</td>
<td>0.01</td>
<td>No</td>
<td>24.28</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Conclusion: The presence of anxiety and depression seems to clearly potentiate the already substantial disease burden in IBS patients. However, the association with other pathophysiologically findings is less distinct. This group of patients with complex and severe symptoms will benefit from a holistic management approach.

Disclosure of Interest: M. Simrén has received unrestricted research grants from Danone and Ferring Pharmaceuticals, and served as a Consultant/Advisory Board member for AstraZeneca, Danone, Nestlé, Menarini, Almirall, Allergan, Alibiero, Glycom and Shire, and as. All other authors have declared no conflicts of interest.

P1786 THE ASSOCIATION BETWEEN IRritable BOWEL SYndrome AND LACTOSE INTOLERANCE

R. Davak1, T. Arslan Kucuk1, S. Turun2, H. Cetin2, A. Eshahali2, C. Dolapcioglu1

1Family Medicine, Dr. Lutfi Kirdar Kartal Research And Training Hospital, Istanbul/Turkey
2Gastroenterology, Dr. Lutfi Kirdar Kartal Training and Research Hospital, Istanbul/Turkey

Contact E-mail Address: resat_davak@hotmail.com

Introduction: Irritable bowel syndrome (IBS) and lactose intolerance may co-exist and readily cause diagnostic confusion due to similar symptomatology (1,2).

Aims & Methods: This study aims to examine the incidence of lactose intolerance in healthy controls and in subjects diagnosed with IBS based on Rome III criteria, as an effort to investigate the association between IBS and lactose intolerance. The patient population consisted of individuals between 18 and 80 years of age who attended between June-December 2013. Patients diagnosed with IBS based on Rome III criteria comprised the IBS group, and subtypes of IBS. Control subjects were healthy volunteers over 18 years of age with no IBS-like symptoms. All participants ingested 25 g of lactose dissolved in 250 ml of water within 5 minutes after 8 hours of fasting, in order to evaluate the lactose intolerance. The presence of anxiety and depression seems to clearly potentiate this overlap and this association with increased health impairment. Study Support: The Rome Foundation

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Although correlations between features of irritable bowel syndrome (IBS) have been reported, these were based on between-person rather than within-person variation. We investigated the longitudinal within-person correlations between features of IBS.

Aims & Methods: We used a longitudinal cohort of 276 IBS patients, who filled out questionnaires one annualy over five years on the following features: gastrointestinal (GI) symptom severity (GSRS), quality of life (QOL), GI specific anxiety (VSI), general anxiety and depression (HADS), coping resources (CRI), and sense of coherence (KASAM). For each participant, scores were centered on their own mean, and within-person correlations were computed for all pairs of features.

Results: Aggregate within-person correlations are shown in figure 1. Within-person correlations were strong for the triad GI symptom severity, GI specific anxiety, and QOL (r: 0.47 to 0.64). Another set of features was comprised of general anxiety, depression, coping resources, and sense of coherence (r: 0.39 to 0.57). Within-person correlations between the two sets were weak (r: 0.00 to 0.37). However, within-person correlations tended towards bimodal distributions across the population, especially for GI symptom severity and depression (r ~ 0.6 for half of participants, and r ~ 0.4 for the other half).

Conclusion: Here we show that, within individual IBS patients, GI symptom severity is strongly correlated with GI specific anxiety and QOL, but not with four other psychological features. The presence of negative within-person correlations in some individuals may imply a lack of relation, but could also signal long-term causative processes.

Disclosure of Interest: J. Tack: Jan Tack has given Scientific advice to Abide Therapeutics, AlfaWassermann, Allergan, Christian Hansen, Danone, Genfit, J. Tack: Jan Tack has given Scientific advice to Abide Therapeutics and Nestle and has given scientific advice to Grünenthal. L. Van Oudenhove: Lukas Van Oudenhove has received grant support from Abide Therapeutics and Nestle and has given scientific advice to Grünenthal. M. Simrén: Magnus Simrén has received unrestricted research grants from Danone and Ferring Pharmaceuticals, and served as a Consultant/Advisory Board member for AstraZeneca, Danone, Nestlé, Menarini, Almirall, Allergan, Albireo, Glycom and Shire, and as a. All other authors have declared no conflicts of interest.

Table

<table>
<thead>
<tr>
<th>Instrument IBS-QOL</th>
<th>Total</th>
<th>F</th>
<th>M &lt; 65</th>
<th>≥ 65</th>
<th>&lt; 3</th>
<th>≥ 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>1595</td>
<td>1437</td>
<td>158</td>
<td>1511</td>
<td>84</td>
<td>92</td>
</tr>
<tr>
<td>Total score, mean</td>
<td>61.1</td>
<td>60.8</td>
<td>63.8</td>
<td>60.9</td>
<td>65.0</td>
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<tr>
<td>Dysphoria</td>
<td>62.3</td>
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<td>68.1</td>
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<td>61.0</td>
<td>47.8</td>
<td>55.5</td>
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<td>49.3</td>
<td>44.7</td>
<td>49.5</td>
<td>57.3</td>
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<td>54.1</td>
<td>49.6</td>
<td>59.5</td>
<td>59.0</td>
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<tr>
<td>Social reaction</td>
<td>67.4</td>
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<td>70.0</td>
<td>66.8</td>
<td>55.5</td>
<td>47.2</td>
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<tr>
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<td>73.6</td>
<td>71.6</td>
<td>73.3</td>
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<td>EQ-SD n</td>
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<td>158</td>
<td>1513</td>
<td>85</td>
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<tr>
<td>Index score, mean</td>
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<td>0.67</td>
<td>0.67</td>
<td>0.70</td>
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</table>

Conclusion: Among this patient population, IBS-C patients with higher symptom severity reported greater impairments in HRQoL. These results indicate that symptom severity may be an important consideration for disease management and emphasise the need for IBS-C treatments that improve both symptom burden and Nestle and has given scientific advice to Grünenthal.


P1790 IRRTABLE BOWEL SYNDROME WITH CONSTIPATION: IMPACT OF SYMPTOM SEVERITY ON HEALTH-RELATED QUALITY OF LIFE: A POST HOC ANALYSIS OF DATA FROM TWO PHASE 3 TRAILS OF LINACLODITE A. Marciniak1, Y. Mo2, J. Ma3, J. L. Abel2, R. T. Carson2

1Allergan plc, Marlton/United Kingdom
2Allergan plc, Jersey City/United States of America/NJ
3Allergan plc, Bridgewater/United States of America/NJ

Contact E-mail Address: Anne.Marciniak@Allergan.com

Introduction: Irritable bowel syndrome with constipation (IBS-C) is a chronic gastrointestinal disorder associated with significant impairment in health-related quality of life (HRQoL). However, information on the impact of IBS-C symptom severity on patients' HRQoL is lacking.

Aims & Methods: This post hoc analysis assessed the burden of IBS-C on HRQoL according to symptom severity among adult patients meeting the modified Rome II criteria for IBS based on baseline data from two Phase 3 clinical trials of linaclootide (C5H11O4·H2O) evaluated based on disease-specific Irritable Bowel Syndrome Quality of Life questionnaire (IBS-QOL) and the EuroQol-5-Dimension (EQ-5D). The IBS-QOL includes eight subscales (dysphORIA, activity interference, body image, health worry, food avoidance, social reaction, sexual, relationships), with total and subscale scores calculated on a 0-100 scale and higher scores indicating better IBS-specific HRQoL. A within-person change of ≥10 points is considered clinically meaningful. The EQ-5D assesses five dimensions of general health (mobility, self-care, usual activities, pain/discomfort, anxiety/depression) and generates an overall index score of between 0 (worst possible health state) and 1 (best possible health state); a within-person change of 0.05 is considered meaningful. Symptom severity was assessed during the pre-treatment period based on the global symptom score (GSS) on a scale of 0–4, where 0 = no symptoms and 4 = very severe symptoms. Data from both trials were pooled and compared to non-IBS population, the IBS population was younger (mean-age 44.7 ± 14.5 years; p = 0.004) and predominantly female (66%; p < 0.001). Apart from reporting more frequent GI point difference) subscales (Table). Patients with GSS ≥3 also had a lower EQ-SD index score compared to those with GSS < 3 (0.67 vs 0.72) (Table). Women reported a slightly lower mean total IBS-QOL score compared to men, but had a notably lower score (14-point difference) on the body image subscale (Table). No difference in mean EQ-SD score was observed between sexes. IBS-QOL total and EQ-SD index scores were similar between patients aged < 65 and ≥65 years, though the younger subgroup generally had lower scores on the IBS-QOL, including on the food avoidance and sexual subscales (Table).

Table
symptoms, IBS subjects also reported more somatic symptoms; 103 (34%) had abdominal pain at least 3 times/week, 232 (76%) subjects reported sensation of bloating at least 3 times/month, and 232 (76%) scored > 7 on PHQ-12, indicating high somatic symptom burden (p = 0.001 for all). They also had poorer self-rated overall health, more general body pain, and more health-related impairment of social activities (p < 0.001 for all). See Table 1 for details. IBS subjects also reported more frequent visits to the doctor compared to the non-IBS population, both for non-GI and GI related problems; 241 (79%) vs. 3133 (56%) reported seeing a doctor for GI problems (p < 0.001 for all). IBS subjects also reported higher frequency of visits to gastroenterologists, gynaecologists and surgeons in secondary care; p < 0.001 for all. The use of medication for pain (both subscribed and over the counter), GI related symptoms, depression and anxiety was increased amongst subjects with IBS, as was the rate of abdominal surgery (p < 0.001 for all), appendectomy excluded. See table 1 for details.

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**Results:** Significant differences were recorded in the levels of PT (median: 14.5 vs 13.1 sec, p = 0.005) and aPTT (median: 28.7 vs 26.4 sec, p = 0.005) between patients and controls, respectively. Prolongation over the upper limit of normal of PT (>14sec) was most common in IC patients, 67.9% vs 18.2% (p = 0.005) as well as the prolongation of aPTT (>35sec), 12.2% vs 6.2% (p = 0.46). The presence of LA was characterized as weakly present in 5 of 6 patients with the aPTT prolongation (9.6%, normalized LAC ratio: 1.2-1.5) and moderately present in 1 patient (1.9%, normalized LAC ratio: 1.5-2.0).

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


Contact E-mail Address: magnovitor@gmail.com

**Introduction:** Ischaemic colitis (IC) encompasses a number of clinical entities resulting in insufficient blood supply to the colon. The incidence of adverse outcome in patients with IC remains high.

**Aims & Methods:** We conducted a multicenter retrospective cohort study including consecutive patients with IC diagnosed between January 2013 and December 2016, according to the Modified Brandt and Boley criteria (clinical, colonoscopy, pathology consistent with IC and negative culture). The following data were collected: age, sex, clinical symptoms, comorbidities, organ failure, laboratory parameters associated with vitamin K in patients with IC and to compare them with a group of controls (individuals with known predisposing factors for IC but without evidence of the disease). This study was carried out in the context of a study evaluating thrombophilia among IC patients. The present study used the same study groups as the latter. 2.**History of malignancy, systemic inflammation, liver disease-cirrhosis or use of anticoagulants were exclusion criteria. The incidence of adverse outcome in patients with IC remains high.

**Conclusion:** Individuals fulfilling the Rome IV criteria for IBS in the general population have increased GI and non-GI healthcare utilization in primary and secondary care, excess non-GI symptom burden and impaired QOL. [Support: Rome Foundation]

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1792 ISCHAEMIC COLITIS AND VITAMIN K DEFICIENCY: A HYPOTHESIS**

A. G. Tsimplis1, I. A. Linardou, A. N. Kapsoritakis, A. K. Psychos, S. P. Potamianos

Department Of Gastroenterology, Faculty of Medicine, School of Health Sciences, University of Thessaly, Larissa/Greece

**Contact E-mail Address:** atsimperidis@yahoo.com

**Introduction:** Ischaemic colitis (IC) is the most common vascular disease of the colon, although its exact pathophysiological mechanisms remain unclear. 1.**Aims & Methods:** The aim of this study was to evaluate routine coagulation parameters associated with vitamin K in patients with IC and to compare them with a group of controls (individuals with known predisposing factors for IC but without evidence of the disease). This study was carried out in the context of a study evaluating thrombophilia among IC patients. The present study used the same study groups as the latter. 2.**History of malignancy, systemic inflammation, liver disease-cirrhosis or use of anticoagulants were exclusion criteria for both patients and controls. The control group was using more antithrombotic drugs compared to the patients’ group, while no difference was observed in any other drug category. Fifty-six cases of IC (admitted from September 2007 until June 2011 at the tertiary Department of Gastroenterology in central Greece) and 44 controls (subjects admitted for upper gastrointestinal bleeding, choleclocholithiasis, and colon polyps) with known predisposing factors for IC were included in this study. The coagulation indices measured were: prothrombin time (PT), activated partial thromboplastin time (aPTT) and lupus anticoagulant (LA). Venous blood collected from all IC patients and controls at the second or third day of hospitalization (1-3 days from the onset of symptoms).
P1795 THE RISK PREDICTIVE VALUES OF ACG CLASSIFICATION IN A COHORT OF ISCHEMIC COLITIS - REFINING THE DEFINITION OF MILD DISEASE
1Gastroenterology, Hospital Central do Funchal, Funchal/Portugal 2Institute of Gastroenterology And Hepatology, North Lisbon Hospital Center, University of Lisbon, Lisbon/Portugal 3Gastroenterology, Hospital São João, Oporto/Portugal

Contact E-mail Address: carolinarabaptistasmimoes@gmail.com

Introduction: Although most cases of colon ischemia (IC) are mild and self-limiting, when severe it implies high mortality rates. We aimed to evaluate the risk predictive value of classification of disease severity proposed by American College of Gastroenterology (ACG) guidelines (2015), created to provide a management algorithm for these patients and select the level of care.

Aims & Methods: A retrospective multicenter study was conducted on adult patients with definite IC (clinical, colonoscopic, pathologic and culture criteria), between 2013 and 2016. Data was collected on clinical presentation, comorbidities, organ failure, management and outcome. Each case was classified according to ACG guidelines after assessment of the number of risk factors (gender, systolic blood pressure <90 mmHg, heart rate >100 beats per min, abdominal pain without rectal bleeding, BUN > 20 mg/dl, Hgb < 12 g/dl, LDH > 350 U/l, serum sodium <136 mEq/l, WBC > 15 x 10⁹/cmm). Patients were then classified as mild (0 risk factors (RF)), moderate (1 - 3 risk factors) and severe (3 risk factors or any of the following: perineal signs, pneumonia or portal venous gas, gangrene on colonoscopic examination and pan-colonic or isolated right-colon ischemia involvement on imaging by colonoscopy or computed tomography).

Results: 349 cases with the clinical diagnosis of IC were analyzed. 193 patients met the inclusion criteria of definitive diagnosis of IC (62.7% females; mean age 72 years ±13). ACG classification of mild, moderate and severe disease was attributed respectively to 21% of patients (0 intra-hospital deaths), 45% (2 deaths) and 34% (12 deaths). The number of ACG RF was: 40% with 0 RF, 8% with 1, 9% with 2, 15% with 3, 16% with 4, 8% with 5, 4% with 6 and 1% with 7. No patient with 0 or 1 RF died. Only 1 patient with 2 RF died. The remaining 13 deaths were caused by shock due to 3 RF. The univariate analysis revealed a statistical correlation between RF and intra-hospital or 30-day mortality as well as 34% (12 deaths). The number of ACG RF was: 40% with 0 RF, 8% with 1, 9%

Conclusion: No patient in this cohort with less than 2 ACG RF died, suggesting that the ACG classification as mild disease may include 0 and 1 risk factor without changing the prognosis. Short-term mortality risk increases significantly from clinical trial data, and validated health utility values were assigned to terminal health states. Base-case analysis was performed to determine incremental cost-effectiveness ratios (ICER) for both rifaximin strategies. Threshold analysis assessed rifaximin pricing at contemporary willingness-to-pay (WTP) levels per quality adjusted life year (QALY). Appropriate sensitivity analyses were conducted. Analysis was performed with a 1-year time horizon from societal and payer perspectives.

Results: Based on the average acquisition cost of rifaximin (USD $29.78/pill), second-line rifaximin could be cost-effective from a societal perspective (Table 1). However, at contemporary WTP thresholds neither rifaximin strategy was cost-effective from a payer perspective despite greater effectiveness than TCA alone. Depending on WTP, a 12-62% price reduction (USD $18.46-26.34/pill) would enable the first-line TCA followed by second-line rifaximin to be more cost-effective than a TCA-only strategy (Table 1). An 84-88% price reduction (USD $3.53-$4.71/pill) would enable first-line rifaximin followed by second-line TCA to be more cost-effective than TCA-only, though first-line TCA followed by second-line rifaximin would remain the more cost-effective strategy. Our model was robust in tornado analysis and most influenced by rifaximin treatment interval. Sensitivity analysis on rifaximin retreatment interval suggests that current pricing may be based on longer retreatment intervals than those found in clinical literature (Fig 1a). Sensitivity analysis with a lower TCA responder rate could enable first-line rifaximin to be the preferred strategy, albeit at a reduced price (Fig 1b).

Conclusion: Rifaximin is an effective therapy for IBS but is less cost-effective than TCA as currently priced. We propose an evidence-based pricing strategy which would maximize the cost-effectiveness of rifaximin in IBS-D patients.

Disclosure of Interest: W.D. Chey: Dr. Chey is a consultant for Ironwood Pharmaceuticals and Allergan. All other authors have declared no conflicts of interest.

Reference

P1796 HOW COST AFFECTS THE TREATMENT CHOICE FOR IRREVERSIBLE BOWEL SYNDROME WITH DIARRHEA PATIENTS: A COST-EFFECTIVENESS ANALYSIS OF TRICYCLIC AGENTS AND RIFAXIMIN
E. D. Shah, E. Andraska, J. Li, S. Zhang, W.D. Chey
Division Of Gastroenterology, University of Michigan, Ann Arbor/United States of America

Contact E-mail Address: ershah@med.umich.edu

Introduction: Drug pricing and third party payer coverage exert a profound effect on access to prescription therapies in patients with irritable bowel syndrome with diarrhea (IBS-D). We performed a cost-effectiveness analysis to assess the trade-offs associated with treating IBS-D patients with a tricyclic agent (TCA) or rifaximin.

Aims & Methods: We constructed a decision analytic model evaluating three treatment strategies for IBS-D in the United States healthcare system: first-line therapy with TCA-only, first-line rifaximin followed by second-line TCA for nonresponders, and first-line TCA followed by second-line rifaximin for nonresponders. This model accounted for direct and indirect costs of therapy (Medicaid NADAC database and Healthcare Blue Book) and work-productivity loss (published literature and US Bureau of Labor) with a 3% per annum discount rate. Rifaximin was administered in 4-month treatment cycles based on published clinical experience. Responder and discontinuation rates were derived from clinical trial data, and validated health utility values were assigned to variable Surgery group (N = 18) Conservative group (N = 27) P value
Age(year) 66 67 .688
Sex(M/F) 10/8 14/13 .807
Purpose of colonoscopy
Therapeutic 9 27
Diagnostic 9 0 .000
Location of perforation
Rectum 2 6
Sigmoid 14 7
Descending 0 1
Transverse 2 3
Ascending 0 10
Endoscopic clipping .007
Yes 8 23
No 10 4

Results: Diagnostic cases in purpose, sigmoid colon in location and non-clipping purposes. Although the incidence is very low, perforation is one of the most serious complications. It is important to decide whether to try endoscopic clipping or to perform prompt surgical management.

Aims & Methods: We retrospectively reviewed charts of all patients who experienced colonoscopy-associated perforation in a single center between May 2009 and July 2015, and totally 45 patients were enrolled.

Table: The risk factors surgical treatment in colonoscopy-associated perforation

variable Surgery group (N = 18) Conservative group (N = 27) P value
Age(year) 66 67 .688
Sex(M/F) 10/8 14/13 .807
Purpose of colonoscopy
Therapeutic 9 27
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Location of perforation
Rectum 2 6
Sigmoid 14 7
Descending 0 1
Transverse 2 3
Ascending 0 10
Endoscopic clipping .007
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FUNCTIONAL GASTROINTESTINAL DISORDERS

Introduction:
Despite diagnostic criteria and effective management options for functional gastrointestinal disorders (FGID), confidence in managing these disorders in primary care is low, and long waiting lists for specialist care are common. New models which efficiently transfer specialist-held expertise to primary care practitioners is needed.

Aims & Methods:
We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm-based approach to the diagnosis and management of FGID (ADAM-FGID). Consecutive patients triaged to the ‘routine waitlist’ of an Australian public hospital Gastroenterology Department over 2 years, with non-specific gastrointestinal symptoms (no alarms) were randomised to waitlist control or the algorithm group (n = 43). Patients were phenotyped using FGID symptom criteria and a validated stool questionnaire. All others were classified using Rome III criteria and received a letter explaining their FGID diagnosis and dietary/psychological management options. Patients with alarm signs were triaged to a specialist consultation. All others were sent a depersonalised letter outlining the intervention and a research survey.

Conclusion:
In colonscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, especially when endoscopic clipping decreases the possibility of operation and shows better clinical outcomes.

Disclosure of Interest:
All authors have declared no conflicts of interest.

P1798 PATIENTS’ AND CLINICIANS’ VIEWS OF AND EXPERIENCE WITH A NOVEL CLINICAL PATHWAY FOR FUNCTIONAL GASTROINTESTINAL DISORDERS

E. C. Linedale1, A. Mikodas-Walas2, P.R. Gibson2, J. M. Andrews3
1Department Of Medicine, The University of Adelaide, Adelaide/Australia/SA
2Gastroenterology, Monash University, Melbourne/Australia/VIC

Contact E-mail Address: ecshuba.linedale@adelaide.edu.au

Introduction: Despite diagnostic criteria and effective management options for functional gastrointestinal disorders (FGID), confidence in managing these disorders in primary care is low, and long waiting lists for specialist care are common. New models which efficiently transfer specialist-held expertise to primary care practitioners is needed.

Aims & Methods: We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm-based approach to the diagnosis and management of FGID (ADAM-FGID). Consecutive patients triaged to the ‘routine waitlist’ of an Australian public hospital Gastroenterology Department over 2 years, with non-specific gastrointestinal symptoms (no alarms) were randomised to waitlist control or the algorithm group (n = 43). Patients were phenotyped using FGID symptom criteria and a validated stool questionnaire. All others were classified using Rome III criteria and received a letter explaining their FGID diagnosis and dietary/psychological management options. Patients with alarm signs were triaged to a specialist consultation. All others were sent a depersonalised letter outlining the intervention and a research survey.

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In colonscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, especially when endoscopic clipping decreases the possibility of operation and shows better clinical outcomes.

Disclosure of Interest:
All authors have declared no conflicts of interest.

P1799 ANNUAL FECAL IMMUNOLOGICAL TESTING IS LESS COSTLY THAN COLONOSCOPY EVERY 5 YEARS AND REDUCES MORTALITY IN FAMILIAL COLONRECTAL CANCER SCREENING


1Servicio De Aparato Digestivo, Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain
2Departamento de Ingeniería Informática y de Sistemas, Universidad de La Laguna. Health Services Research on Chronic Patients Network (REDISSECC)
3Hospital del Mar - Parc de Salut Mar, Barcelona/Spain
4Department of Medicine - Gastroenterology, University of Zaragoza, Zaragoza/Spain
5Hospital Clinic Barcelona, Barcelona/Spain
6Hospital Puerta de Hierro, Madrid/Spain
7Hospital del Mar - Parc de Salut Mar, Barcelona/Spain
8Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain
9Hospital Universitario de Donostia, Donostia/Spain
10Servicio De Aparato Digestivo, Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain
11Gastroenterology, Hospital Clinic Barcelona, Barcelona/Spain
12Servicio De Aparato Digestivo, Hospital Universitario de Donostia, Donostia/Spain
13Depart. Medecine & Gastroenterology, University of Zaragoza University Hospital Dept. of Medicine-Gastroenterology, Zaragoza/Spain
14Servicio De Aparato Digestivo, Hospital Puerta de Hierro, Madrid/Spain
15Servicio De Aparato Digestivo, Hospital del Mar - Parc de Salut Mar, Barcelona/Spain
16Hospital Universitario Central de Asturias, Oviedo/Spain
17Hospital Universitario Donostia, Donostia/Spain
18Servicio De Oncología Médica, Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain
19Gastroenterology, Hospital Clinic Barcelona, Barcelona/Spain
20Servicio De Aparato Digestivo, Hospital Donostia, Donostia/Spain
21Dept. of Medicine & Gastroenterology, University of Zaragoza University Hospital
22Complexo Hospitalario Universitario de Ourense, Ourense/Spain
23Complexo Hospitalario Universitario de Ourense, Ourense/Spain
24Hospital Clinic Barcelona, Barcelona/Spain
25Servicio De Aparato Digestivo, Hospital Clínico Universitario de Ourense, Ourense/Spain
26Servicio De Aparato Digestivo, Hospital del Mar - Parc de Salut Mar, Barcelona/Spain
27Servicio De Aparato Digestivo, Hospital Universitario Central de Asturias, Oviedo/Spain
28Hospital Universitario Donostia, Donostia/Spain
29Servicio De Oncología Médica, Hospital Universitario de Canarias, Santa Cruz de Tenerife/Spain

Contact E-mail Address: dnicolas@telefonica.net

Introduction: Colonoscopy every 5 years, starting at the age of 40 years, is considered the first-choice screening strategy in first-degree relatives (FDR) of patients with colorectal cancer CRC, as these individuals are considered at higher risk of developing CRC than average-risk individuals. However, this practice has a low adherence and remains opportunistic. Recently, it has been suggested that annual fecal immunochromatographic testing (FIT) might be a valid alternative to colonoscopy in this setting. However, there are scarce data regarding cost-effectiveness of these strategies from the perspective of healthcare services.

Aims & Methods: This study was aimed to compare the cost-effectiveness of annual FIT and colonoscopy every 5 years, to reduce CRC mortality, in FDR of patients with CRC. A Markov model was constructed to simulate the efficacy and cost of annual FIT (cut-off 10 µg Hb/g feces) or colonoscopy every 5 years of

Table 1: Comparative cost-effectiveness of treatment approaches with and without rifaximin in irritable bowel syndrome with diarrhea (IBS-D)

<table>
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<th>Strategy</th>
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<th>Incremental effectiveness (QALY)</th>
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<td>Rifaximin as first-line for IBS-D</td>
<td>$7,608</td>
<td>0.020</td>
<td>+$4,253</td>
<td>0.00029</td>
<td>$782,375</td>
</tr>
<tr>
<td>Rifaximin as second-line for IBS-D</td>
<td>$4,783</td>
<td>0.022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Payer perspective</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCA only</td>
<td>$728</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rifaximin as first-line for IBS-D</td>
<td>$4,177</td>
<td>0.020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rifaximin as second-line for IBS-D</td>
<td>$4,894</td>
<td>0.022</td>
<td>+$3,717</td>
<td>0.00029</td>
<td>$1,207,136 (dominated)</td>
</tr>
</tbody>
</table>

1First-line rifaximin strategy was dominated (less effective and more expensive) than a second-line rifaximin strategy at all price points. ICER = incremental cost effectiveness ratio; QALY = quality adjusted life year; TCA = tricyclic antidepressant; IBS-D = irritable bowel syndrome with diarrhea; USD = US dollar.
previously unscreened FDR, starting at age 40 years and ending at age 75. A 5-year assumption for each strategy was assumed. The model was adjusted to the incidence of CRC in Spain and real prevalence of advanced adenoma and CRC in the familial-risk population (https://dx.doi.org/10.1371/journal.pmed.1002008.g001). The main outcomes were quality-life-year (QALY) gained comparing current, lifelong burden of colonoscopy, lifetime number of colonoscopy complications, and the incremental cost-effectiveness ratio (ICER). We applied a willingness-to-pay threshold of €25,000 per QALY gained. Data from a prospective EuroQol survey carried out on 920 Spanish patients at different disease stages were used for QALY measurement. Sensitivity analysis was performed to evaluate the robustness of the model.

Results: In a hypothetical cohort of 10,000 asymptomatic FDR, annual FIT and colonoscopy every 5 years were cost-effective over no screening. Taking no screening as the reference, FIT for annual CRC screening and colonoscopy every 5 years was 1989 and 4472 euros QALY, respectively. Compared to no screening, annual FIT and colonoscopy every 5 years reduced CRC mortality by 59% and 81%, respectively. The annual FIT strategy saved 33% of colonoscopies and was associated with a lower number of complications compared to colonoscopy every 5 years. The results were robust in sensitivity analyses.

Conclusion: Assuming a 50% adherence, annual FIT is less costly than colonoscopy every 5 years for CRC screening and reduces mortality in the familial-risk population. These data suggest that FDR of patients with CRC could be included in organized nationwide FIT-based screening programs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1801 COMBINATION OF FOBT AND Fecal CALPROTECTIN MAY BE USEFUL FOR REDUCING UNNECESSARY COLORECTAL SCREENING TESTS

C. Sostres1, A. Lue1, M.V. Barra Pardos2, G. Hijos3, A. Perales3, J.J. Puente2, A. Lanas1, F. Gomollon4

1Biosanitary Research Institute Aragón (IS Aragón), Zaragoza/Spain
2Hospital Clínico Universidad Lozano Blesa, Zaragoza/Spain
3Medicine, Gastroenterology, University Hospital, Zaragoza/Spain
4Gastroenterology, Hospital Clínico Universidad Lozano Blesa, IS Aragón and CIBEREhd, Zaragoza/Spain

Contact E-mail Address: carlos.sostres@gmail.com

Introduction: Faecal occult blood test (FOBT) is a non-invasive and easily performed test which has demonstrated to reduce CRC incidence and mortality in the populations. Faecal calprotectin (FCP) has good evidence for detecting precancerous lesions for colorectal cancer screening.

Aims & Methods: To evaluate and compare the diagnostic accuracy of the combination of FOBT plus FCP versus each test alone in symptomatic patients referred for diagnostic colonoscopy. A total of 171 patients who completed colonoscopic investigations and returned stool samples were prospectively recruited and included in the final analysis. FOBT was performed by SENTi FIT 270 test (Sentinel Diagnostics, Milan, Italy) and FCP by the EliA Calprotectin immunoassay (Sentinel Diagnostics, Milan, Italy) and FCP by the EliA Calprotectin immunoassay (Sentinel Diagnostics, Milan, Italy). The main endpoints for the ROC curve analysis were:

Results: 171 patients (42.7% female; median age 62 years, IQR: 51–68) were included. 37 (21.6%) had relevant colonic pathology. The most frequent indications for colonoscopy were previous episode of rectal bleeding in 71 (42%) patients, change of bowel habits in 28 (16%) and anaemia in 22 (13%). Diagnostic accuracy of FOBT, FCP and combination of both are summarized in table 1.

AuROC curves for relevant colonic pathology were 0.777 (95% CI: 0.708–0.837; P < 0.0001) for FOBT, 0.692 (95% CI: 0.617–0.760; P = 0.005) for FCP and 0.748 (95% CI: 0.685–0.810; P < 0.0001) for combination of both tests respectively. Combination of both tests have a significant better diagnostic accuracy compared to either test alone (P = 0.043 vs FOBT and P = 0.002 vs FCP) with a higher NPV. No significant difference was observed between FOBT and FCP (P = 0.243).

Conclusion: Our model based on combination of FOBT and FCP has a better diagnostic accuracy performance compared to each test alone for the detection of relevant colonic pathology. Because of high NPV, performing FOBT and FCP in symptomatic patients before colonoscopy could be a feasible strategy in order to avoid unnecessary procedures.

Disclosure of Interest: A. Lanas: Angel Lanas is advisor to Sysmex Spain All other authors have declared no conflicts of interest.

P1801 CLINICAL PRACTICE, MONITORING, AND PATIENT SAFETY DURING PROCEDURAL SEDATION IN FIVE COUNTRIES

R. Saunders1, J. Davis1, R. Weissbrod2, P. Krane3, J. R. Lightdale4, R. Whitaker5

1Health Economics, Coreva Scientific, Freiburg/Germany
2Medtronic, Jerusalem/Israel
3University of Würzburg, Würzburg/Germany
4University of Massachusetts, Worcester/United States of America
5Manchester Royal Infirmary, Manchester/United Kingdom

Contact E-mail Address: jason@coreva-scientific.com

Introduction: Procedural sedation is considered an integral part of gastrointestinal endoscopy in many countries. The use of sedation does, however, vary internationally and can present patient safety concerns. It has been questioned whether trials assessing patient safety in endoscopy can be generalized worldwide and whether comparisons in sedation and adverse events across countries are valid.

Aims & Methods: We conducted an international survey to examine procedural sedation practices and the incidence of adverse events (AEs) during procedural sedation in France, Germany, Italy, UK, and USA. Data collection from providers (nurses, physicians, and anesthesiologists) was via online surveys. Respondents were screened to assure that they had the expertise and experience to complete the survey. The survey covered topics such as guidelines, sedation agents, monitoring, patient throughput, and AE incidence, treatment, and outcomes as defined by World SIVA. Data analysis took a global approach by subgroup analysis by location.

Results: 101 providers completed the survey, with 20 responses per country, excepting the USA with 21. More than 62% of responders were gastroenterologists and anesthesiologists. The main sedation agents employed were midazolam (93 responders), propofol (90), fentanyl (75), ketamine (57), and meperidine (15). Respondents from France reported higher ketamine and lower fentanyl use than other countries (p < 0.03). Standard of care monitoring was generally reported to be comprised of pulse oximetry plus blood pressure and/or heart rate. Capnography use varied by country, and was standard of care for 46% of responders (ranging from 15% in Italy to 67% in the US). The most desired property of a monitoring modality across all countries was one that “provides an early warning of patient compromise”.

“Data displays and alarms relating to clinical events” was ranked second globally and in all countries apart from Italy. All respondents reported experience with patient safety issues in the last year, with hypotension the most common (67), followed by mild desaturation (63), bradycardia (63) and prolonged desaturation (52). AE incidence was influenced by monitoring modalities used. Among German responders, for example, 7 of 11 who did not use capnography as standard of care reported severe oxygen desaturation events versus 0 of 9 who routinely use it (p = 0.005). Providers also differed in their reported adverse event incidence. Gastroenterologists most commonly reported mild oxygen desaturation to occur, while anaesthesiologists and nurses reported hypotension to be the most common AE experienced during procedural sedation (Table).

Conclusion: Clinical sedation practices are relatively consistent across countries, as are the occurrence of adverse events. Pulse oximetry monitoring is almost universally used during sedation, while capnography use is more variable. The reported severe oxygen desaturation events compared to other countries for the ROC curve analysis.

Disclosure of Interest: R. Saunders: Rhodri Saunders is the owner of Coreva Scientific GmbH & Co KG, which has received consultancy fees from Medtronic Inc and Covidien AB. R. Weissbrod: Rachel Weissbrod is an employee of Medtronic Inc. P. Krane: Peter Krane has advised for multiple pharmaceutical and medical device companies. He did not receive any remuneration for work performed on this research project.
Aims & Methods: We analyzed database records for 40,644 participants aged 55 to 64 years, who between 2014 and 2015, underwent screening colonoscopy in 24 centers of population-based PCSP. We used the ESGE guideline definitions to calculate values of all seven key performance measures. We compared key performance measures within the PCSP against proposed standards on the program and center level. Data on adequacy of bowel preparation was routinely assessed with the Boston Bowel Preparation Scale, whereas data on patient experience with the validated GastroQnet questionnaire (2). Data on complication rates were collected from the National Health Fund database and Personal Identification Number Registry.

Results: Overall, on the program level, all minimum standards for colonoscopy key performance measures were met. Rate of adequate bowel preparation was 92.1% for the whole program, ranging 80.9–99.2% per individual center, with 7 centers (29.2%) not reaching minimum standard of 90% and 9 centers (37.5%) reaching the target standard of 95%. Cecal intubation rate was 97.4% (range 93.4–99.4%), with all centers reaching minimum standard of 90% and only one center not reaching target standard of 95%. Adenoma detection rate was 29.9% (range 19.1–39.1%), with 7 centers (29.2%) not reaching minimum standard of 25%. Appropriate polypectomy technique was applied in case of 90.9% 6 to 9 mm polyps (range 64.3–100%) with only 2 centers not reaching minimum standard of 80% and 48.2% of 4 to 5 mm polyps (range 0–100%) with only 6 centers reaching minimum standard of 80%. Target standard of 90% was reached in 15 centers for polyps 6 to 9 mm in diameter and only 2 centers for polyps 4 to 5 mm in diameter. For the whole program, 7-day hospitalization rate after screening colonoscopy was 0.3% (122 cases) and 30-day all-cause mortality rate was 0.02% (9 cases). Gastroen questionnaire coverage is assumed to be 100%, however the response rate was 65.3% (range 7.6%–81.8%), with painful colonoscopy rate of 19.2%. No minimum standard is set, however target standard of 90% of procedures with measured patient’s experience was not met. Appropriate post-polypectomy surveillance, based on the European guidelines, was proposed in 95.4% of cases (range 84.9–99.7%). Target standard of 95% was met in 15 centers, the minimum standard is not set.

Conclusion: Monitoring ESGE performance measures for colonoscopy is feasible in colonoscopy programmatic screening setting. 6 of 7 performance measures were easy to monitor with PCSP database, however monitoring complications needs further development to avoid extracting data from external registries. PCPS meets proposed minimum standards on program level, however some centers need additional interventions to meet the quality standards. Applying appropriate polypectomy technique for polyps ranging from 4 to 5 mm in diameter

**Abstract No: P1801**

**Table: Most commonly reported adverse events by provider**

<table>
<thead>
<tr>
<th>Rank (Least Frequent)</th>
<th>Anaesthesiologist</th>
<th>Sedation Nurse</th>
<th>Gastroenterologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Seizure</td>
<td>Seizure</td>
<td>Seizure</td>
</tr>
<tr>
<td>13</td>
<td>Cardiovascular collapse</td>
<td>Cardiovascular collapse</td>
<td>Seizure</td>
</tr>
<tr>
<td>12</td>
<td>Severe desaturation</td>
<td>Severe desaturation</td>
<td>Prolonged apnoea</td>
</tr>
<tr>
<td>11</td>
<td>Allergy</td>
<td>Allergy</td>
<td>Prolonged apnoea</td>
</tr>
<tr>
<td>10</td>
<td>Failed sedation</td>
<td>Failed sedation</td>
<td>Apnoea (short)</td>
</tr>
<tr>
<td>9</td>
<td>Hypertension</td>
<td>Hypertension</td>
<td>Apnoea (short)</td>
</tr>
<tr>
<td>8</td>
<td>Prolonged apnoea</td>
<td>Prolonged apnoea</td>
<td>Hypertension</td>
</tr>
<tr>
<td>7</td>
<td>Airway obstruction</td>
<td>Apnoea (short)</td>
<td>Severe desaturation</td>
</tr>
<tr>
<td>6</td>
<td>Mild desaturation (prolonged)</td>
<td>Mild desaturation (prolonged)</td>
<td>Hypertension</td>
</tr>
<tr>
<td>5</td>
<td>Apnoea (short)</td>
<td>Apnoea (short)</td>
<td>Severe desaturation</td>
</tr>
<tr>
<td>4</td>
<td>Hypertension</td>
<td>Hypertension</td>
<td>Severe desaturation</td>
</tr>
<tr>
<td>3</td>
<td>Mild desaturation (short)</td>
<td>Mild desaturation (short)</td>
<td>Hypertension</td>
</tr>
<tr>
<td>2</td>
<td>Tachycardia</td>
<td>Tachycardia</td>
<td>Tachycardia</td>
</tr>
<tr>
<td>1</td>
<td>Hypotension</td>
<td>Hypotension</td>
<td>Mild desaturation (short)</td>
</tr>
</tbody>
</table>

**P1802 PERFORMANCE OF THE MOTUS PURE-VU SYSTEM - A NOVEL DEVICE FOR ACHIEVING ADEQUATE BOWEL PREP IN POORLY PREPARED PATIENTS**

P.D. Siersma, K. Van Keulen, H. Neumann, M.C.W. Spaander

1Gastroenterology & Hepatology, University Medical Center Gastroenterology & Hepatology - Gastroenterology & Hepatology, University, Nijmegen/Netherlands
2Interventional Endoscopy Center, J. Medicinische Klinik Und Poliklinik, Universität Erlangen-Nürnberg, Mainz/Germany
3Gastroenterology & Hepatology, Erasmus Medical Center Rotterdam, Rotterdam/Netherlands

**Contact E-Mail Address:** kelly.vankeulen@radboudumc.nl

**Introduction:** The success of colonoscopy depends on the quality of the bowel preparation, which is estimated to occur in as many as 25% of colonoscopy procedures. The MOTUS GI Pure-Vu™ System (Tirat Carmel, Israel) is an FDA cleared device designed to improve visualization in an inadequately prepared colon. It is a novel device that facilitates video-enhanced cleaning. This study aims to evaluate the performance of the Pure-Vu System in cleansing a poorly prepared colon, assess the system’s usability, patient satisfaction and safety. Forty-seven cases were planned to be enrolled at three clinical sites, of which 32 had completed the study so far. Pure-Vu was used in subjects with an adequate cleansing level (BBPS > 2 for all 3 colon segments) from 25%; CI 95% [11%, 43%] at baseline to 100%; CI 95% [89%, 100%] after Pure-Vu use and the cecum was reached and visualized in all study cases (i.e., 100%; CI 95% [89%, 100%]). Mean post-treatment BBPS score was 8.5 (range 3.2–8.8 vs. 0.8 vs. 3.2–3.2) prior to Pure-Vu use. Physicians were satisfied with the device’s general use and ease of use and found it in most cases acceptable to good or excellent to insert and to angleate the colonscope. No major difficulties were experienced when performing polypectomy. Thirty of 32 (94%) patients reported that they would recommend Pure-Vu to their friends and family members who need a colonoscopy. Thirty (94%) of the patients found the overall bowel preparation as very tolerable (55%) or acceptable (39%). Seven patients (21%) had a previous colonoscopy procedure reported that the Pure-Vu bowel preparation was more tolerable as compared to their previous colonoscopy preparation and 14% of the patients reported it to be about the same.

**Conclusion:** Patient satisfaction and safety. Forty-seven cases were planned to be enrolled at three clinical sites, of which 32 had completed the study so far. Pure-Vu was used in subjects with an inadequate prepared colon which may help to improve the overall quality of colonoscopy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


**P1803 THE EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY KEY PERFORMANCE MEASURES FOR COLONOSCOPY IN THE POLISH COLORECTAL CANCER SCREENING PROGRAM**

M. Bugajski, P. Wieszczyn, R. Jurczak, M. Kaminski

1Department Of Gastroenterological Oncology, The Maria Sklodowska-Curie Memorial Cancer Centre and Institute of Oncology, Warsaw, Poland, Warsaw/Poland
2Department Of Gastroenterology, Hepatology And Oncology, Medical Center for Postgraduate Education, Warsaw, Poland, Warsaw/Poland

**Contact E-Mail Address:** marek.bugajski@gmail.com

**Introduction:** Recently, the European Society of Gastrointestinal Endoscopy (ESGE) published guidelines on key performance measures for colonoscopy (1). We analyzed feasibility of monitoring these measures and whether the proposed standards were met in the Polish Colonoscopy Screening Program (PCSP).

**Aims & Methods:** We analyzed database records for 40,644 participants aged 55 to 64 years, who between 2014 and 2015, underwent screening colonoscopy in 24 centers of population-based PCSP. We used the ESGE guideline definitions to calculate values of all seven key performance measures. We compared key performance measures within the PCSP against proposed standards on the program and center level. Data on adequacy of bowel preparation was routinely assessed with the Boston Bowel Preparation Scale, whereas data on patient experience with the validated GastroQnet questionnaire (2). Data on complication rates were collected from the National Health Fund database and Personal Identification Number Registry.

**Results:** Overall, on the program level, all minimum standards for colonoscopy key performance measures were met. Rate of adequate bowel preparation was 92.1% for the whole program, ranging 80.9–99.2% per individual center, with 7 centers (29.2%) not reaching minimum standard of 90% and 9 centers (37.5%) reaching the target standard of 95%. Cecal intubation rate was 97.4% (range 93.4–99.4%), with all centers reaching minimum standard of 90% and only one center not reaching target standard of 95%. Adenoma detection rate was 29.9% (range 19.1–39.1%), with 7 centers (29.2%) not reaching minimum standard of 25%. Appropriate polypectomy technique was applied in case of 90.9% 6 to 9 mm polyps (range 64.3–100%) with only 2 centers not reaching minimum standard of 80% and 48.2% of 4 to 5 mm polyps (range 0–100%) with only 6 centers reaching minimum standard of 80%. Target standard of 90% was reached in 15 centers for polyps 6 to 9 mm in diameter and only 2 centers for polyps 4 to 5 mm in diameter. For the whole program, 7-day hospitalization rate after screening colonoscopy was 0.3% (122 cases) and 30-day all-cause mortality rate was 0.02% (9 cases). GastroQnet questionnaire coverage is assumed to be 100%, however the response rate was 65.3% (range 7.6%–81.8%), with painful colonoscopy rate of 19.2%. No minimum standard is set, however target standard of 90% of procedures with measured patient’s experience was not met. Appropriate post-polypectomy surveillance, based on the European guidelines, was proposed in 95.4% of cases (range 84.9–99.7%). Target standard of 95% was met in 15 centers, the minimum standard is not set.

**Conclusion:** Monitoring ESGE performance measures for colonoscopy is feasible in colonoscopy programmatic screening setting. 6 of 7 performance measures were easy to monitor with PCSP database, however monitoring complications needs further development to avoid extracting data from external registries. PCPS meets proposed minimum standards on program level, however some centers need additional interventions to meet the quality standards. Applying appropriate polypectomy technique for polyps ranging from 4 to 5 mm in diameter

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

is currently the biggest issue in PCSP and further training is needed to reach minimum standards for this performance.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1805 VALIDATION OF THE “FAILURE TO PROVIDE ADEQUATE RELIEF” (F-PAR) SCALE IN A SPECIALIST CLINIC SETTING
V. Passananti, N. Zarate Lopez, A. V. Emmanuel
GI Physiology Unit, University College London Hospital, London/United Kingdom

Contact E-mail Address: valentinapassananti@gmail.com

Introduction: Treatment of chronic idiopathic constipation is somewhat empiric, but based on step-wise approach[1]. If first-line conservative treatment (lifestyle advice and laxatives) do not relieve symptoms sufficiently, secondary approaches with prokinetic or secretagogue drugs are used before considering hospital-based care (biofeedback, psychosocial support, transanal irritation (TAI), surgery). Nevertheless, patients are often dissatisfied with care[2] and fail to progress to adequate levels of therapy. The 5-point Failure to Provide Adequate Relief (F-PAR) scale[3] was developed to facilitate the recognition of when to move from one step to the next.

Aims & Methods: The aim of this study was to validate F-PAR in a tertiary clinical setting. We studied 403 consecutive consultations of 331 patients (262 women, mean age 41) in our specialist clinic. All fulfilled Rome III/IV diagnostic criteria for chronic constipation. Immediately prior to each face-to-face clinical assessment by one of 2 experienced physicians, participants completed the F-PAR scale; patients were seen blind to the F-PAR result. Standard clinic assessment was undertaken to identify efficacy of the current management as the gold standard.

Results: Of the 403 consultations, clinical assessment identified inadequate relief with current therapy was identified in 200. Neither duration nor type of treatment were correlated with relief. The table stratifies, by clinical gold standard, each item of the F-PAR and in the lower panel the total number of F-PAR items replied to positively.

<table>
<thead>
<tr>
<th>Item</th>
<th>Adequate relief (Clinical) n=203</th>
<th>Inadequate relief (Clinical) n=200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowel frequency inadequate</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Strain most occasions</td>
<td>6</td>
<td>89</td>
</tr>
<tr>
<td>Stool hardness</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Onset other symptom</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Current therapy poor tolerable</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>0 FPAR replies</td>
<td>187</td>
<td>1</td>
</tr>
<tr>
<td>1 FPAR replies</td>
<td>10</td>
<td>41</td>
</tr>
<tr>
<td>2 FPAR replies</td>
<td>4</td>
<td>67</td>
</tr>
<tr>
<td>3 FPAR replies</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>4 FPAR replies</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>5 FPAR replies</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Conclusion: Our findings showed that the F-PAR with only five questions can be considered sufficient to provide clinical evidence of treatment failure. The use of standardized process to investigate the efficacy of treatment may reduce the time and improve the quality of managing for the chronic constipation patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1806 ADHERENCE WITH TRANSDUAL IRRIGATION USING THE NAVINA™ SYSTEM IS ASSOCIATED WITH PERSONALITY TRAITS EVEN WHEN THERE IS IMPAIRED HAND FUNCTION
V. Passananti, J. Storrie, N. Zarate Lopez, A. V. Emmanuel
GI Physiology Unit, University College London Hospital, London/United Kingdom

Contact E-mail Address: valentinapassananti@gmail.com

Introduction: Transanal irrigation has become a key therapeutic modality in managing patients with neurological diseases who experience constipation and/or fecal incontinence. Such neurogenic bowel dysfunction (NBD) complicates over three quarters of patients with spinal cord injury (SCI) and multiple sclerosis (MS). Approximately 60% of patients who start TAI continue with long-term treatment. A common cause of treatment cessation is impaired hand function [1]. Training of the patient is a key aspect of TAI therapy and requires patients to be willing to manage their health themselves: self-efficacy.

Aims & Methods: We wished to study whether use of a novel TAI system, Navina™ Smart, which has an electronic pump component allows patients with impaired levels of hand function, to initiate irrigation to adhere to TAI therapy. We also wished to identify if there were physiological or psychological correlates of adherence. Twenty-eight constant patients (19 SCI and 9 MS; 17 male, mean age 42) were studied. All patients scored greater than 18 on the Cochin Hand Function questionnaire and were completed to assess anxiety/depression and locus of control respectively. Anorectal physiology (manometry, sensation and rectal compliance) was undertaken at baseline. Training in TAI was undertaken by the same experienced nurse, with weekly follow up until a stable regime was established. Adherence with therapy at 12 weeks was identified.

Results: At 12 weeks, 16/28 (57%) of patients were still using Navina TAI, similar proportions with SCI (11/19) and MS (5/9). There was no difference in baseline scores for HAD-anxiety (6.3±4.9 vs 5.9±2.9; p=0.37) and HAD-depression (8.6±3.9 vs 8.8±4.2; p=0.46) and were similar in both those who were and who were not still using TAI (mean± SD respectively). The Rotter score for non-adherers was significantly greater than adherers (14.2±6.7 vs 10.6±5.9 respectively; p=0.008). There was no difference in any of the anorectal parameters between those who did or did not adhere with TAI.

Conclusion: Navina Smart TAI is an effective therapy in 57% of NBD patients with significant hand dysfunction. Anorectal physiology, anxiety and depression scores do not predict likelihood of treatment adherence. An external locus of control, reflecting a belief that health events occur because of outside forces (such as fate, chance, or powerful others), is associated with reduced treatment success. The results suggest that future studies of TAI should consider locus of control as an important potential predictor of outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Emmanuel et al. 2016;23:1167–72

WEDNESDAY, NOVEMBER 01, 201709:00-14:00

P1807 THE DUODENAL MUCOSA RETAINS A DIVERSE MICROBIOTA FOLLOWING BOWEL PREPARATION
E. Shanahan1, A. Shah1, A. Do2, P. Ghassemi1, T. Hansen1, N. Koloski1, M. Morrison1, G. Holtmann1
1Gastroenterology And Hepatology, Princess Alexander Hospital, Brisbane/ Australia
2Faculty Of Medicine, University of Queensland Translational Research Institute, Brisbane/Australia/QLD
3University Of Queensland, Diamantina Institute, Microbial Biology and Metagenomics, Brisbane/Australia

Contact E-mail Address: e.shanahan@uq.edu.au

Introduction: The microbiota inhabiting the gastrointestinal (GI) tract plays an essential role in gut health. Although mucosal biopsies are increasingly used for microbiota studies, these are subject to variations introduced through sampling technique and patient preparation. The impact of bowel preparation on the microbiotaassociated microbiota (MAM) is of particular interest given it results in complete emptying of bowel contents via laxative ingestion. Although bowel preparation does not appear to induce long term changes to stool microbiota [1], it can induce short-term changes to the colonic MAM [2]. While improvements in clearing of the small intestine after bowel preparation have been reported [3], the impact on the upper GI microbiota is currently unknown. Given patients may undergo both upper GI endoscopy and colonoscopy consecutively, a subset of endoscopy patients will have consumed bowel preparation prior to their procedure, representing a potential bias in MAM analyses. Therefore, this study aimed to assess the impact of bowel preparation on the duodenal MAM.

Aims & Methods: Individuals undergoing upper GI endoscopy, with or without concurrent colonoscopy, were recruited consecutively with ethical approval. Individuals who underwent upper GI endoscopy following overnight fast (n = 58), or with diagnosed Crohn's disease (n = 18). Duodenal biopsies were obtained and gDNA extracted. Amplicon libraries of the 16s rRNA gene were sequenced (Illumina MiSeq). Sequencing of reant controls enabled exclusion of
non-duodenal sequences. Bioinformatics and statistics were performed in QIIME and Calfyso.

**Results:** A diverse microbiota was observed in duodenal mucosal samples from all subjects, following overnight fasting or bowel preparation. Overall the duodenal microbiota was dominated by the genus Streptococcus, followed by Prevotella, Veillonella and Neisseria. Microbial diversity within samples was not significantly different with and without bowel preparation (Chao1 metric).

**Principal coordinates analysis (weighted UniFrac)** revealed substantial overlap between the two groups, and no significant clustering was observed (ADONIS) based on whether patients had undergone overnight fasting or bowel preparation. Similar findings were obtained when these analyses were repeated with exclusion of the Cronh’s disease population.

**Conclusion:** This study reveals a diverse duodenal MAM is retained following bowel preparation. The comparison of overnight fasting and bowel preparation indicates these differences in patient preparation do not substantially alter the duodenal MAM. Thus patients undergoing concurrent upper GI endoscopy and colonoscopy can be included in study cohorts investigating the upper GI MAM without risk of a substantial confounding effect.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1808 PERFORMANCE OF GLASGOW-BLATCHFORD, ROCKALL, AND AIMS65 SCORES TO PREDICT OUTCOMES AND TO IDENTIFY THE LOW-RISK GROUP AFTER UPPER GI BLEEDING IN PATIENTS WITH CANCER**

M. C. Franco1, S. Jang2, B. D.C. Martins3, T. Stevens1, V. Jairath1, R. Lopez2, J. J. Vargo1, A. Barkun4, F. Maluf-Filho1

1Gastrointestinal Endoscopy Unity, Cancer Institute of University of Sao Paulo, Sao Paulo/Brazil
2Department Of Gastroenterology And Hepatology, Cleveland Clinic, Cleveland, United States of America
3Western University, London/Canada
4Division Of Gastroenterology, McGill University and the McGill University Health Centre, Montreal/Canada

**Contact Email Address:** mecvakantefranco@gmail.com

**Introduction:** Upper gastrointestinal bleeding (UGIB) in patients with cancer presents a unique and difficult challenge as these patients are at higher risk for rebleeding and mortality. Currently available prognostic scoring systems for UGIB for the general population have produced variable accuracy in their validation studies. An effective method of stratification for cancer patients to identify the high-risk group for early hospital-based intervention and death could enhance the outcomes of this specific population.

**Aims & Methods:** The primary aim of this study was to compare the Glasgow-Blatchford score (GBS), Rockall score (RS) and AIMS65 score for predicting ICU admission, blood transfusion, hemostatic therapy, rebleeding, and in-hospital mortality in cancer patients with UGIB. The secondary aim was to assess the above cited scores in correctly identifying low-risk patients that can be effectively managed as an outpatient. An EBAC approval prospective study was conducted at the Cancer Institute of Sao Paulo, Brazil. Consecutive patients with known cancer admitted with UGBIB were enrolled. Pre-endoscopic clinical parameters pertinent to the scoring systems, hemostasis techniques, and outcomes were collected into a prospective registry. Patients were followed for at least 30 days or until the day of discharge, whichever was longer. The low-risk group was defined as those without blood transfusion, hemostatic therapy (by endoscopy, radiotherapy, angiographic or surgical intervention), rebleeding or mortality in 30 days. Multiple logistic regression with receiver operating characteristics analysis was done to assess the predictive ability of each scoring system for the above outcomes.

**Results:** From April 2015 to May 2016, 394 consecutive patients were screened, while 259 patients met the inclusion criteria. A total of 243 patients were considered for the final analysis, after excluding 16 patients due to missing data or lost to follow up (Table 1). Predicting outcomes: The AIMS65 score (area under the curve) significantly better predicted ICU admission than GBS (AUC 0.79; p ≤ 0.04), both the total and clinical RS (AUC 0.71 and 0.66; p < 0.001 for both). The GBS best predicted the need for blood transfusion (AUC 0.82, sensitivity 71% and specificity 80% for GBS ≥ 12) compared with the other prognostic scores. All scores performed poorly in predicting the need for hemostatic therapy and risk of rebleeding. The AIMS65 score best predicted in-hospital mortality (AUC 0.84) compared to the GBS (AUC 0.75; p = 0.004), both the total and clinical RS (AUC 0.70 and 0.69; p < 0.001 for both). Among patients rebleeding at EGD, there was no difference in 30-day mortality if the etiology of bleeding was tumoral or non-tumoral disease (38.1% vs 31.9%; p = 0.46). Identifying low-risk group: With GBS score of 0 as the cut-off value, its specificity was 100% with sensitivity of 5.8%. When GBS ≥ 2, its specificity was maintained at 100%, while sensitivity was increased to 23.5%. This change increased the proportion of the patients from 1% to 5% without erroneously discharging high-risk patients. In comparison, when an AIMS65 value of 0 was chosen as definition for low-risk, this tool misclassified 20 patients who needed hospital interventions (specificity of 53% and sensitivity of 89.5%). Finally, head-to-head comparison between GBS vs. RS, and GBS vs. AIMS65 scoring system revealed GBS to be superior to both the clinical RS (p < 0.001) and AIMS65 (p = 0.001) in correctly identifying low-risk patients.

**Table 1: Demographic and Clinical Characteristics**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Total (n = 243)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60.6 ± 13.6</td>
</tr>
<tr>
<td>Female/Male</td>
<td>71 (29.2%)/172 (70.8%)</td>
</tr>
<tr>
<td>Outpatient/Inpatient</td>
<td>178 (73.3%)/65 (26.7%)</td>
</tr>
<tr>
<td>Cancer in the Upper GI Tract</td>
<td>74 (30.5%)</td>
</tr>
<tr>
<td>Cancer Stage: (1 \text{ or } 2)</td>
<td>17 (7.0%)</td>
</tr>
<tr>
<td>(3)</td>
<td>48 (19.8%)</td>
</tr>
<tr>
<td>(IV)</td>
<td>17 (7.1%)</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>8.1 ± 2.9</td>
</tr>
<tr>
<td>Albumin</td>
<td>2.8 ± 0.75</td>
</tr>
<tr>
<td>Rebleeding</td>
<td>24 (9.9%)</td>
</tr>
<tr>
<td>RBC Transfusion</td>
<td>147 (60.5%)</td>
</tr>
<tr>
<td>ICU</td>
<td>107 (44.0%)</td>
</tr>
<tr>
<td>Hemostatic Therapy</td>
<td>104 (42.8%)</td>
</tr>
<tr>
<td>30-day Mortality</td>
<td>66 (27.2%)</td>
</tr>
<tr>
<td>Follow-up time (days)</td>
<td>30.0 ± 22.00</td>
</tr>
<tr>
<td>Clinical Rockall</td>
<td>4.6 ± 1.2</td>
</tr>
<tr>
<td>Total Rockall</td>
<td>7.0 ± 2.0</td>
</tr>
<tr>
<td>AIMS65</td>
<td>1.7 ± 1.2</td>
</tr>
<tr>
<td>Glasgow-Blatchford</td>
<td>10.8 ± 4.2</td>
</tr>
</tbody>
</table>

**Conclusion:** The AIMS65 score was superior to other scoring systems in predicting in-hospital mortality and ICU admission in patients with cancer and UGIB, whereas the GBS was superior for predicting the need for blood transfusion. All scores performed poorly in prediction of hemostatic therapy and rebleeding. The GBS was superior in accurately identifying low-risk patients. Furthermore, the cut-off ≤ 2 in GBS score displays increased sensitivity without compromising specificity, effectively increasing the number of patients who can be safely managed as an outpatient.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1809 THE EFFECTS OF ANTICOAGULANTS ON THE CLINICAL OUTCOME OF ENDOCAPSULAR THERAPY**

K. Namikawa1, T. Yoshii1, H. Tomita2, T. Yamada3, J. Fujisaki4

1Gastroenterology, Cancer Institute Hospital Atricle, Tokyo/Japan
2Gastroenterology, Ehime Medical Center Hospital, Matsuyama/Japan
3Gastroenterology & Hepatology, Osaka National Hospital, Osaka/Japan
4Gastroenterology, Cancer Institute Hospital JFCR, Tokyo/Japan

**Contact Email Address:** ken.namikawa@jfcr.or.jp

**Introduction:** Endoscopists are more frequently performing endoscopic resection (ER) in patients on antplatelet or anticoagulant therapy and nowadays patients have increasingly started taking direct oral anticoagulant (DOAC) therapies, including direct anti-Xa and thrombin inhibitors. Major guidelines recommend the cessation of anticoagulants before ER and heparin bridging therapy (HBT) for high thrombotic risk cases, although these are still controversial. A recent study has suggested that HBT may be associated with a higher post-endoscopic resection bleeding (PEB) rate in patients on anticoagulants.

**Aims & Methods:** This study aimed to evaluate the effect of anticoagulants on PEB rate in patients on anticoagulants. This was a retrospective study based on medical records from three departments: PE was defined as bleeding that occurred 6 h to 10 days after ER, which required endoscopic hemostasis. We reviewed 108 gastric tumors including adenoma and early cancer in 97 patients on anticoagulant therapy who underwent endoscopic submucosal dissection (ESD) in our hospitals between June 2008 and February 2016. Further, we reviewed 69 colorectal polyps including adenoma and early cancer in 69 patients on anticoagulant therapy who underwent ER in our hospitals between October 2013 and September 2016. ER included polypectomy, endoscopic mucosal resection (EMR), and ESD. Patients were divided into two groups: those prescribed warfarin and patients prescribed DOAC. The management of antithrombotics was based on the Japanese Gastroenterological Endoscopy Society guidelines published in 2005 and 2012. The anticoagulants used during the study period were warfarin, dabigatran, rivaroxaban, apixaban, and edoxaban. Warfarin was discontinued 4-5 days before ER, whereas the others were stopped 24-48 h prior to the procedure. For patients at a high thrombotic risk, intravenous unfractionated heparin was administered after ceasing anticoagulants.

**Results:** Warfarin and DOAC were prescribed to 73 (75%) and 24 (25%) patients, respectively. Apixaban was administered to 1 (1%), dabigatran to 12 (12%), rivaroxaban to 11 (11%) patients. There were no significant differences between the DOAC and warfarin groups in terms of clinical characteristics or
P1810 ENDOSCOPIC ALLIGATION OF MUCOADHESIVE POWDER (NEXPOWDER®) FOR HEMOSTASIS IN PATIENTS WITH GASTROINTESTINAL BLEEDING

B.W. Bang1, K.S. Kwon1, H.K. Kim1, Y.W. Shin1, S.J. Hong2, J. Park1, J.J. Moon1, J.J. Hwang2

1Division Of Gastroenterology, Department Of Internal Medicine, Inha University School of Medicine, Incheon,Korea, Republic of
2Digestive Disease And Research Institute, SoonChungHyang University School of Medicine, Bucheon,Korea, Republic of

Contact E-mail Address: bangbyoung@naver.com

Introduction: Although endoscopic hemostasis is usually effective in controlling gastrointestinal (GI) hemorrhage, some have difficulty in achieving successful hemostasis depending on the location and severity of hemorrhage. NEXPOWDER® (Next Biomedical, Incheon, South Korea) is a biocompatible and biodegradable powder and the hemostatic effects are accomplished by physical barrier when this powder immediately forms mucoadhesive hydrogel after contacting blood or water. It shows high adhesiveness and persistence of gel on ulcer base. In addition, new powder delivering device was developed to reduce cather clogging during endoscopic application.

Aims & Methods: The aims of this study were to confirm 1) success rate of hemostasis using NEXPOWDER® in acute GI bleeding from post-endoscopic procedure or various causes, 2) re-bleeding rate on second-look endoscopy at 1 or 3 days after the procedure, 3) persistent rate of hydrogel on ulcer base at follow-up endoscopy, and 4) clogging rate of catheter during spraying powder. The NEXPOWDER® was delivered by newly developed spraying device through a catheter which accessed the initial hemostatic success as when the bleeding disappeared within 10 minutes. A second-look endoscopy was performed in one and three days after the procedure.

Results: A total of 57 patients were enrolled. The bleeding developed in 46 patients with post-endoscopic resection ulcers (41 ESD induced ulcers and 5 EMR induced ulcers), 8 patients with peptic ulcer and 3 patients with other origins. 1) Success rates of hemostasis in acute bleeding were 96.5% (55/57) of NEXPOWDER® group, 2) Re-bleeding rates were 5.5% (3/57) of NEXPOWDER® group, 3) Persistent rate of NEXPOWDER® on ulcer base was 70.3% (26/37) day after the procedure, and 38.5% (15/38) 3 days after the procedure. 4) Clogging rate of spraying catheter was 3.5% (2/57).

Conclusion: The endoscopic application of NEXPOWDER® is effective for the several types of acute GI bleeding. This effective hemostatic action of NEXPOWDER® might be achieved by physical barrier of mucoadhesive and persistent hydrogel on ulcer base. And new powder delivering device shows low prevalence of catheter clogging during endoscopic application.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1811 CLINICAL FEATURES OF DELAYED BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASMS IN HIGH-RISK AND LOW-RISK PATIENTS

Gastroenterology, Osaka General Medical Center, Osakajapan

Contact E-mail Address: tatkatakakkun@gmail.com

Introduction: Antithrombotic drugs are administered to patients undergoing endoscopic treatment at high risk for thromboembolism. However, antithrombotic drugs have been also known as a cause of delayed bleeding associated with endoscopic treatment, including endoscopic submucosal dissection (ESD). We previously reported the clinical features of postpolyectomy bleeding associated with heparin bridge therapy (1), and then various risk factors of delayed bleeding after endoscopic treatment have been reported.

Aims & Methods: The aims of the present study are to investigate the risk factors of delayed bleeding after gastric ESD and to clarify the clinical features of delayed bleeding in high-risk patients. High-risk patients were defined as patients who underwent ESD for gastric neoplasms in Osaka General Medical Center between January 2009 and December 2016 were retrospectively investigated. Independent risk factors of delayed bleeding were analyzed by using a multivariate analysis by logistic regression model, and three predictors of delayed bleeding were selected. Patients were categorized into a high-risk group or low-risk group for bleeding, and the clinical features of post-procedural bleeding in each group were investigated.

Results: A total of 717 patients with 781 gastric neoplasms were identified. Mean age was 74.6, and 71.6% was male. With regard to comorbidity, the proportion of hypertension, diabetes, chronic liver disease, and hemodialysis was 50.2%, 19.2%, 2.7%, and 6.1%, respectively. Total 188 patients have taken oral antithrombotic drugs, and of them, 50 patients treated by gastric ESD under heparin bridge therapy. Two-thirds lesions were located in gastric body and median tumor size (range) was 15 (3–80) mm. En-bloc resection was achieved in 751 lesions (96.5%), and no uncontrollable bleeding occurred. Forty-nine patients (6.8%) experienced delayed bleeding after gastric ESD. Hospital stay was significantly longer in bleeding cases than in non-bleeding cases [median hospital stay (range) 11 (3–20) vs. 9 (9–25), p = 0.007]. A univariate and multivariate analysis showed heparin bridge therapy, antiplatelet therapy, and hemodialysis as high-risk for bleeding, and the remainder as a low-risk group. The incidence of delayed bleeding was significantly higher in the high-risk group than in the low-risk group (14.3% vs. 3.6%, p < 0.001). Severe bleeding requiring transfusion and recurrent bleeding were more often in the high-risk group than in the low-risk group. Median onset (range) of delayed bleeding was POD1 (0–16) in high-risk group and POD6 (0–15) in high-risk group. No thromboembolism occurred in each group.

Conclusion: Delaying high-risk patients with heparin bridge therapy, antiplatelet therapy, and hemodialysis should be carefully observed after gastric ESD while early hospital discharge is acceptable for bleeding low-risk patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1812 EFFICACY AND SAFETY OF FERRIC CARBOXYMALTOSE TREATMENT IN PATIENTS HOSPITALIZED FOR ACUTE GASTROINTESTINAL BLEEDING NOT ASSOCIATED WITH PORTAL HYPERTENSION

G. Torres-Vicente1, M. Planella-De Rubínara2, R. Ballester-Clau1, L. López-Barroso3, T. Voltá-Pardo3, M. Cucala-Ramos3, J.M. Reñé-Espin1
1Hospital Universitari Arnau de Vilanova de Lleida, Lleida/Spain
2Hospital Universitari Arnau de Vilanova de Lleida. Institut de Recerca Biomédica de Lleida, Lleida/Spain
3Vifor Pharma España, Barcelona/Spain

Contact E-mail Address: gisela.tv@hotmail.com

Introduction: There are few studies of the efficacy of parenteral ferric carboxymaltose (FCM) treatment in acute gastrointestinal bleeding (GIB) of different origins. Few data are available on its use to treat anaemia post-acute haemorrhage.

Aims & Methods: To determine the efficacy and safety of FCM treatment in patients with acute GIB not associated with portal hypertension. A retrospective descriptive 3-year study of patients with acute GIB (anaemia with evident bleeding and/or hemodynamic instability) treated with FCM as part of our hospital’s habitual clinical practice.

Results: Analysis of 84 patients admitted with acute GIB (69.0% male, mean age 68.0 years [SD 6.9]), with a Charlson index ≥ 3 in 67.1% of cases (≥ 5 in 31.6%). 15.5% had previously suffered acute GIB due to peptic ulcer. There were 86 hospital admissions for acute GIB; 93.8% were upper GIB (above the angle of Treitz). The most frequent clinical presentation was melena, in 76.7% of cases. 25.6% presented hemodynamic instability at admission. The mean Glasgow-Blatchford index score was 16.1 (SD 2.7) and the mean Rockall score post-endoscopy was 4.2 (SD 1.7). The most common causes of bleeding were: 36.0% duodenal ulcer, 29% gastric ulcer, 9.3% gastritis/erosions, and 7.3% angiodyplasia of the colon. The mean Hb at admission was 9.0 g/dL (SD 2.2)
and the mean of the lowest Hb during admission was 7.6 g/dL (SD 1.3). The most common total dose of FCN administered was 1000 mg. During admission, a mean Hb increase of 0.8 g/dL (SD 2.3) was observed in a mean period of 5.7 days (median: 4.0) after treatment with FCN, with an increase of 4.2 g/dL (SD 2.6) 30 days after acute GIB. After FCN administration, the mean Hb increased significantly (p < 0.0001) in patients ≥75 years (2.1 g/dL [SD 1.7]), in patients with Charlson index ≥3 (1.9 g/dL [SD 1.6]), and when Hb level during admission was <10 g/dL (2.0 g/dL [SD 1.7]). No adverse reactions were observed.

Conclusion: In patients with acute GI bleeding the administration of ferric carboxymaltose improves Hb levels promptly and safely, especially in patients of advanced age and with associated comorbidities.

Disclosure of Interest: M. Cuca-Camos: Mercedes Cuca is employee of Vifor Pharma. J.M. Reitě-Espinet: Reitě-Espinet, Josep Maria received research grant from Vifor Pharma. All other authors have declared no conflicts of interest.

References

P1813 NOVEL EUR-GUIDED TREATMENT OF GASTRIC VARICES WITH A LIQUID NON-ADHESIVE NEUROVASCULAR EMBOLIZATION AGENT
A.J. Baptista, M.A. Guzman, H. Russ, J.F. Piñera González, E. Richards
Hospital de Clínicas Caracas, Caracas/Venezuela

Contact E-mail Address: albertorgebaptista@gmail.com

Introduction: Endoscopic Injection of adhesive agents such as N-butyl-2-Cyanocrylate (NBC) has been accepted optionally for the management of gastric varices. Recently the combination of NBC and coils has been used with endoscopic ultrasound (EUS) assistance. Nevertheless adhesive properties of the polymer may cause blockage of instrumentation material and damage to endoscopes. Since the authors, vascular wall necrosis, reblooding and distal embolism. Ethylene-vinyl alcohol (EVOH) has been extensively used in interventional radiology to treat cerebral arteriovenous malformations and has the advantage of being radioopaque.

Aims & Methods: We aimed to demonstrate a novel gastric varices embolization therapy using NBC combined with Ethylene-vinyl alcohol (EVOH) that has been also used in interventional radiology.

Results: 431 patients have been included in this study. 24.8% of patients were ≥75 years (p = 0.0001). The following differences have been observed by comparing the two groups of patients (over and below 75 years old): female 47.7% vs 25.3% (p < 0.0001); antiplatelets use 40.2% vs 20.1% (p < 0.0001); oral anticoagulants use 20.6% vs 7.7% (p < 0.001); NSAIDs use 25.2% vs 33.6% (p = 0.133); smoking 23.7% vs 35.2% (p = 0.123); alcohol consumption 17.8% vs 45.4% (p < 0.001); one or more comorbidities 77.6% vs 62% (p = 0.005); high risk endoscopic stigmata 61.7% vs 64.4% (p = 0.724); multiple ulcers 41.1% vs 31.8% (p = 0.099); need for blood transfused 39.5% vs 38% (p = 0.382); hospitalization duration 8.4 ± 6.1 vs 7.8 ± 6.0 days (p = 0.382); reblooding 10.3% vs 11.4% (p = 0.745); need for surgery 2.8% vs 4.6% (p = 0.589) and in-hospital mortality 13.1% vs 6.2% (p = 0.021). In most of the cases (88.2%), the cause of death was other than hemorrhagic shock (92.9% vs 85.0%, p = 0.484).

Conclusion: Despite this methodologic analysis, three of these factors were identified as independent factors significantly associated with the age over 75 years old: oral anticoagulants use (OR = 2.40, 95%CI:1.24–4.62, p = 0.009), antplatelet use (OR = 2.33, 95%CI:1.43–3.81, p = 0.001) and in-hospital mortality (OR = 2.09, 95%CI:1.7–4.47, p = 0.048).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1815 PREDICTIVE FACTORS FOR IN-HOSPITAL MORTALITY IN PATIENTS WITH PEPTIC ULCER BLEEDING
D. Matei1, S. Pasca1, I. Groza2, D. Negrutiu2, A. David1, M. Nedal2, M. Tantau1
1University of Medicine and Pharmacy Iuliu Hatieganu, Cluj Napoca/Romania
2Regional Institute of Gastroenterology and Hepatology Prof. Dr. Octavian Fodor, Cluj Napoca/Romania

Contact E-mail Address: dmatei68@gmail.com

Introduction: Peptic ulcers are the most frequent cause of upper gastrointestinal bleeding. In different population based surveys regarding all-cause UGIB, mortality ranges between 3% and 14%.

Aims & Methods: The aim of this study was to assess in-hospital mortality in patients with peptic ulcer bleeding and to evaluate the risk factors associated with mortality. In this descriptive study we enrolled all patients diagnosed with peptic ulcer bleeding, who were hospitalized in our hospital in a period of periods of 24 months (January 2015- December 2016). Patients were divided into two groups - those who died and those who survived - and the following parameters were compared: age, signs of hemodynamic instability (hypotension, tachycardia), presence of comorbidities, endoscopic stigmata, risk of rebleeding, need for surgery, need of transfusion or hospitalization. Hospitalization duration was higher in elderly patients due to more frequent association of comorbidities.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1816 ANAEMIA AND UPPER GI BLEEDING: A LOCAL EXPERIENCE

M. Ding, R. Prawiradilja, Z. Arastu, H. Sabri, M. Smith
Gastroenterology, Royal shrewsbury hospital, Shrewsbury/United Kingdom

Contact E-mail Address: Michaeuddjw@gmail.com

Introduction: There has been significant research recently on the use of blood transfusions in upper GI bleeding (UGIB) [1] with recent evidence advocating a restrictive approach to blood transfusions as well as the use of iron therapy[2] for anaemic patients. We aimed to conduct a local retrospective analysis of patients admitted with UGIB over a six month period and analysed the use of blood transfusions at our trust which consists of two District General Hospitals.

Patient data over a period of up to 12 months post discharge was collected to monitor their anaemia.

Aims & Methods: Our aim was to monitor the appropriateness of transfusions in Upper GI Bleeding as well as monitoring the response to iron therapy following discharge. All inpatients that had an Upper GI endoscopy for UGIB were analysed. Electronic patient records were obtained from our endoscopy software and hospital database. Patients were selected over a time period of six months from 1/6/2015 to 31/12/2015. A Student’s T-Test was used to compare the average increase in haemoglobin (Hb) for patients discharged with iron therapy against those who were not.

Results: There were 148 patients, 81 male and 67 female. The mean age was 69.3, minimum 20 and maximum 98. The average Hb on admission was 103 g/L (min = 32 g/L, max = 178 g/L) 78 out of 148 (52.7%) patients presenting with UGIB received a blood transfusion. The mean amount of blood received for those transfused was 3.7 units. 48 out of 78 (61.5%) of blood transfusions were given when Hb was below 70 g/L, 30 of 78 (38.5%) were transfused above a Hb of 70 g/L. (36.7%, n = 11) of those who were transfused with Hb above 70 had cardiac risk factors. The mortality rate in those transfused above Hb of 70 was 13.3% (n = 4) vs 10.4% (n = 5) 41.5% (n = 44) patients were anaemic post-UGIB were discharged with iron therapy. The average rise in Hb was 4.5 g/L (3.9-5.5, n = 11) of those who were transfused with Hb above 70 had cardiac risk factors. The mortality rate in those transfused above Hb of 70 was 13.3% (n = 4) vs 10.4% (n = 5) 41.5% (n = 44) patients who were anaemic post-UGIB were discharged with iron therapy. The average rise in Hb was 4.5 g/L (3.9-5.5, n = 11) of those who were transfused with Hb above 70 had cardiac risk factors. The mortality rate in those transfused above Hb of 70 was 13.3% (n = 4) vs 10.4% (n = 5) 41.5% (n = 44) patients who were anaemic post-UGIB were discharged with iron therapy. The average rise in Hb was 4.5 g/L (3.9-5.5, n = 11) of those who were transfused with Hb above 70 had cardiac risk factors.

Conclusion: The data obtained supports a restrictive transfusion policy (mortality rate of 13.3% vs 10.4%). 58.5% of patients who were anaemic on discharge did not receive any iron therapy. On follow up, there was a statistically significant rise in haemoglobin in the group discharged on iron vs those who did not. There was a statistically significant rise in Hb for those discharged with iron therapy (p < 0.005) on follow-up versus those who did not receive it (n = 62). The anaemia related readmission rates were similar for patients discharged on iron or not (9.1% n = 4 vs 9.7% n = 6).

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1818 EFFECTS OF FAECAL MICROBIOTA TRANSPLANTATION (FMT) ON THE DENSITY OF THE STEM CELLS IN THE DUODENUM OF PATIENTS WITH IRritable BOWEL SYNDROME

T. Mazzawi1, M. El-Salhy2, G.A. Lied3, T. Hausken4
1Gastroenterology-medicine, Haukeland University Hospital, Bergen/Norway
2Gastroenterology-medicine, Stord Hospital Helse-Fonna, Stord/Norway
3Centre for Nutrition, Clinical Medicine, University of Bergen, Bergen/Norway
4Haukeland University Hospital, National Centre for Functional Gastrointestinal Disorders, Bergen/Norway

Contact E-mail Address: tarek.mazzawi@med.uib.no

Introduction: The interaction between gut microbiota and enteric stem cells alterations is believed to play an important role in the pathophysiology of irritable bowel syndrome (IBS). The densities of the duodenal enteric stem cells are abnormal in IBS patients, which appears to be caused by a reduced stem cells density and their differentiation into endocrine cells (1).

Aims & Methods: The aim is to investigate the effects of faecal microbiota transplantation (FMT) on the differentiation of the stem cells into endocrine cells as detected by neurogenin 3, the stem cells as detected by Musashi 1 and the enteric progenitor cells as detected by all-endothelial progenitor cells.

Results: The score of IBS symptoms as assessed by IBS-SSS was significantly reduced 3 weeks after (240.2 ± 33.6) compared to before (326.6 ± 22.3) receiving FMT, P = 0.009. The scores of IBS-SSS before and 3 weeks after FMT for PI-IBS patients were 278.3 ± 27.8 and 210.4 ± 21.4, respectively (P = 0.025), and for idiopathic IBS were 352.5 ± 34 and 270.3 ± 54, respectively (P = 0.034). The densities of neurogenin 3, Musashi 1 and enteric progenitors cells in the duodenum of IBS patients before and 3 weeks after receiving FMT are presented in Table 1.

Conclusion: Faecal microbiota transplantation improved the symptoms in IBS patients, both PI and idiopathic. This improvement was associated with a change in the enteric progenitor cell density. The changes in the enteric progenitor cell density does not appear to be caused by changes in the stem cells or their early progenitors, but rather by changes in the differentiation progeny as detected by changes in neurogenin 3.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1819 THE EFFECT OF ESOPHAGEAL ACID EXPOSURE ON NMDA RECEPTOR SUBUNITS EXPRESSION AND D-SERINE IN PREFRONTAL CORTEX AND HIPPOCAMPUS

W. Zhang 1, L. Duan 2, K. Wang 2, X. Wang 2
1Gastroenterology, Peking University Third Hospital, Beijing/China
2Department Of Gastroenterology, Peking University Third Hospital, Beijing/China

Contact E-mail Address: weifang@bjmu.edu.cn

Introduction: Neuronal plasticity has been reported to develop following nociceptive emotional experience in prefrontal cortex (PFC) and hippocampus. The N-methyl-D-aspartate receptor (NMDAR) and D-serine, the endogenous co-agonist of NMDAR1, may mediate the neural plasticity. However, whether the neural plasticity participates in the mechanism of esophageal visceral hypersensitivity is little known.

Aims & Methods: This study aims to investigate the expression of NMDAR and the alteration of D-serine after neonatal and adult esophageal acid exposure. All rats were exposed to esophageal acid or saline at postnatal days 7–15(P7-P15), and most rats underwent acute acid or saline exposure again at adult time (P60). All rats were randomly distributed to 5 groups, including P7S, P7H, rats were exposed to esophageal acid or saline at postnatal days 7–15; P60: adult at postnatal 60 days; P7-H: 0.1N HCL infusion; S: saline control). The tissue harvest was conducted at P60. We examined the expression of subunits of NMDAR (including NR1, NR2A, NR2B, and NR2B), c-fos, and serum racemase in PFC, dorsal hippocampus (DH) and ventral hippocampus (VH). We also determined the D-serine and L-serine in PFC and hippocampus by LC-MS analysis. Statistical comparisons were performed by General Linear Model and one-way ANOVA in SPSS.

Results: In PFC, compared with adult saline treatment (AS, including P7H and P7S group) and without adult treatment (A-, including P7S and P7H group), adult acid exposure (AH) increased the expression of NR1 (P = 0.052, P < 0.028), NR2B (P = 0.035, P < 0.045), and serum racemase (P = 0.015, P < 0.017) significantly. In ventral hippocampus, compared with adult treatment absence, adult acid exposure caused increasing expression of NR2B (P = 0.012) and NR1 (P = 0.024) significantly. In PFC, the expression of D-serine in the P7S and P60H group was obviously higher than that of other groups (P = 0.008). See Table1. In dorsal hippocampus, there was statistical significance on the level of c-fos between the P7S and P7H group and other groups (P = 0.008). Table1. In PFC, the LC-MS analysis results that D-serine (AH vs A-: P = 0.000, AS vs A-: P = 0.002, AH vs AS: P = 0.008) and L-serine(AH vs A-: P = 0.000, AS vs AS: P = 0.015, AS vs AS: P = 0.082) decreased in the AH and AS group, comparing with A- group.

The expression of serine racemase in PFC and c-fos in VH

<table>
<thead>
<tr>
<th>Group (n = 8/group)</th>
<th>PFC Serine Racemase</th>
<th>VH c-fos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(mean ± SD)</td>
<td></td>
</tr>
<tr>
<td>P7S</td>
<td>0.139 ± 0.131</td>
<td>0.035 ± 0.008</td>
</tr>
<tr>
<td></td>
<td>(mean ± SD)</td>
<td>(mean ± SD)</td>
</tr>
<tr>
<td>P7H</td>
<td>0.141 ± 0.083</td>
<td>0.036 ± 0.015</td>
</tr>
<tr>
<td></td>
<td>(mean ± SD)</td>
<td>(mean ± SD)</td>
</tr>
<tr>
<td>P7P + P60H</td>
<td>0.166 ± 0.066</td>
<td>0.035 ± 0.011</td>
</tr>
<tr>
<td></td>
<td>(mean ± SD)</td>
<td>(mean ± SD)</td>
</tr>
<tr>
<td>P7P + P60H</td>
<td>0.124 ± 0.031</td>
<td>0.040 ± 0.015</td>
</tr>
<tr>
<td></td>
<td>(mean ± SD)</td>
<td>(mean ± SD)</td>
</tr>
<tr>
<td>P7P + P60H</td>
<td>0.300 ± 0.194</td>
<td>0.083 ± 0.060</td>
</tr>
</tbody>
</table>

Conclusion: Acute esophageal acid exposure may increase the expression of NMDAR in PFC and ventral hippocampus. We also found the first acid exposure at adult stage may enhance the expression of serine racemase in PFC and c-fos in ventral hippocampus, but this phenomenon may be absent in those rats having the experience of acid exposure in early life. Those long-term and transient molecular alterations may mediate the development of acid exposure related esophageal visceral hypersensitivity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1820 18. UPPER GI NERVE- GUT AND MOTILITY: TRANSMITTERS/SIGNALS/RECEPTORS/ENTERIC NERVOUS SYSTEM

L. Jia 1, L. Yao 2, C. Dong-Yun 3, L. Wei-Dong 4, X. Jian 5
1Department Of Gastroenterology, Guangzhou First People’s Hospital, Guangzhou Medical University, Guangzhou/China
2Department Of Psychology, Guangzhou Nansha Central Hospital, Guangzhou/China

Contact E-mail Address: 13925012853@139.com

Introduction: Globus pharyngeus, a sensation of a lump or tightness in the throat, is a well-defined clinical symptom that is usually long-lasting, difficult to treat, and has a tendency to recur. More than half of globus patients suffered from probable psychological disorders, such as anxiety and depression 1. Antidepressants are used in the treatment of functional gastrointestinal disorders (FGIDs) and showed a promising efficacy. Our study manifested that low-dose amitriptyline is well tolerated and effective for general globus pharyngeus patients 2. Our anterior study had ever speculated that AMT could modify brain-gut axis function, up-regulating brain-gut peptides, reducing the visceral sensitivity and regulating the secretory and motor functions of the gastrointestinal tract 3, so that gastrointestinal symptoms as well as emotional well-being could be significantly improved. As we known, serotonin (5-hydroxytryptamine, 5-HT) is an important factor in gut function, playing key role in intestinal peri-stalsis, secretion, and sensory signaling in the brain-gut axis 4. Several studies have investigated the association between SLC6A4 and functional gastrointestinal disorders, including IBS and FD. Besides, the association between various complex behavioral traits and disorders were also studied, including anxiety, major depression, suicide, smoking behavior, alcohol dependence. A single gene (SLC6A4), located on the human chromosome 17q11.2, 17q12, is coded by serotonin transporter (5-HTT). The polymorphism of this gene is characterized by the insertion or deletion of the 44-bp sequence and this is related to the different transcriptional activity of the gene. Allele with 44-bp insertion (short allele) is characterized by a three times lower transcriptional activity than allele with 44-bp insertion (long allele). Compared to other FIGIDs, the researches about globus are rare. The pathogenesis of globus pharyngeus is still unknown.

Abstract No: P1818

Table 1: Densities of stem cells and endocrine cells in the duodenum of total IBS group, PI-IBS and idiopathic IBS patients before and after receiving FMT

<table>
<thead>
<tr>
<th>Markers/Hormones</th>
<th>Total IBS, before</th>
<th>Total IBS, after</th>
<th>PI-IBS, before</th>
<th>PI-IBS, after</th>
<th>Idiopathic IBS, before</th>
<th>Idiopathic IBS, after</th>
<th>*P-value</th>
<th>**P-value</th>
<th>***P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurogenin 3</td>
<td>222.3 ± 13.8</td>
<td>394.3 ± 30.7</td>
<td>214.2 ± 18.5</td>
<td>430.5 ± 28.9</td>
<td>230.5 ± 21.5</td>
<td>358.2 ± 52.9</td>
<td>0.0006</td>
<td>0.0007</td>
<td>0.1</td>
</tr>
<tr>
<td>Musashi 1</td>
<td>5.7 ± 0.4</td>
<td>5 ± 0.5</td>
<td>5.3 ± 0.7</td>
<td>5.2 ± 0.8</td>
<td></td>
<td></td>
<td>0.8</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Chromogranin A</td>
<td>370.3 ± 21</td>
<td>269.8 ± 22</td>
<td>340.8 ± 34</td>
<td>422.7 ± 31</td>
<td>399.8 ± 20.9</td>
<td>316.8 ± 10.2</td>
<td>0.9</td>
<td>0.0006</td>
<td>0.0065</td>
</tr>
<tr>
<td>Serotonin</td>
<td>135.1 ± 14.7</td>
<td>142 ± 12.8</td>
<td>100.5 ± 7.1</td>
<td>160.7 ± 16.6</td>
<td>169.7 ± 20.6</td>
<td>123.3 ± 17.3</td>
<td>0.7</td>
<td>0.012</td>
<td>0.034</td>
</tr>
<tr>
<td>Somatostatin</td>
<td>58.6 ± 4.4</td>
<td>66.2 ± 6.3</td>
<td>52.3 ± 2.7</td>
<td>78.5 ± 8.1</td>
<td>64.8 ± 7</td>
<td>53.8 ± 6.8</td>
<td>0.3</td>
<td>0.011</td>
<td>0.017</td>
</tr>
<tr>
<td>Cholecystokinin</td>
<td>122.8 ± 6.7</td>
<td>110.7 ± 8.1</td>
<td>113 ± 10.4</td>
<td>126.5 ± 0.5</td>
<td>132.5 ± 7.2</td>
<td>94.8 ± 9.2</td>
<td>0.2</td>
<td>0.052</td>
<td>0.0006</td>
</tr>
<tr>
<td>Secretin</td>
<td>83.8 ± 4.9</td>
<td>86.7 ± 5.9</td>
<td>80.5 ± 8.8</td>
<td>89.7 ± 10.7</td>
<td>87.2 ± 4.8</td>
<td>83.7 ± 5.9</td>
<td>0.5</td>
<td>0.009</td>
<td>0.6</td>
</tr>
<tr>
<td>Gastric inhibitory peptide</td>
<td>65.1 ± 3.8</td>
<td>70.3 ± 6.2</td>
<td>60 ± 3.7</td>
<td>70.7</td>
<td>69.8 ± 6.3</td>
<td>57.2 ± 7</td>
<td>0.5</td>
<td>0.014</td>
<td>0.2</td>
</tr>
</tbody>
</table>
To the best of our knowledge, our findings are the first to establish an association between SLC6A4 gene polymorphism and globus pharyngeus.

Aims & Methods: 84 patients diagnosed with globus according to Rome III and 160 healthy controls were genotyped for 5-HTTLPR polymorphism by PCR amplification and agarose gel electrophoresis. All globus patients were studied with high-resolution manometry pre-therapy. Globus patients were randomized into paroxetine group; amitriptyline group for 6-week treatment, and were asked to complete the following questionnaires pre- and post-therapy: Edinburgh Throat Scale (GETS), Pittsburgh Sleep Quality Index, Hamilton Rating Scale Anxiety, Depression. Treatment response was defined as a > 50% reduction in GETS scores.

Results: The significant difference was shown in globus performed S/S genotype with anxiety when compared to without (X² = 14.579, P = 0.006). The S genotype had higher pressure between high upper esophageal sphincter pressure (104 mmHg) and non-high upper esophageal sphincter pressure patients (X² = 14.433, P = 0.006). There was significant association between the S/S genotype and the response to antidepressants treatment, while patients with sleep disorders or depression not.

Conclusion: A significant association was observed between S/S genotype of SLC6A4 polymorphism and globus pharyngeus, suggesting that SLC6A4 is a potential candidate gene involved in the pathogenesis of globus pharyngeus.

Disclosure of Interest: All authors have declared no conflicts of interest.

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5. 3.2013
6. P1822 THE INCIDENCE AND PREVALENCE OF ACHALASIA IN ENGLAND: A TWO NATIONAL DATABASES
7. P. Harvey
8. T. Thomas
9. J. Chandan
10. B. Coupland
11. J. Mytton
12. N. Bhala
13. P. Patel
14. K. Niranrathakumarn
15. N. Trudgill
17. 3.2013
18. P.1822
19. S. Hasak
20. T. Thomas
21. J. Chandan
22. B. Coupland
23. J. Mytton
24. N. Bhala
25. P. Patel
26. K. Niranrathakumarn
27. N. Trudgill
28. S. Hasak
29. University College London, London/United Kingdom
30. University College London Hospital, London/United Kingdom
31. Department Of Gastroenterology, University College London Hospital, London/United Kingdom
32. Contact E-mail Address: hasak.s@wustl.edu
33. Contact E-mail Address: philipharvey@nhs.net
34. Disclosure of Interest: Achalasia is an uncommon condition of failed lower oesophageal sphincter relaxation. Data regarding the incidence and prevalence are limited. The aim of this study was to provide accurate, contemporary epidemiological data utilising two national databases.
35. Aims & Methods: Hospital Episode Statistics (HES) includes demographic and diagnostic data for all English hospital admissions. The Health Improvement Network (THIN) database includes primary care records of 7% of the UK population, representative of national demographics. Both were searched for incident cases and THIN for prevalent cases of achalasia.
36. Results: There were 10,509 and 711 new achalasia subjects in HES and THIN respectively. The incidence per 100,000 person years in THIN was 1.99 (95% CI 1.87–2.11) and 1.53 (1.42–1.64) per 100,000 person years in THIN. The prevalence measured in THIN was 27.1 (25.4–28.9) per 100,000 population.
37. Table 1: Annual incidence and prevalence of achalasia
38. Year | Incidence rate HES (per 100,000 population) | 95% CI | Incidence rate THIN (per 100,000 person years) | 95% CI | Prevalence THIN (per 100,000 population) |
39. 2006 | 1.733 | 1.62–1.85 | 1.409 | 1.08–1.81 | 21.14 |
40. 2007 | 1.798 | 1.69–1.92 | 1.38 | 1.15 | 21.72 |
41. 2008 | 1.789 | 1.67–1.91 | 1.550 | 1.20 | 22.49 |
42. 2009 | 1.853 | 1.74–1.97 | 1.696 | 1.34–2.12 | 23.16 |
43. 2010 | 2.015 | 1.90–2.14 | 1.663 | 1.31–2.09 | 23.66 |
44. 2011 | 1.781 | 1.67–1.90 | 1.424 | 1.09–1.82 | 24.62 |
45. 2012 | 2.032 | 1.91–2.16 | 1.549 | 1.20–1.96 | 25.23 |
46. 2013 | 2.179 | 2.06–2.31 | 1.618 | 1.26–2.05 | 26.06 |
47. 2014 | 2.421 | 2.29–2.56 | 1.476 | 1.12–1.91 | 26.34 |
48. 2015 | 2.236 | 2.11–2.36 | 1.342 | 0.96–1.80 | 27.10 |
49. Conclusion: The incidence of oesophageal achalasia was approximately 15 to 20 per 1 million population. There were approximately 17,500 patients with achalasia in UK. In 2015 the above data represents the largest published epidemiological investigation of achalasia. The variation of findings between the databases likely results from differences in coding practice and marginally different population structures.
50. Disclosure of Interest: All authors have declared no conflicts of interest.

P1823 ACHALASIA DESPITE NORMAL INTEGRATED RELAXATION PRESSURE WITH SML WATER SWALLOWS
51. S. Sanagappali
52. M. Duffy
53. A. V. Emmanuel
54. A. Raeburn
55. M. Banks
56. R. Haidry
57. L. Lovat
58. R. Sweis
59. GI Physiology, University College London Hospital, London, UK
60. University College London, London, UK
61. Department Of Gastroenterology, University College London Hospital, London, UK
62. Contact E-mail Address: rami.swais@nhs.net
63. Introduction: Relaxation to bolus flow across the lower oesophageal sphincter (LES) is a hallmark of achalasia. Presently the gold standard of diagnosis is by high-resolution manometry (HRM) demonstration of raised integrated relaxation pressure (IRP) following ten 5 ml water swallows; however, this does not rule out normal swallowing behavior. It has been demonstrated that the addition of adjunctive tests improves sensitivity of identifying relevant dysmotility. Such tests include multiple water swallows (MWS; 200 ml water drunk freely) and solid swallows. In addition, the timed barium esophagram (TBE) measures esophageal emptying. This study describes a cohort of patients who have been treated as having achalasia based on resistance to flow not exhibited with normal swallowing.
64. Aims & Methods: Inclusion criteria were all patients between October 2014–2016 with normal mean and median IRP with 5ml water swallows but considered to have achalasia due to resistance to flow demonstrated by pan-oesophageal pressurization (PEP) during MWS or solid swallows and/or a persistent column at 5 minutes during TBE. Outcome following treatment was based on the Eckardt symptom score (ES).
Results: 14 patients (9 male) fulfilled inclusion criteria. 7 were treatment-naïve and 7 treatment-experienced (3 myotomy, 4 dilatation). Mean resting LES pressure was 14.6 ± 7.4 mmHg. In all patients, and mean median IRP values for ten 5 mL water swallows were non-raised (mean 9.1 ± 4.3 and 8.7 ± 4.5 mmHg respectively). Of the 7 treatment-naïve patients, 5 demonstrated PEP on MWS, 3 on solid swallows and 6 had a positive TBE at 5 minutes. In treatment-experienced patients, 5 had PEP on MWS, 1 on solid swallows and all had a positive TBE. Of the 13 who had resistance to flow on TBE, 10 (77%) also had resistance demonstrated during MWS and/or solid swallows. Mean height of the 5-minute column in TBE in treatment-naïve patients was 16.5 ± 8 mmHg. 8 patients have (so far) undergone therapy based on these findings: one per-oral endoscopic myotomy and 7 pneumatic dilatations. The median baseline ES was 7.5 (IQR: 5–8). The median ES at minimum 3 months (range 3–15 months) following treatment was 1 (IQR 0–0.5; P<0.001 cf. baseline). Similarly, there was significant improvement in TBE findings post-therapy (mean 5-minute column height 3.5 ± 4.1 cm; P = 0.04 cf. baseline).

Conclusion: A normal IRP for water swallows does not preclude a diagnosis of achalasia. The addition of free drinking/solidswings during HRM or the TBE can identify pathology that might have been missed with standard 5 mL water swallows alone as normal, clinically relevant swallowing behavior is reproduced. Patients treated based on this algorithm exhibit excellent treatment outcomes, validating this approach. Further, the close correlation of HRM adjunctive testing with TBE supports its routine inclusion in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: The timed barium esophagram (TBE) is an objective measurement of esophageal (3 myotomy, 4 dilatation) and symptoms used in the assessment of achalasia. Post-therapy resolution of the maximum height of the residual barium column has been found to correlate imperfectly with short-term symptomatic outcomes, but carries long-term prognostic implications. We hypothesize that the surface area (SA) of the barium column may be more accurate than height, firstly, by correlating improvement in esophageal width that often occurs post-therapy, but also by correcting for artificially higher height values due to esophageal (lateral) contraction occurring during a single image. We aimed to compare the correlation of TBE outcome measures of height and SA with symptom improvement post-therapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent therapy between August 2015–6 and had TBE and Eckardt score (ES) performed at baseline and following the last therapy session. With TBE upright single images were acquired at 1.2, and 5 minutes following ingestion of 100–200 mL of low-density barium sulfate. Barium height was measured between the gastro-esophageal junction and the superior extent of any residual barium column. After manually defining the column boundaries, software was used to calculate SA (AGFA IMPAX surface area tool (Figure)). Adequate symptom relief was defined as reduction in ES to ≤2. On TBE, measures of adequate emptying evaluated were i) post-therapy column height ≤5cm, ii) >50% reduction in column height from pre to post-therapy and iii) >50% reduction in column SA from pre to post-therapy. Associations between symptom improvement and TBE measures of emptying were assessed using Pearson’s correlation (R). Paired t-tests compared TBE measures before and after therapy.

Results: 18 patients (9 male; 6 Type I, 11 Type II, 1 Type III) were included. 11 had dilatation and 7 endoscopic myotomy. Reductions with therapy of both mean 5-minute barium column height (14.7 ± 8.7 to 7.9 ± 6.0 cm; P = 0.001 and 0.10; 27.2 ± 43.5 to 24.5 ± 26.0 cm²; P = 0.02) were noted. Symptoms also improved with treatment; median baseline ES of 7 (IQR 5.25–8) improved to 0 (IQR 0–1) post-therapy. Only 2 patients had inadequate symptom relief and are awaiting further treatment. However there was poor concordance between post-therapy barium column height and symptomatic relief (i.e. post-therapy column height >5 cm despite ES ≤3 or vice versa), and the correlation (R) between these two variables was poor (Table). Similar poor concordance was seen when adequate emptying was defined by >50% reduction in column height, but >50% reduction in SA paralleled symptom improvement.

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: In TBE performed on achalasia patients post-therapy, reduction in SA of the residual barium column compared with baseline values parallels symptomatic relief more closely than reduction of column height.

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: Nutrients enhance belching and reduce intestinal propulsion of gastric gas in healthy volunteers.

E.N. Caballero de Garcia, B. Benslamain Seyid-Jebri, J. Serra Pueyo Gut Motility Unit, Hospital Universitario Germans Trias i Pujol, Badalona/Spain

Contact E-mail Address: noeocaballero4@uab.cat

Aims: To determine the effect of gastric nutrients on trans-portation of gastric gas, and its relationship with abdominal symptoms in healthy volunteers without gastrointestinal symptoms (4 women and 3 men, age-range 21–29 yrs), a mixture of non-absorbable gases was infused into the stomach, 5 cm caudal to the lower margin of the LES, at 25 mL/min during 60 min (Total gas infused: 1500 mL). In each subject two gas infusion tests were performed on separate days, with simultaneous infusion of nutrients (Nutridrink 1.5 Kcal/ml, total 315 Kcal) or saline. Belching, by an esophageal multilumen impedance manometry catheter, rectal gas evacuation, via a rectal tube connected to a barostat, and epigastric and abdominal symptoms, by specific questionnaires (from 0–6), were continuously recorded from the start of gas infusion until 30 min after gas infusion stopped. (Total recording time: 90 min).

Results: During saline infusion, participants evacuated via the rectum virtually all the infused gases (1613 ± 87 mL), with exceptional belching (1.1 ± 0.8 belches) and mild epigastric perception (score 1.7 ± 0.6 at the end of infusion), that decreased during the 30 min following infusion stop (score 1.1 ± 0.4; p = 0.051 vs infusion

Contact E-mail Address: rami.swesi@nhs.net
PI827 MODIFICATIONS OF THE ECKARDT SCORE PARAMETERS AFTER PERORAL ENDOSCOPIC MYOTOMY
M. Barret1, S. Lebanel1, M. Gaudrič1, M. Guillautom1, A. Oudjidi1, M. Dhogue1, V. Aribhôl1, A. Chryssostalis1, R. Coriat1, S. Chaussade1, F. Prat1
1Gastroenterology, Cochin Hospital, Paris/France
2Radiology, Cochin Hospital, Paris,France
Contact E-mail Address: maximilien.barret@aphp.fr
Introduction: Peroral endoscopic myotomy (POEM) is a recently developed technique or the treatment of lower esophageal sphincter achalasia. POEM could be as efficient as surgical Heller myotomy, while associated with lower morbidity. Currently, the Eckardt score is the clinical score that is the most widely used to assess the success of treatment of achalasia, clinical success being defined by a score below 4. However, POEM may not equally improve all four parameters of the Eckardt score.
Aims & Methods: All consecutive patients undergoing POEM for achalasia at our institution, performed by 3 operators with at least 6 months follow-up were prospectively included. Demographic, clinical, procedural, manometric and radiologic data were collected.

Results: Between March 2013 and July 2016, 62 POEM procedures were performed in 49 patients (Male/female 33/22; Median age 55 ± SD 17 years (range 15–77)). Median (IQR) follow-up time was 8 (3–13) months. Achalasia was diagnosed for a median (IQR) of 24 (13–62) months, and 42% of the patients had received a previous treatment, by botulinum toxin injection (8%), pneumatic dilatation (32%), or Heller myotomy (7%). Achalasia subtype were type I in 33%, type II in 37% and type III in 5%. Median Eckardt score and integrated resting pressure were 7 (6–8) and 24 (19–33) mmHg, respectively. An anterior myotomy was done in 60% of cases, and a posterior myotomy in 40% of cases. Median myotomy length was 14 (12–16) cm, and hospital stay was 3 (2–4) days. Severe complications occurred in 5% of cases (1 pleural effusion requiring drainage, 2 pneumonias with more than 10 days of hospital stay). Success rates were similar between patients treated by anterior or posterior myotomy (92% vs. 92%, p = 1), or between those with or without previous treatment (85% vs. 96%, p = 0.32). Six treatment failures were treated by redo POEM in 3 cases, pneumodilatation in 2 cases, and esophagectomy in one case. Median Eckardt score varied from 7 (6–8) to 1 (0–2) at 3 months and 2 (0–3) at 12 months (p < 0.0001). Dysphagia score varied from 7 (6–8) to 1 (0–0) and 0 (0–0) (p < 0.0001), while regurgitations varied from 2 (1–3) to 0 (0–1) and 0 (0–0) (p < 0.0001), chest pain varied from 0 (0–0) to 0 (0–1) and 0 (0–0) (p = 0.006), and weight loss from 2 (1–3) to 0 (0–0) and 0 (0–0) (p < 0.0001). At three months, median (range) drop of the integrated esophageal pressure was 67.3 (57–86)% for saline, 69.5 (60–83)% for Iberogast and 68.6 (60–83)% for placebo. The difference between POEM and placebo was significant (p = 0.007). At six months, median (range) drop of the integrated esophageal pressure was 67.3 (57–86)% for placebo, 69.5 (60–83)% for Iberogast and 68.6 (60–83)% for placebo. The difference between POEM and placebo was significant (p = 0.007). After treatment, median Eckardt score was 7 (6–8) in 60% of cases, and 0 (0–0) (p = 0.001) in 40% of cases. The analyses performed by the study day and the follow-up visit, 86% of patients still had clinical success, and 31% reported gastro-esophageal reflux symptoms.
Conclusion: Our results confirm the efficacy of the POEM as a first line or rescue treatment, and its low complication rate. POEM is most effective on dysphagia and weight loss, while chest pain and regurgitations tend to persist after treatment.
Disclosure of Interest: All authors have declared no conflicts of interest.

PI828 SUBGROUP ANALYSES OF CLINICAL TRIALS ON A HERBAL MEDICINE IN FD, STW 5: AN INTERNATIONAL CASE SERIES
M. Barret1, A. Chryssostalis1, R. Coriat1, S. Chaussade1, F. Prat1
1Gastroenterology, Cochin Hospital, Paris/France
2Radiology, Cochin Hospital, Paris,France
Contact E-mail Address: oluf@kelber.org
Introduction: Well-proven therapeutic options for the therapy of functional gas-trointestinal disorders are collected.
Aims & Methods: As well as patients of different age groups, sub-group analyses were conducted. More than 73 Mio patients are available. For determining whether its efficacy in gastroduodenal ulcers (GIUS) and in male and female patients did show a comparable efficacy in all these groups.

Results: In all trials, a uniform evaluation was possible. The full analysis set (FAS) included 557 patients (272 resp. 285 for placebo resp. verum). The mean age (45 years) was similar (both groups 168 cm). Mean body weight (72.0 resp. 72.2 kg), the BMI (25.35 resp. 25.54), the gender distribution (67.5 resp. 69.5% females), the duration of the disease at the time of inclusion and the baseline of the GIS (11.6 resp. 11.5 points) were very comparable between both groups. The primary variable GIS the difference between placebo and verum after 28 days of treatment showed a highly significant (p < 0.0001) difference between placebo and verum (6.7 resp. 4.7 points). The analyses in different age groups (up to 30, 30–40, 40–50, 50–60, above 60) and in male and female patients did show a comparable efficacy in all these groups.

Conclusion: These meta-analyses therefore clearly show the efficacy of STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also the very good tolerability shown by the study data, STW 5 is well suitable also in self-medication. Additional insights can be expected from additional sub group analyses, as e.g. the evaluation of subgroups with specific predominant symptoms.
Disclosure of Interest: J. Müller: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
O. Keler: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
B. Vanloon: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
C. Fink: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
S. Rabini: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
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Reference

PI829 THE TREATMENT OF ACHALASIA IN PATIENTS WITH OESOPHAGEAL VARICES: AN INTERNATIONAL CASE SERIES
C. Mague1, R. Holloway2, C.P. Gyawali3, S. Roman3, M. Poché4, E. Savarino5, F. Quader6, N. Zarate Lopez7, A.J. Bredenoord8, R. Sweis7
1University College London Hospitals, London/United Kingdom
2Royal Adelaide Hospital, Adelaide/Australia
3Washington University in St. Louis, St Louis/United States of America/MO
4Digestive Physiology, Hospital Edouard Herriot, Lyon/France
5Hepatogastroenterology, Hospital Edouard Herriot, LYON/France
6U/Gastroenterology Department Of Surgical, Oncological And Gastroenterological Sciences, University Of Padsa, Padsa Italy, University of Padsa, Padsa/Italy
7GII Physiology Unit, University College London Hospital, London/United Kingdom
8Dept. Of Gastroenterology, Academic Med, Centrum Amsterdam, Amsterdam/ Netherlands
Contact E-mail Address: cormacc.mague@uhs.net
Introduction: Achalasia is a chronic condition presenting with dysphagia, regurgitation, chest pain and/or weight loss. Management options include Heller’s myotomy, Botox, pneumatic dilatation and Per-Oral Endoscopic Myotomy (POEM). Treatments carry risks of bleeding and perforation. Concomitant portal hypertension with varices is very rare and achalasia treatment in this context has only been described in single case reports.
Aims & Method: Experience from physicians/surgeons treating these disorders was sought through the International Manometry Working Group.

Results: 13 patients with portal hypertension from 6 international centres have been collected; mean age 61 ± 9 years. The mean pre- therapy Eckardt score was 7 (IQR 6–9). 9/13 (69%) patients had a Barrett’s esophagus (BMI ≥25) and 12/13 (92%) had esophageal physiology studies performed. There were 3 Type 1, 6 Type II, 2 Type III achalasia and 2 with oesophageal-gastric outflow obstruction. Varices were identified endoscopically in 7 patients, radiologically in 5 and in 1 patient varices were first noted during surgical myotomy. 2 patients had grade 3 varices, 3 grade 2 and 3 had grade 1 varices (grading not provided for the rest). Cirrhosis was due to alcohol in 7 patients, non-alcoholic steatohepatitis in 3, cryptogenic in 2 and 1 had hepatitis C cirrhosis. 75% were Child-Pugh A and 25% were Child-Pugh B. Patients had diverse treatments for their achalasia. 4 were treated with Botox injections (1 with EUS), 4 had dilation alone, 3 received a POEM, another had POEM then dilation and 1 patient had Botox followed by Heller’s myotomy. 3 patients underwent variceal eradication in advance; all had banding first but in 2 patients superficial eradication was followed by a transju-luminal percutaneous transluminal angioplasty (TIPPS) before endoscopic dilation. All patients had symptomatic improvement with median Eckardt score post inter-vention = 1 (IQR 0–2) < 0.0001 compared to baseline. A matched group of 20 patients who underwent treatment for achalasia (all subtypes) but without varices had received complications of bleeding or perforation; however both patients who had TIPPS had temporary hepatic decompensation.
Conclusion: This report 13 patients from international centres who have had interventions for achalasia on the background of oesophageal varices. None had bleeding complications despite only 3 having had variceal eradication. Symptom response mirrored those who undergo standard achalasia therapy,
PI830 THE NATURAL HISTORY OF ACHALASIA: EVIDENCE OF A CONTINUUM–THE PATTERN-EVOLUTIVE STAGING THEORY

Dept. Of Surgical, Oncological And Gastroenterological Sciences, University Hospital of Padova, Padova/Italy

Contact E-mail Address: m.costantini@unipd.it

Introduction: Esophageal achalasia is classified into three clinically relevant patterns at High Resolution Manometry (HRM) and according to Chicago Classification. Currently, it is unclear whether they represent distinct entities or are part of a disease continuum.

Aims & Methods: The aims of this study were: a) to test the hypothesis that the three manometric patterns represent different stages in the evolution of esophageal achalasia and b) to investigate whether manometric patterns change after Laparoscopic Heller-Dor (LHD). We evaluated the patients who had a diagnosis of achalasia and underwent LHD as first treatment from 1992 to May 2016. Symptoms were scored using a detailed questionnaire for dysphagia, food-regurgitation, and chest pain; barium swallow, endoscopy, and esophageal manometry (conventional or High Resolution technique) were performed, before and after surgery for a minimum of 6 months after surgical treatment. All conventional manometric tracings, before and after 2010, were reviewed and re-classified according to the manometric-pattern classification, whereas after 2010 the HRM data were prospectively collected.

Results: Five-hundred and eleven consecutive achalasia patients (M:F = 283:228) represented the study population. Based on their manometric findings, 231 patients (45.2%) were classified as having pattern I, 241 (47.2%) had pattern II, and 39 (7.6%) had pattern III. Demographic and clinical data showed that pattern II cases had a shorter duration of symptoms, a more incidence of chest pain, and a less dilated gullet (p < 0.001). Further, all patients with a sigmoid-shaped mega-esophagus (radiological grade IV) had pattern I achalasia. One patient with diagnosis of pattern III achalasia, who refused any treatment evolved to pattern II at a follow-up manometry performed for a progressive worsening dysphagia after 36 months. At a median follow-up of 30 months (IQR 12–56), the outcome of surgery was positive in 479 patients (91.7%).

Conclusion: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categorical units – Dysphagia (H), GER, HP, CAG, and PPIs treatment. With respect to HP IgG allow to diagnose different pathological conditions such as HP- and non HP-related gastritis (CAG), and the efficacy of proton pump inhibitor (PPI) therapy in a primary care population. A cohort of 2583 dyspeptic patients (male 36%, mean age 44.0 yrs, range 6–95) was selected in a primary care population and examined with a panel of biomarkers (Pepino-in (PG-1) and -II (PG-II), amidated gastrin-17 (G-17), and HP IgG (Biohit, Finland)). A standard questionnaire, including upper gastrointestinal symptoms and PPI use, was administered. Exclusion criteria were dysphagia, anemia, weight loss and vomiting. CAG patients underwent to endoscopy and histological examination. Results: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categorical units – Dysphagia (H), GER, HP, CAG, and PPIs treatment. Results: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categorical units – Dysphagia (H), GER, HP, CAG, and PPIs treatment. All authors have declared no conflicts of interest.

Table 1: Changing manometric patterns after LHD. *5 patients had a recovery of peristalsis (all patients had a pattern II before LHD).

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Pattern 1 pre</th>
<th>Pattern 2 post</th>
<th>Pattern 3 post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern 1</td>
<td>159 (100%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 2 pre</td>
<td>65 (29.5%)</td>
<td>149 (67.7%)</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 3 pre</td>
<td>7 (24.1%)</td>
<td>8 (27.6%)</td>
<td>8 (48.3%)</td>
</tr>
</tbody>
</table>

Conclusion: The data of this study strongly support the hypothesis/ theory that the different manometric patterns of achalasia could represent different evolutive stages of the disease - where pattern I is the earlier stage, pattern II an intermediate-stage, and pattern I the end stage.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI831 ROLE OF A SERUM BIOMARKERS PANEL (GASTROPEANL®) IN NON-INVASIVE DIAGNOSIS OF UPPER GI DISEASE: DATA BY A PRIMARY CARE POPULATION OF NORTH-EAST ITALY

G. Baldassare1, M. Franceschi1, M.P. Panozzo2, F. Tomba1, A. Ferrenato1, S. Grillo1, D. Sella1, M. Santacatterina1, A. Antico2, F. Di Mario1
11st Unit of General Practitioner, University of Padova, Padova/Italy
2Department Of Clinical Pathology, Uls 7 Pedemontana, Santsoro/Italy
3Gastroenterology, University of Parma, Italy, PARMA/Italy
4University Of Parma, Department of Clinical and Experimental Medicine, section of Gastroenterology, Parma/Italy

Contact E-mail Address: francesco.tomba@aulss7.veneto.it

Introduction: The development of non-invasive methods to detect the presence of H. pylori, and to estimate the extent and severity of gastritis, have reduced the need for diagnostic endoscopy in asymptomatic individuals. However, it is not known whether the use of non-invasive diagnostic methods is effective in dyspepsia patients.

Aims & Methods: To use a non-invasive blood test with four stomach-specific biomarkers to assess the prevalence of different stomach conditions: gastroesophageal reflux disease (GERD), H. pylori (HP) infection, chronic atrophic gastritis (CAG), and the efficacy of proton pump inhibitor (PPI) therapy in a primary care population. A cohort of 2583 dyspeptic patients (male 36%, mean age 44.0 yrs, range 6–95) was selected in a primary care population and examined with a panel of biomarkers (Pepino-in (PG-1) and -II (PG-II), amidated gastrin-17 (G-17), and HP IgG (Biohit, Finland)). A standard questionnaire, including upper gastrointestinal symptoms and PPI use, was administered. Exclusion criteria were dysphagia, anemia, weight loss and vomiting. CAG patients underwent to endoscopy and histological examination.

Results: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categorical units – Dysphagia (H), GER, HP, CAG, and PPIs treatment. All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1831

Contact E-mail Address: g.holtmann@uq.edu.au

Introduction: Functional dyspepsia (FD) is one of the most common functional gastrointestinal disorders characterised by chronic or relapsing symptoms without structural or biochemical abnormalities that can be identified in the routine clinical setting. Thus, treatment targets symptoms. Very little is known about prolonged treatment for more than 4 weeks. The overall success rate of the combined treatment (LHD plus endoscopic dilations) has been reported to be 80%. This study aimed to evaluate the sustained effects of Menthacarin1 with regard to disease-specific symptoms and QoL in FD patients. After the 4-week randomised placebo-controlled treatment period, patients were allowed to continue the treatment. The treatment was given in a double-blind fashion and allocation of treatment followed the initial randomisation. 114 adult FD outpatients were initially treated and received twice a day one enteric-coated Menthacarin capsule or a matched placebo capsule for 4 weeks. Fifty-four of them participated in the optional follow-up phase and received Menthacarin (34) or placebo (20) for further 8 weeks according to their original randomization. The results of these 54 patients are presented here. Outcomes were assessed utilising the validated self-rating Nepean Dyspepsia Index (NDI). Intra-individual differences between baseline and week 4/week 12 for NDI sub-scores for pain (sum of the NDI items ‘pain’ or ‘ache in upper
abdomen, ‘discomfort in upper abdomen’, ‘cramps in upper abdomen’ and ‘belching’) and discomfort of the NDI items ‘pressure in upper abdomen’ and ‘fullness after eating or slow digestion’) and for QoL by NDI total score were compared and descriptively tested by means of Wilcoxon-Mann-Whitney U-tests.

Results: After the initial 4 weeks, 54/114 patients opted for an extension of therapy. Interestingly, 34 out of 52 patients had been on active therapy while only 20 had received placebo. Until week 4, the NDI sub-score for pain had decreased by 7.5 ± 3.9 points during Menhitarin treatment as compared to 5.4 ± 4.1 points during placebo treatment (p = 0.0371). After the follow-up, overall redaction for Menhitarin (8.7 ± 4.9 points) was also significantly better as compared to placebo (5.1 ± 4.9 points, p = 0.005). The NDI sub-score for discomfort had decreased until week 4 by 3.5 ± 2.1 points during active therapy as compared to 1.2 ± 2.1 points during placebo treatment (p = 0.0003). For the 12-week therapy, the score had declined by 3.7 ± 2.5 points and 1.3 ± 2.6 for Menhitarin and placebo, respectively (p = 0.0014). Overall QoL improvement was better for active medication for 4 and 12 weeks as compared to placebo.

Conclusion: After 4 weeks of randomised double-blind, placebo-controlled treatment with either Menhitarin or placebo, patients who received active medication are more likely to opt for a continuation of therapy as compared to patients on placebo. The gain over placebo remained significant even after 12 weeks of treatment. Menhitarin® is a proprietary combination of essential oils of specified quality from Mentha × piperita L. (90 mg peppermint oil WS® 1340) and Carum carvi (50 mg Caraway oil WS® 1520).

Disclosure of Interest: G.J. Holtmann: Financial support for research and lecture fees from Dr. Willmar Schwabe GmbH & Co. KG, B. Stracke: Employee of Dr. Willmar Schwabe GmbH & Co. KG.

P1833 IMPROVEMENT OF APPROPRIATENESS OF PROTON PUMP INHIBITOR (PPI) THERAPY PRESCRIPTION WITH USE OF SEROLOGICAL MARKERS (GASTROPANEL) IN A PRIMARY CARE POPULATION

M. Franceschini1, M.P. Panozzo2, A. Ferronato2, F. Tomba1, D.SELLA3, S. Landi4, A. Antico5, F. Di Mario6, G. Baldassarre6

1Endoscopic Unit - Department Of Surgery, Uliss 7 Pedemontana, Santorso/Italy
2Department Of Clinical Pathology, Uliss 4 Alto Vicentino, Santorso, Italy, Hospital ULSS4 Alto Vicentino, Santarso/Italy
3Department Of Medicine And Surgery, University of Parma, Parma/Italy
4University Of Parma, Department of Clinical and Experimental Medicine, Section of Gastroenterology, Parma/Italy

Contact E-mail Address: francesco.tomba@alunet.it

Introduction: The introduction of proton pump inhibitors (PPIs) into clinical practice has revolutionized the management of acid-related diseases. Studies in primary care and emergency settings suggest that PPIs are frequently inappropriately prescribed or used in clinical conditions with little benefit.

Aims & Methods: To evaluate the role of Gastropanel in relation to the appropriateness of PPI-therapy prescription. 2583 dyspeptic patients (male 36%, mean age of 44.0 yrs, range 6-95) with no alarm symptom (i.e., dysphagia, anemia, weight loss and vomiting) from a primary care population were included in the study. For each patient a blood sample was collected for serum Pepsinogen I (PG-I) and II (PG-II), Gastrin 17 (G-17) and IgG HP (Biohit, Oyj, Finland); moreover, a clinical questionnaire searching for symptoms and presence of HP, and PPI therapy was filled out. We have evaluated the following serological profiles: HP infection, chronic atrophic gastritis (CAG), response to PPI therapy. The results obtained were used to evaluate the appropriateness of PPI-therapy prescription.

Results: 1015/2583 (39.3%) received PPI therapy up to three months before serum sampling and were included in the study. Among 1015 patients under PPI therapy, 294 (29.0%) received half-dose PPIs, 709 (69.8%) full-dose PPIs and 12 (1.2%) an exceeding-dose PPI. Patients under PPI therapy (3.7%) showed a serological status compatible with body CAG (the definitive diagnosis was confirmed histologically). 68 (6.7%) presented HP infection. Table 1 shows the values of PG-I and G-17 values according to the response to PPI therapy. Patients under PPI therapy should be preceded by the assessment of gastric functional status. In particular, patients with HP infection should be eradicated before PPI therapy, while CAG patients should not receive PPI therapy because they are no responders. Patients who do not respond to PPI therapy should be further investigated (compliance, diagnosis).

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1833

N Therapy N PPI n,% Full PPI n,% Excess PPI n,% Gastric Function status PG-I (ug/L) means+/-SD Gastric Function status G-17 (mmol/L) means+/-SD

All 1015 394 299 709 12 137.0 +/- 84.7 11.7 +/− 21.1
Good response G-17 > 7 351 83 (23.6) 259 (73.8) 9 (2.6) 194.5 +/- 121.1 22.1 +/− 17.9
Low response G-17 1–7 421 141 (33.5) 279 (66.3) 1 (0.2) 127.1 +/- 8.3 3.1 +/− 1.76
No response G17 < 1 205 64 (31.2) 140 (68.3) 1 (0.5) 91.7 +/- 40.9 0.38 +/- 0.28
CAG 38 6 (15.8) 31 (88.3) 1 (2.6) 16.6 +/- 14.8 70.3 +/− 55.2

P1834 DUODENAL ACID PERFUSION INCREASES DUODENAL MEMBRANE REACTIVITY AND ACTIVATES THE DUODENOGASTRIC REFLEX, INDEPENDENTLY FROM MAST CELL ACTIVATION

H. Vanheel1, R. Farrel1, D. Beeckmans1, M. Vicario2, J. Tack3, T. Vanuytsel1

1Turigid, KU Leuven, Leuven; Belgium
2Vall d’Hebron Institut Recerca Gastroenterology, Barcelona; Spain

Contact E-mail Address: hanne.vanheel@med.kuleuven.be

Introduction: We recently reported that functional dyspepsia patients show impaired duodenal integrity, associated with low-grade inflammation (Vanheel, Gut 2014). A potential cause underlying this phenomenon may be the increased duodenal acid exposure that has been demonstrated in some of these patients.

Aims & Methods: Our aim was to evaluate the effect of duodenal acid perfusion on duodenal permeability in healthy volunteers and to investigate whether mast cell activation is required for acid-induced impairment of mucosal integrity. As it has already been shown that duodenal acid activates duodenogastrectomy reflex pathways, we also assessed intragastric pressure (IGP). This study consisted of 2 groups, each including 10 healthy volunteers. 1) An infusion tube was positioned in the second part of the duodenum and a high resolution manometry probe was positioned in the stomach to measure IGP. HCl 0.1N or saline was infused in the duodenum during 30 min (5mL/min) in a randomized, double-blind manner.

Disclosure of Interest: All authors have declared no conflicts of interest.
increasing. Pepsinogen I (PGI) <30 μg/mL, PGI/PGII <3 and gastrin-17 (G17) >10 μpmol/L are non-invasive serological markers to explore gastric function, with a negative predictive value for chronic atrophic gastritis (CAG) of 96%.

Aims & Methods: Aim of the study was to evaluate gastric function by means of serology (PGI, PGII, G17 and IgG-antibodies against Helicobacter pylori) in very elderly patients, including centenarians. A total of 379 patients were prospectively enrolled (M = 126, F = 253, mean age = 83.6 ± 8.7, range 70-106). They were divided in four groups: 132 subjects with an age between 70 and 79 years old (first group), 92 subjects between 80 and 89 (second group), 76 subjects between 90 and 99 (third group) and 25 subjects between 100 and 106 (fourth group). Demographics and drug intake, particularly the PPI intake, were collected. For all patients, serological markers were determined in fasting blood by using Gastropanel® (Biohit Oyj, Finland; normal values: PGI: 30-120 μg/L; PGII: 2-15 μg/L; PGI/PGII ratio: >3; G17: 1-9 μpmol/L; H.p.-IgG: <30 EU).

Results: In the first group (age 70-79), 18.2% of the subjects showed H. pylori infection (PGI >80 μg/L, IgG against H.p. >30 EU), 22.7% had CAG (PGI <30 μg/L and PGII <3) and 53.8% were under PPI therapy. 16.9% of the patients on PPI therapy had CAG. In the second group (age 80-89), 32.9% of the subjects showed H. pylori infection, 8.9% had CAG and 48.6% were under PPI therapy. 8.5% of the patients on PPI therapy had CAG. In the third group (age 90–99), 22.4% of the subjects showed H. pylori infection, 10.5% had CAG and 48.7% were under PPI therapy, 8.1% of the patients on PPI therapy had CAG. The fourth group (age 100-106), 44.0% of the subjects showed H. pylori infection, 16.0% had CAG and 72.0% were under PPI therapy. 16.7% of the patients on PPI therapy had CAG.

Conclusion: Acid secretion is preserved in most of the elderly and very elderly subjects, even in centenarians. Serological markers may be useful to identify patients affected by CAG in which the administration of PPI is inappropriate, especially in the elderly.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1836 THE PSYCHOLOGICAL CHARACTERISTICS OF REFLUX HYPERSENSITIVITY-A PILOT STUDY BASED ON SCL-90 QUESTIONNAIRE AND 24 HOUR PH-IMPEDEANCE MONITORING

K. Wang, Z. Xu, Z. Xia, Y. Ge, L. Duan
Department Of Gastroenterology, Peking University Third Hospital, Beijing/China

Contact E-mail Address: duanlnp@bjmu.edu.cn

Introduction: Reflux hypersensitivity (RH) was lately defined as a functional esophageal disorder by Rome IV workshop. The clinical and psychological characteristics are still unknown.

Aims & Methods: The aim of this study was to assess the reflux and psychological characteristics of RH. Patients who underwent 24 h pH-impedance monitoring were screened from Jan 1st 2011 to Nov 31st 2015. The patients with heartburn or chest pain ≥2 days/week for more than 6 months were enrolled. Healthy volunteers (HV) were enrolled too. All subjects fulfilled the SCL-90 questionnaire, underwent gastroscopy to exclude upper gut organic diseases and underwent HRM test to exclude manometric disorders. The patients for esophageal mucosal but overload acid, weakly acid or non-acid reflux were diagnosed as non erosive reflux disease (NERD). The patients with normal esophageal mucosal and normal reflux but positive symptom index (SI) or symptom association probability (SAP) were diagnosed as RH. The patients with normal mucosal, normal reflux, normal SI or SAP and negative PPI test results were enrolled in functional heartburn (FH) group. The reflux and psychological characteristics were compared among NERD, RH and FH.

Results: Total 231 patients were enrolled. 107 were NERD (48.25 ± 1.18 yrs, M:F = 55:52), 92 were FH (48.30 ± 1.27yrs, M:F = 98:83), 32 were RH (48.41 ± 2.63yrs, M:F = 4:28). 28 HVs (47.21 ± 2.27 yrs, M:F = 8:20) were enrolled as healthy volunteers for HRM test. The differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCI and DL) introduced by the Chicago Classification, probably due to different analysis used by the two systems (the lowest residual pressure vs IRP). Furthermore, the differences found in the measurement of the LES resting pressure and abdominal length may rely either on the different technology (3-D vs linear transducers) or on the different algorithms and thresholds used. The latter may probably also apply to the differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCI and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new system for esophageal manometry. The acquisition of new sets of normal values, to be used to compare the data measured in patients, is therefore mandatory. The results of our study may represent the reference normal values for other esophageal laboratories that are using the HRM systems and devices we tested here.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1837

HIGH-RESOLUTION ESOPHAGEAL MANOMETRY: EVALUATION OF NEW SYSTEMS FOR THE ACQUISITION AND ANALYSIS

G. Capovilla1, A. Costantini2, G. Voltarel3, E. Pesenti1, A. Perazzolo1, L. Nicoleti1, R. Salvador1, M. Costantini1
1Of Surgical, Oncological And Gastroenterological Sciences, University Hospital of Padova, Padova/Italy
2University Cattolica del Sacro Cuore, Rome/Italy
3Università Cattolica del Sacro Cuore, Rome/Italy

Contact E-mail Address: m.costantini@unipd.it

Introduction: High-Resolution Manometry (HRM) has recently became the gold standard for the evaluation of esophageal motility. A new classification of esophageal motility disorders (Chicago Classification, v. 3.0) has been developed, based on the findings from a given hardware and software. Different systems for HRM and new features of the existing ones have recently been developed.

Aims & Methods: In this study we aimed to evaluate a new solid-state HRM system and a new 3-D catheter and system for the study of lower esophageal sphincter (LES). Fifteen healthy volunteers (7 m, 8 f; median age 27) underwent two consecutive Esophageal HRM studies by using two different solid state systems (ManoScan, Medtronic, Minneapolis, USA and Medica SpA, Italy with Unisensor AG, Atikon, Switzerland catheter). The studies were performed in a random order using the standard protocol. Furthermore, a new 3-D catheter for the study of sphincters was evaluated in 12/15 volunteers.

Results: Table 1 reports the findings obtained with the Medica system compared to the consolidated Medtronics system. The data of the 3-D evaluation are also reported. The data are expressed as medians and 5th-95th percentiles.

Conclusion: Significant differences were recorded in most of the considered parameters obtained by the two HRM systems. This is particularly relevant in the evaluation of the LES relaxation, the cardinal point in the hierarchical approach of the Chicago Classification, probably due to different analysis used by the two systems (the lowest residual pressure vs IRP). Furthermore, the differences found in the measurement of the LES resting pressure and abdominal length may rely either on the different technology (3-D vs linear transducers) or on the different algorithms and thresholds used. The latter may probably also apply to the differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCI and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new system for esophageal manometry. The acquisition of new sets of normal values, to be used to compare the data measured in patients, is therefore mandatory. The results of our study may represent the reference normal values for other esophageal laboratories that are using the HRM systems and devices we tested here.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1837
**P1838 PROTON PUMP INHIBITOR THERAPY IMPROVES ESOPHAGEAL SYMPTOMS BY RESTORING A NORMAL ESOPHAGEAL PERISTALSIS IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE ESOPHAGEAL EOSINOPHILIA**

M. Della Coletta1, N. De Bortoli2, O. Bartolo3, G. Bodini4, E. Marabotto5, P. Zentini6, A. Mauro7, R. Penagino8, V. Savarino6, E. Savarino9

1Division Of Gastroenterology, Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
2Division Of Gastroenterology, Department Of Internal Medicine, University of Padua/Padua/Italy
3Dept. Of Gastroenterology, University of Padova, Padova/Padua/Italy
4Surgery, Second University of Naples, Naples/Italy
5Department Of Internal Medicine, IRCCS San Martino DIMI, Genova/Genoa/Italy
6University of Padua, Department of Gastroenterology, Genova, Genoa/Italy
7Dept. Of Internal Medicine, University of Genoa, Genoa/Genoa/Italy
8Gastroenterology And Endoscopy Unit, University of Milan, Milan/Italy
9Dipartimento Di Scienze Mediche, Università degli Studi di Milano Dip. di Gastroenterologia, Milan/Italy
10Dept Internal Medicine, Universita di Genova, Genoa/Italy
11Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy

**Contact E-mail Address:** edoardo.savarino@gmail.com

**Introduction:** Proton pump inhibition-response esophageal eosinophilia (PPI-REE) is a condition characterised by symptoms of esophageal dysfuction in the setting of eosinophilic inflammation on esophageal biopsies responding to a course of 5 weeks of PPI therapy. Recent data collected by using esophageal high resolution manometry (HRM) documented that patients with PPI-REE present frequently motility abnormalities, mostly weak peristalsis and hypotensive esophagegastroduodenal junction (EGJ). Data on the effect of PPIs in improving these motor abnormalities are lacking.

**Aim & Methods:** The aim of this study was to prospectively compare HRM features of patients with PPI-REE before and after a course of PPI therapy. Consecutive patients with symptoms suggestive of EoE underwent upper endoscopy to assess the presence of at least 15 eos/hpf on esophageal biopsies at mid/proximal esophagus and, therefore, were treated with twice-daily PPI for at least 8 weeks. Thereafter, patients repeated upper endoscopy and PPI-REE was identified in case of less than 15 eos/hpf and a 50% decrease from baseline. Patients with PPI-REE underwent HRM at the time of the diagnosis (off-PPI) and after the course of PPIs (on-PPI). Patients with achalasia and absent peristalsis were excluded. (Chicago Classification v.3).

**Results:** Twenty-eight patients [23M:5F; mean age 33] reporting dysphagia (93%), bolus impaction (68%) and chest pain (25%) were diagnosed with PPI-REE. After a proton pump secretory therapy, most of the patients reported complete resolution of esophageal symptoms directly linked to esophageal infiltration (p < 0.001), namely dysphagia, bolus impaction and chest pain. Compared to HRM features at baseline, HRM after PPI therapy showed that patients with PPI-REE had higher median EGI resting pressure [baseline 11 (1–34) vs. post-PPI 17 (1–34); p < 0.05], greater mean distal contract integral [1094 (483–5281) vs. 2634 (495–6450); p < 0.01], and less frequent panesophageal pressurization [6 (21%) vs. 0 (0%); p = 0.02]. No differences were observed in terms of distal latency and rate of different EGI subtypes (p > 0.05). As to the manometric diagnoses, after PPI therapy patients with PPI-REE showed a reduced rate of ineffective motility or fragmented peristalsis [16 (57%) vs. 7 (25%), p = 0.02] and increased frequency of normal peristalsis [9 (32%) vs. 18 (64%), p = 0.03]. No differences were observed in terms of frequency of distal esophageal spasm and outflow obstruction diagnoses (p > 0.05).

**Conclusion:** In most PPI-REE patients, PPI therapy restores the impairment of esophageal function induced by ineffective or fragmented peristalsis, thus favouring the return to a normal motility pattern. This finding, paralleled with symptoms improvement in the same subjects, seems to emphasize the important role of inflammation linked to the eosinophilic infiltration of the esophageal wall in inducing motor dysfuction and related symptoms.

**Disclosure of Interest:** V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserann, Abbvie
E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD

All other authors have declared no conflicts of interest.

**References**

Aims & Methods: Serum levels of IgG4 and IgE of 19 EoE patients were measured every six weeks of therapy with budesonide (1 mg twice a day). Biopsies were taken from the esophagus before and after therapy for histological and immunohistochemical evaluation. 14 patients with GERD without histological proof of eosinophilic granulocyte infiltration were taken as a control group. Serum levels of IgG4 and IgE of 19 EoE patients were measured before and eight weeks of therapy with budesonide (1 mg twice a day). Biopsies were taken from the esophagus before and after therapy for histological and immunohistochemical evaluation. 14 patients with GERD without histological proof of eosinophilic granulocyte infiltration were taken as control group.

Results: Serum levels of IgG4 and IgE of affected children and adolescents, which manifests in the normal development of their daily activities, their physical health and their mental status, with parents generally understanding the impact of the disease regarding children declared HRQoL. Regarding determinant factors, age was not associated with HRQoL. Number and severity of symptoms negatively correlated with child-reported and Parent proxy-reported PedsQL score and family impact score. Disease duration was identified as a risk factor for a low SF-36 score. EoE impacts on a number of domains including frustration (75.9%), possible side effects (69.4%), ease of therapy use (65.8%), and duration (65.8%) of therapy. Knowledge about patients' view regarding the different therapeutic options is very limited.

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Introduction: For technical reasons, the histological characterization of eosinophilic (EoE)-specific alterations is almost exclusively based on those found in the esophageal epithelium, whereas little is known about subepithelial abnormalities.

Aims & Methods: In this study, we aimed to systematically assess the nature of subepithelial histologic alterations, analyze their relationship with epithelial histologic findings, endoscopic features, and symptoms, and evaluate the diagnostic impact of subepithelial eosinophil counts in patients with an epithelial peak eosinophil count of <15/ hpf. We prospectively included in this cohort study adult EoE patients who underwent assessment of clinical, endoscopic, and histologic disease activity using scores.

Results: We included 200 EoE patients (mean age 43.5 ± 15.7 years, 74% males) with a median peak count of 36 intraepithelial eosinophils/hpf [IQR 14–84]. The following histologic features were identified in the subepithelial layer: eosinophilic infiltration (median peak count of 20 eosinophils/hpf [IQR 10–51]), eosinophil degranulation (43%), fibrosis (82%), and lymphoid follicles (56%). Peak intraepithelial eosinophil counts were higher, identical, and lower when compared to the subepithelial layer in 62.5%, 7%, and 30.5% of patients, respectively. Subepithelial histologic activity correlated with epithelial histologic activity (rho 0.331, p < 0.001), endoscopic severity (rho 0.208, p = 0.003), and symptom severity (rho 0.179, p = 0.011). Forty percent (21/52) of patients with <15 intraepithelial eosinophils/hpf had subepithelial peak counts of ≥15/hpf.

Conclusion: In one third of patients subepithelial peak eosinophil counts are higher than epithelial eosinophil counts. Systematic assessment of subepithelial eosinophil counts can aid in diagnosing EoE in additional 40% of all patients with epithelial eosinophils <15/hpf.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1845 THE LOCATION OF OESOPHAGEAL MUCOSAL AFFERENT NERVES IS MORE SUPERFICIAL IN PATIENTS WITH NERD THAN IN HEALTHY VOLUNTEERS AND PATIENTS WITH BARRETTE’S OESOPHAGUS

P. Woodland1, J.L.S. Ooi1, F. Grassi1, C. Lee2, J. Evans3, N. Koukias4, C. Triantos1, S. A.C. Medonald2, M. Peiris1, R. Akhtar1, A. Blackshaw1, D. Sifrim1
1Wigmore Institute For Neurogastroenterology, Barts and the London School of Medicine, Queen Mary University, London/United Kingdom
2Centre For Tumour Biology, Barts Cancer Institute, Barts and the London School of Medicine, Queen Mary University, London/United Kingdom
3Gastroenterology, University Hospital of Patras, Patras/Greece
4School Of Medicine, University of Patras, Patras/Greece

Contact E-mail Address: p.woodland@qmul.ac.uk

Introduction: The pathophysiology of heartburn perception in gastro-esophageal reflux disease (GERD) remains unclear. The degree of reflux-induced epithelial change seldom predicts symptom severity, as evidenced by the greater symptom burden seen in non-erosive reflux disease (NERD) compared to patients with Barrett’s esophagus (BE). Existing models of acid hypersensitivities are inadequate to explain this discordance.

Aims & Methods: To test the hypothesis that differences in peripheral esophageal afferent innervation may be relevant, we studied the distribution of mucosal nerve fibers in patients with NERD and BE and compared the results with that of healthy subjects. 13 patients with NERD undergoing reflux testing and 16 patients with BE undergoing endoscopic surveillance were prospectively recruited. Biopsies were obtained from the proximal and distal esophageal mucosa in NERD patients and the distalmost squamous epithelium in BE patients, then examined immunohistochemically for the presence and location of calcitonin gene-related peptide (CGRP)-immunoreactive nerve fibers. The results were compared with those from 10 healthy volunteers (HV) previously studied by our group.

Results: The distribution of mucosal CGRP-immunoreactive nerves is equidistant from the distal esophageal lumen in HV and BE (median 25.5 cell layers to surface [IQR 21.4–28.8] vs 215 [16.1–27.5] respectively, p = 0.015). Mucosal innervation is significantly more superficial in NERD both distally (8.65 pg/ml in group III (p = 0.05). The expression of surface M1/M2 macrophage markers significantly varied depending on the acidity of refluxate. Mild-alkaline pH (III group) resulted in increasing expression of M2 markers CD163/CD206 as compared to M1–CD80–CD25, but changing M1/M2 index of CD163/CD80 vs. CD206/CD25, respectively (2.86 ± 0.53 vs. 1.5 ± 0.41, p = 0.015). Analysis of MDM phenotype showed the prevalence of M1 phenotype in all groups.

Conclusion: Pooled analysis of GERD patients refluxate type influence on macrophage phenotype showed the prevalence of M1 phenotype in groups: Th2 cytokine macrophage production increased with increasing pH, and most significantly changed in IL10: 8.43 ± 3.13 pg/ml in group I vs. 27.7 ± 8.65 pg/ml in group III (p < 0.05). The expression of surface M1/M2 macrophage CD markers significantly varied depending on the acidity of refluxate. Mild-alkaline pH (III group) resulted in increasing expression of M2 markers CD163/CD206 as compared to M1–CD80–CD25, but changing M1/M2 index of CD163/CD80 vs. CD206/CD25, respectively (2.86 ± 0.53 vs. 1.5 ± 0.41, p = 0.015). Analysis of MDM phenotype showed the prevalence of M1 phenotype in all groups.
PI846 BELCHING PATTERNS IN PATIENTS WITH ISOLATED PATHOLOGICAL UPRIGHT REFLUX AND PATHOLOGICAL BIPOSITIONAL REFLUX

Gastroenterology, Maastricht UMC, Maastricht/Netherlands

Contact E-mail Address: j.conchillo@mumc.nl

Introduction: Belching is a commonly occurring symptom in patients with gastroesophageal reflux disease (GERD). Belching may afflict reflux patients who are in supine position as well as in the upright position (UP). Whether GERD patients with pathological supine upright reflux (UP) have belching patterns that are different from GERD patients with pathological bipositional reflux (BIP) remains unknown.

Aims & Methods: Aim of this study was therefore to examine the belching patterns of UP reflux patients as compared with BIP reflux patients. We included 50 consecutive patients with pathological reflux and typical symptoms who underwent 24-h pH-impedance monitoring at the Maastricht University Medical Centre from 2015 to 2017. Patients referred for excessive belching were excluded. A group of 25 UP reflux patients (10 male, mean age 52.9 years (range 22–77)) and 25 BIP reflux patients (11 male, mean age 47.9 years (range 18–77)) were enrolled. 24-h pH-impedance tracings were analysed manually. We classified belches according to: a) physiological mechanism: supragastric vs. gastric; and b) their temporal relationship with a liquid reflux episode: isolated belch, preceding or during a liquid reflux episode. Symptom-assessment analysis was performed to assess a relationship between reported symptoms and reflux episodes.

Results: BIP patients showed higher acid reflux time (17.8 ± 2.4% vs. 7.3 ± 0.6%, p < 0.001) and higher number of total reflux episodes (121 ± 9 vs. 97 ± 8, p = 0.05) than UP patients. Notably, both the proportion of reflux episodes with belches of any type and the proportion of belches preceding liquid reflux were higher in UP patients than in BIP patients (51.7 ± 3.6% vs. 32.1 ± 3.7%, p < 0.001 and 27.3 ± 3.1% vs. 17.8 ± 2.9%, p = 0.03, respectively). No difference was found in the proportion of both supragastric and gastric belches between groups. During 24-h pH-impedance monitoring UP patients reported more symptoms (21 ± 6 vs. 12 ± 3, p = 0.16) and had more positive symptoms with belches (60.2 ± 7.1% vs. 39.0 ± 6.6%, p = 0.03) than BIP patients. Of the total number of belches that were detected using 24-h pH-impedance, more belches were detected in UP patients than in BIP patients (24.8 ± 6.4% vs. 11.1 ± 2.5%, p = 0.06).

Conclusion: In our study, GERD patients with isolated pathological upright reflux had more often (symptomatic) belches than GERD patients with pathological bipositional reflux. Therefore, examination of belching patterns can assist diagnostic and therapeutic strategic planning in GERD patients who are refractory to medical therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI847 IS REFLUX DURING NAPS WORSE THAN DURING NIGHT-TIME SLEEP?

C. Tereul Sánchez-Vegazo, M. J. De Higes Ruiz, A. Albillos
Gastroenterology, Hospital Ramón y Cajal, Madrid, Madrid/Spain

Contact E-mail Address: cteruelevgazo@yahoo.es

Introduction: Gastroesophageal reflux in the recumbent period is related to a higher risk of developing oesophageal lesions (severe esophagitis or Barrett oesophagus). The only study to date that analysed reflux during daytime naps suggested that it is worse than that which occurs during the night-time sleep. Our hypothesis was that naps are not associated with a more severe acid reflux than night-time sleep, what does not support a specific recommendation against taking daytime naps for GERD patients. Avoiding short meal-to-bed time specifically for naps could be advisable.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

None of the subjects had any motility disorder defined by the Chicago classification. These were compared before and after the menthol infusion. Distal contractile integral (DCI) values from 5 ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion. ManoScan software and parameters used in the Chicago classification (v3.0) were used in the study. Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, either with a thin silicon tube attached were placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: after the baseline recording 10 water swallows of 5 ml and 3 water swallows of 10 and 15 ml. After that a 20 min. infusion challenge with 3 mM menthol 8 ml/min. was carried out and subsequently the water swallows in order described above were repeated. HRM tracings were manually analyzed using ManoScan software and Parameters used in the Chicago classification (v3.0) were evaluated. Integrated relaxation pressure (IRP), nadir LES pressure and distal contractile integral (DCI) values from 5 ml, 10 ml and 15 ml swallows were obtained. These were compared before and after the menthol infusion. Pairwise analysis was used for statistical analysis. Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during infusion presumed to be of the esophageal origin. The nadir LES pressure before and after menthol infusion was 7.5 ± 0.5 mmHg vs. 7.3 ± 0.7 mmHg, respectively (p > 0.7). IRP of 5 ml swallows was 2.8 ± 0.6 mmHg vs. 2.1 ± 0.5 mmHg showed significance (p = 0.01). However, difference of IRP of 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average of 5 ml swallows: 85.7 ± 12.6 s, respectively. Average of 10 ml swallows: 814.2 ± 116.2 mmHg before and after menthol infusion, respectively (p > 0.5). We found no difference in DCI in 10 ml and 15 ml swallows before and after menthol infusion. Menthol seemed to have had only a marginal insignificant effect on IRP and DCI in rapid swallow flow. Conclusion: We quantified the effect of menthol on the esophageal function and LES pressure in healthy volunteers using high resolution manometry. The analysis of HRM tracings revealed that menthol has no effect on particular parameters of the distal esophageal pressure and esophageal peristalsis. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1850 ANALYSIS OF THE RELATIONSHIP BETWEEN GLOBS PERCEPTION AND ACIDIC LARYNGOPHARYNGEAL REFLUX BY DUAL PHARYNGEAL AND ESOPHAGEAL 24-HOUR PH/ IMPEDANCE MONITORING
L. Kubernáková, M. Ďurčík, P. Banovcin, R. Hyrdeł Internal Gastroenterological Clinic, Jessenius Faculty of Medicine, Martin/Slovak Republic

Contact E-mail Address: lenka.kubernakova@gmail.com

Introduction: Globus is considered to be related to the gastroesophageal reflux disease/laryngopharyngeal reflux (LPR). However, a substantial part of subjective and self-perception of globic sensation which is impossible to measure objectively makes this symptom difficult to study. Visual dysphagia and, or altered functional state of the afferent nerve endings in the hypopharynx resulting from reflux have been suggested responsible for the development of globus. We hypothesized differences in the reflux burden and esophageal/pharyngeal acid exposure between the patients with LPR symptoms with globus compared to the patients with LPR symptoms without globus.

Aims & Methods: Patients referred for suspected LPR were screened and those with positive reflux symptom index (RSI > 15) and at least one acidic LPR episode during 24 h pH/impedance study were enrolled. We recruited patients that were at least 30 days without PPI treatment. Appropriate distance between pH sensors was chosen based on manometrically determined LES and UES so that the proximal pH sensor was positioned 1 cm above UES and distal sensor was positioned 4–6 cm above LES. For each LPR event we determined the maximum drop of pH on the pH level during 24 h. According to the question 8 (sensations of sticking/lump in the throat) of self-evaluated RSI questionnaire those were divided into globus positive (tack 4–5 in the RSI) or globus negative (tack 0–1 in the RSI).

Results: 19 (13M/6F) completed the study. The number of globus positive and negative patients was 11 and 8, respectively. There were no major differences between groups. Disregarding the questions about globus in the RSI there was no significant difference of the RSI between the globus positive and negative group (25 ± 2 vs. 21 ± 2, respectively, p = NS). As for the reflux in distal esophagus, we observed no difference in the acid exposure time between the globus positive and negative patients (21 ± 11 vs. 22 ± 11%, respectively, p = NS). We therefore assumed differences in the results from the hypopharyngeal pH sensor. However, the number of LPR events with pH drop to < 5.5 showed no significant difference between the globus positive and negative patients, either for the number of events (82 [5.5–6.5] vs. 55 [5.5–6.5], respectively, p = NS) or for the pharyngeal acid exposure time (45 ± 14 vs. 88 ± 42, respectively, p = NS). We speculated that more acidic LPR events (pH drop to < 5.5) might be of greater relevance. However, no significant difference was found between the globus positive and negative patients either in terms of the number of these LPR events (10 [2–2] vs. 1 [1–1], respectively, p = NS), or the pharyngeal acid exposure time (16 ± 4 vs. 42 ± 36, respectively, p = NS).

Conclusion: We found no significant difference in the reflux burden in the distal esophagus/hypopharynx between the groups of symptomatic LPR patients with and without globus using 24h dual channel pH/impedance. Other factors, e. g. visceral hypersensitivity might play a role in the development of globus symptoms, even in patients with objectively established LPR. Disclosure of Interest: All authors have declared no conflicts of interest.
P1853 HIGH RESOLUTION MANOMETRY CAN BE PREDICTIVE OF GERD AS CONFIRMED BY IMPEDANCE MONITORING: DEVELOPMENT AND INTERNAL VALIDATION OF A PREDICTIVE MODEL
1Surgery, University of Campania “Luigi Vanvitelli”, Naples, Naples/Italy
2Department Of Medical And Surgical Sciences, S. Orsola-Malpighi Hospital, Bologna/Italy
3Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
4Digestive Pathophysiology Unit, Baggiovara Hospital, Modena/Italy
5Division Of Gastroenterology, Department Of Internal Medicine, University of Pisa, Pisa/Italy
6Department Of Internal Medicine, IRCCS San Martino DIMI, Genova/Italy

Introduction: The aim of this study was to compare the prevalence of HH obtained with UE and HRM and to determine the role of this finding by diagnosing gastroesophageal reflux disease (GERD) on the basis of impedance and pH (MII-pH) monitoring. We enrolled consecutive patients with heartburn and HH diagnosed with UE. After UE, all patients underwent HRM and pH-pH to investigate GERD. All tests were performed previous a 20-day wash-out from proton pump inhibitors. Erosive esophagitis (ERD) was diagnosed according to the Los Angeles Classification, and HH was diagnosed when the separation between the squamo-columnar junction and the diaphragmatic impression was greater than 2 cm. Patients with achalasia or major disorders of peristalsis or previous surgery were excluded. MII-pH monitoring allowed to sub-classify patients with non-erosive GERD in: NERD (abnormal AET), hypersensitive esophagus (normal AET, reflux events but positive symptom-reflux association, HE) and functional heartburn (normal AET, reflux events and negative symptom-reflux association, FH). All patients underwent barium X-ray to measure HH. Recognition of two rings larger than 2 cm (reoccurrent position between EEJ and diaphragmatic hiatus) was necessary to detect HH. Results: We evaluated 151 patients (94 females) with mean age of 56.2 ± 15.4 yrs. ERD was diagnosed in 34 patients (22.5%). MII-pH allowed to subgroup patients in: 48 (31.8%) NERD, 43 (28.5%) HE, and 26 (17.2%) FH. As expected, all patients underwent HH in ERD and NERD group (p < 0.001). HH was normal in 131/151 (86.6%) and 20/151 (13.2%) in NERD and HE, respectively. HH was considered HH (HRM 55% ± 0.05 %) with barium X-ray and in 88/151 patients (barium 58.3% ± UE 100%; p < 0.05) with barium X-ray. The median length of HH during endoscopy (5.4 ± 2.6) was reported greater than that during HRM (3.9 ± 2.2) and Barium X-ray (4 ± 2.5) (p < 0.05). All details are reported in Table 1.

Table 1: Characteristic of the enrolled population stratified for GERD diagnosis

<table>
<thead>
<tr>
<th>Group</th>
<th>NERD (48)</th>
<th>HH (43)</th>
<th>FH (26)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERD (34)</td>
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<td>31.8 ± 12.6</td>
<td>14.7 ± 7.1</td>
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<td>pH-pH</td>
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<td>30.3 ± 11.2</td>
<td>31.4 ± 12.1</td>
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<td>DCI</td>
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<td>1431.0 ± 1652</td>
<td>1577.0 ± 1635</td>
<td>0.042</td>
</tr>
<tr>
<td>IRP</td>
<td>11.8 ± 5.1</td>
<td>12.6 ± 7.2</td>
<td>11.4 ± 7.8</td>
<td>0.57</td>
</tr>
<tr>
<td>DL</td>
<td>6 ± 6.1</td>
<td>6 ± 6.1</td>
<td>6 ± 6.4</td>
<td>0.036</td>
</tr>
<tr>
<td>AET (%)</td>
<td>7.7 ± 2.9</td>
<td>5.1 ± 2.3</td>
<td>2.7 ± 1.4</td>
<td>0.001</td>
</tr>
<tr>
<td>Reflux number</td>
<td>77.8 ± 23.7</td>
<td>66.9 ± 31.4</td>
<td>24.6 ± 9.1</td>
<td>0.001</td>
</tr>
<tr>
<td>Heartburn (HH)</td>
<td>33 (79.7%)</td>
<td>34 (70.8%)</td>
<td>16 (37.2%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Heartburn (X-ray)</td>
<td>34 (100%)</td>
<td>36 (100%)</td>
<td>17 (39.5%)</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Conclusion: HRM and barium X-ray showed similar diagnostic accuracy to detect HH. Thus, HRM might be considered the test of choice during pre-surgical evaluation for laparoscopic antireflux surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1854 GORD PATIENTS ARE FREQUENTLY DISSATISFIED ON LONG-TERM PPI THERAPY (EXPLAINING THE REASONS) AND MANAGEMENT IN ROUTINE CLINICAL CARE (LOPA II STUDY)

J. Labenz1, G. Labenz2, M. Müller3, D. Stephani4, E. Wilke4

1Abt. Für Innere Medizin, Diakonie Klinikum Abt. für Innere Medizin - Abt. für innere Medizin, Diakonie Klinikum Abt. für Inn, Siegen/Germany
2Reflux Center Siegerland, Burbach/Germany
3Diakonie Klinikum Jung-Stilling-Krankenhaus, Siegen/Germany
4St. Marienkrankenhaus Siegen, Siegen/Germany

Contact E-mail Address: j.labenz@t-online.de

Introduction: Randomized controlled trials report about 30% of GORD patients complain of bothersome remaining symptoms (heartburn, regurgitation) despite PPI. The LOPA (Lost Patients) I Study of 333 GORD patients seen in general practice revealed 46% of patients experienced heartburn or regurgitation symptoms at least twice per week despite PPI. A total of 20% were dissatisfied with their treatment. Few patients had received specific GORD diagnostics or recommended other options (<10%).

Aims & Methods: The LOPA II study is a prospective, multicenter, observational study conducted in 17 general practice clinics. Patients with chronic GORD, taking PPI therapy for at least 1 year, and not satisfied with their treatment were asked to complete a questionnaire. Patients were asked the duration of their PPI therapy, satisfaction with their current condition, frequency of symptoms in the last week, whether they had previously received diagnostic evaluation or surgical consult related to GORD, whether they plan to consult a reflux specialist for further diagnostics, and reasons for dissatisfaction with their current medication treatment. "Lost Patients" were defined as those with a satisfaction score of 1 or 2 on a 5-point Likert scale (1: very satisfied; 2: dissatisfied; 3: doubtful; 4: not at all satisfied; 5: not at all satisfied), at least 2 days in the prior week (53% 4-7 days). 49% reported using additional medication other than their prescribed PPI at least 2 days per week (34% 4-7 days). In patients dissatisfied on PPI, most cited insufficient symptom control (87%) and risk of dissatisfaction. In addition, 31% cited concerns with long-term use of drugs and 27% the need for daily medication. 92% of patients had received an upper endoscopy, 12% had a pH monitoring, 7% manometry, and 9% received prior surgical consult for GORD. Of patients who never received an endoscopy, 58% were not asked if they had any surgical anti-reflux methods, 25% were concerned about possible complications, 18% felt their condition is not serious enough, 6% were recommended against anti-reflux procedure by their doctor.

Conclusion: Chronic GORD patients who are dissatisfied with their PPI therapy are rarely offered specialized GORD diagnostic procedures or treatment alternatives. Half of the patients took medication in addition to PPI to control their reflux. In addition to persistent symptoms, concerns of long-term PPI use and burden of daily medication play a role in patient dissatisfaction with PPI therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1855 PREVALENCE AND PATHOPHYSIOLOGY OF GASTROESOPHAGEAL REFUX DISEASE IN PATIENTS WITH AUTOIMMUNE GASTRITIS

G. Maddalo1, V. Pilotto1, E. Savarino1, C. Orlando1, M. Fassan2, D. Basso3, M. Rugge2, F. Farinati3

1Surgery, Oncology And Gastroenterology, Gastroenterology Unit, University Of Padua, Padua/Italy
2Medicine, University of Padua, Padua/Italy

Contact E-mail Address: gemma.maddalo@gmail.com

Introduction: Autoimmune gastritis (AIG) is characterized by corpus-predominant atrophy with consequent hypo-achlorhydria. In AIG patients dyspepsia is frequent but acid reflux symptoms are uncommon, with few data available regarding gastric or esophageal reflux disease (GERD) in AIG.

Aims & Methods: Our study was aimed to define the prevalence of reflux symptoms in AIG patients, to evaluate the serological, histological and clinical differences in AIG patients with or without reflux symptoms and to investigate the pathophysiology behind these symptoms. One hundred and fifty AIG outpatients were evaluated and 87 were included in the study: 29 AIG patients with reflux symptoms (AIG-R) and 58 without (controls), selected with similar age and gender distribution. AIG-R underwent a pH-impedance (pH/I) and high resolution manometry (HRM). Serum biomarkers, EGDS, histology and anamnestic data were evaluated in both groups. Statistics was performed as indicated.

Results: AIG-R were 19% overall and 28% of them showed esophageal esophageal lesions, with more frequent hiatal hernia than in controls (p < 0.02). pH/I diagnosed acid reflux, esophageal hypersensitivity and a normal pattern in 7%, 28% and 66% patients, respectively. The number of non-acid reflux (NAR) was higher when compared with acid ones (p < 0.0001), moreover NAR and NAR proximal extension were associated with endoscopic lesions (p < 0.03 and p < 0.05, respectively). HRM revealed normal pattern in 62% of patients, minor peristaltic disorders in 24%, and outflow obstruction in 14%. According to the new Rome IV criteria, 55% of patients presented “functional esophageal disorders” (Rome IV-IN). No differences were detected in serological marker and clinical presentation. AIG-R presented lower antrum gastritis (p < 0.03) and a trend toward lower atrophy status (p = 0.07) when compared with controls. The two patient with acid GERD were an OLGA 0 with mild gastrin increase and an OLGA I with short segment Barrett’s esophagus. Lower OLGA stages, lower corpus atrophy (p < 0.02) and more frequent response to PPI (p < 0.05) were associated with Rome IV-OUT status.

Conclusion: AIG-R are not uncommon despite the hypo-achlorhydria. Acid reflux is rare in AIG, while motility and “functional” disorders are frequent. Lower corpus atrophy and OLGA stage in Rome IV-OUT patients, with an OLGA I is likely related to ‘functional’ symptoms of reflux. Treatment should consider use of proton pump inhibitor drugs only in specific patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1856 DIET IS MORE EFFECTIVE THAN ANTACIDS IN RELIEVING REFUX SYMPTOMS IN MILD GARD

M. Furnari1, S. Cento1, S. Toluone1, M. Frazzon1, E. Savarino1, L. Frazzon1, E. Marabott1, G. Bodini1, V. Savarino1, N. De Borghi1, S. Marchi1, P. Minale2

1Department Of Internal Medicine, Gastroenterology Unit, University of Genoa, Genoa/Italy
2Division Of Allergy, University of Genoa, Genoa/Italy
3Division of General and Bariatric Surgery, Department of Surgery, Second University of Naples, Naples/Italy
4Digestive Pathophysiology Unit, Baggiovara Hospital, Modena/Italy
5Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
6Department Of Medical And Surgical Sciences, S. Orsola-Malpighi Hospital, Bologna/Italy
7Dipartimento Di Medicina Interna - Universita Degli Studi Di Pisa, Clinica Medica I/II Compresso S. Chiara, Pisa/Italy

Contact E-mail Address: manuelfurnari@gmail.com

Introduction: Gastroesophageal reflux disease (GERD) is a common disorder commonly managed with antacids and proton pump inhibitors (PPI). Although few studies have been performed to test if a diet is more effective than PPI in mild GERD patients, there is evidence that a diet is more effective than antacids in patients with severe GERD. Aim of the study is to compare the effect of a diet with that of antacids on reflux symptoms in patients with mild GERD.

Methods: Patients with mild GERD who declared at least twice per week heartburn or regurgitation were included in the study. Only patients who used antacids during the study period were considered as control. The diet regime was a low FODMAP diet and it was given for 1 month. The patients were divided into two groups: diet and antacids. The two arms were compared on changes in reflux symptoms during the study period by means of a validated symptomatic questionnaire (RDQ administered at baseline, after antacids course (1 month) and after diet (1 month)). A treatment was considered effective if a 50% improvement in the symptom score was recorded.

Results: After investigations 261 patients out of 500 (52.2%) were excluded because of IBS (60), celiac disease (6), nickel allergy (25), lactose intolerance (60), SIBO (10), and allergy to other foods (20). The remaining 239 patients were diagnosed as affected by mild GERD (median age 47; BMI 24; 132F/107M; no significant differences in age and gender. A total of 20% were dissatisfied with their PPI therapy, satisfaction with their current condition, frequency of symptoms in the last week, whether they had previously received diagnostic evaluation or surgical consult related to GORD, whether they plan to consult a reflux specialist for further diagnostics, and reasons for dissatisfaction with their current medication treatment. “Lost Patients” were defined as those with a satisfaction score of 1 or 2 on a 5-point Likert scale (1: very satisfied; 2: dissatisfied; 3: doubtful; 4: not at all satisfied; 5: not at all satisfied), at least 2 days in the prior week (53% 4-7 days). 49% reported using additional medication other than their prescribed PPI at least 2 days per week (34% 4-7 days). In patients dissatisfied on PPI, most cited insufficient symptom control (87%) and risk of dissatisfaction. In addition, 31% cited concerns with long-term use of drugs and 27% the need for daily medication. 92% of patients had received an upper endoscopy, 12% had a pH monitoring, 7% manometry, and 9% received prior surgical consult for GORD. Of patients who never received an endoscopy, 58% were not asked if they had any surgical anti-reflux methods, 25% were concerned about possible complications, 18% felt their condition is not serious enough, 6% were recommended against anti-reflux procedure by their doctor.

Conclusion: Chronic GORD patients who are dissatisfied with their PPI therapy are rarely offered specialized GORD diagnostic procedures or treatment alternatives. Half of the patients took medication in addition to PPI to control their reflux. In addition to persistent symptoms, concerns of long-term PPI use and burden of daily medication play a role in patient dissatisfaction with PPI therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: A. Bapaye: Speaker—Bristol-Myers Squibb, Consultant—Gastroenterology Asia. All other authors have declared no conflicts of interest.
Radiofrequency ablation (RFA) with or without endoscopic resection (ER) is an established endoscopic treatment of early Barrett’s esophagus (BE). The aim of this prospective single-center center trial was to assess the clinical outcomes of RFA combined with ER for patients with Barrett’s esophagus related neoplasia (BORN) achieving a high clinical response rate of adenocarcinoma 0.12%/year. The current standard of treatment is Endoscopic Resection (ER) of visible nodular lesions and Radiofrequency Ablation (RFA) of flat Barrett’s, which has a success rate of 92%. For refractory cases, wide field ER, cryotherapy and other methods are used, but may have higher adverse events. We hypothesize that thicker Barrett’s tissue is less likely to respond to RFA and have developed methods to precisely measure tissue thickness with Volumetric Laser Endomicroscopy (VLE). These methods may facilitate future studies, correlating tissue thickness with response to therapy and prediction of optimal treatment.

References
2. Schacht S. Schlachter: Schlachter, S is an employee at Ninepoint Medical and manages the data of the Ninepoint registry. Schlachter, S had no influence on the outcomes of the measurements. The measurements were done by Levin.
3. All other authors have declared no conflicts of interest.
Recurrence of endoscopically visible Barrett’s mucosa was seen in 22 patients neo-SCJ with HGD after 22 months, both were treated successfully with ER.

68 patients were included (55 men, median 64 yrs, median BE C5M6). In the overall cancer progression risk and even fewer (7%) of the treatment options that are available to them. Further efforts need to be made to address this and help empower a group of patients who are understandably anxious about their diagnosis.

Table 1: A 14-point based questionnaire which was used to check the understanding amongst patients with Barrett’s Oesophagus (BE–Barrett’s Oesophagus, OAC–Oesophageal adenocarcinoma PPi–Proton pump inhibitor).

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did you receive a letter or see someone in clinic to discuss your diagnosis and plans for future follow-up?</td>
<td>32 (31)</td>
<td>72 (69)</td>
</tr>
<tr>
<td>2. If yes, did you understand this?</td>
<td>15 (47)</td>
<td>17 (53)</td>
</tr>
<tr>
<td>3. Briefly speaking, do you understand what BE is?</td>
<td>43 (41)</td>
<td>61 (59)</td>
</tr>
<tr>
<td>4. Do you understand that chronic acid reflux into the lower oesophagus is the most likely cause of BE?</td>
<td>50 (48)</td>
<td>54 (52)</td>
</tr>
<tr>
<td>5. Are you on a regular PPI?</td>
<td>96 (92)</td>
<td>8 (8)</td>
</tr>
<tr>
<td>6. Have you known what the overall risk of progression to cancer is?</td>
<td>11 (11)</td>
<td>93 (89)</td>
</tr>
<tr>
<td>7. Are you aware of the term ‘dysplasia’ and how this helps to stratify your condition and interval length for surveillance endoscopy?</td>
<td>66 (66)</td>
<td>94 (98)</td>
</tr>
<tr>
<td>8. Do you understand what the rationale for endoscopic surveillance in BE is?</td>
<td>46 (46)</td>
<td>58 (56)</td>
</tr>
<tr>
<td>9. Have you ever been told if you have a short or long segment of BE and the importance of this?</td>
<td>7 (7)</td>
<td>97 (93)</td>
</tr>
<tr>
<td>10. Are you aware of any treatment options for BE?</td>
<td>14 (7)</td>
<td>10 (9)</td>
</tr>
<tr>
<td>11. If yes, do you know when this indicated?</td>
<td>4 (57)</td>
<td>3 (43)</td>
</tr>
<tr>
<td>12. Does or has anyone in your family suffered with BE or OAC?</td>
<td>36 (35)</td>
<td>68 (65)</td>
</tr>
<tr>
<td>13. Do you feel or have you ever felt anxious about your diagnosis of BE?</td>
<td>53 (51)</td>
<td>51 (49)</td>
</tr>
<tr>
<td>14. Do you think it would be useful for your understanding or reduce your anxiety if you either sat down with someone in clinic or spoke to someone over the phone regarding your BE?</td>
<td>82 (79)</td>
<td>22 (21)</td>
</tr>
</tbody>
</table>

Conclusion: We have demonstrated that patients with BE have a relatively poor understanding of their diagnosis and the treatment options that are available to them. Further efforts need to be made to address this and help empower a group of patients who are understandably anxious about their diagnosis. Disclosure of Interest: All authors have declared no conflicts of interest.

P1865 BARRETT’S ESOPHAGUS IS ASSOCIATED WITH TOTAL SERUM ADIPONECTIN IN WOMEN, BUT NOT WITH OTHER INFLAMMATORY OR METABOLIC MARKERS

M. Jovani,1 Y. Cao,2 D. Feskanchik,2 B. C. Jacobson,1 A. T. Chan3

1Clinical And Translational Epidemiology Unit, Massachusetts General Hospital, Boston/United States of America/MA
2Channing Division Of Network Medicine, Department Of Medicine, Brigham and Women’s Hospital and Harvard Medical School, Boston/United States of America/MA
3Boston University Medical Center and Boston University School of Medicine, Boston/United States of America/MA

Contact E-mail Address: manol.jovani@mail.harvard.edu

Introduction: Data on the association between inflammatory and metabolic biomarkers and Barrett’s oesophagus (BE) are scant and conflicting.

Aims & Methods: We aimed to study the association between circulating inflammatory biomarkers (interleukin-6 [IL-6], high-resolution C-reactive protein [cCRP], intra-cellular adhesion molecule [ICAM], tumour necrosis factor receptor-2 [TNF-R2] and metabolic biomarkers ( leptin, adiponectin, C-peptide, insulin-like growth factor 1 [IGF-1], and insulin-like grow factor binding proteins -1, -2 and -3 [IGFBP-1, -2 and -3]) with BE. This was a case-control study, nested within two female-only prospective cohort studies (Nurses’ Health Study 1 and 2) and one male-only prospective cohort (Health Professional Follow-up Study). Participants of provided biennial detailed information on demographic, lifestyle, dietary and medical factors, including endoscopy use. Overall, 80,437 participants, 3,672 included in these cohorts provided a prediagnostic blood specimen between 1989 and 1995. Among these participants, through 2012, we identified 283 cases of BE (163 females and 120 males). Two study physicians, blinded to biomarkers results, reviewed the medical records of patients reporting BE. We matched BE cases to controls (1:2) for age and period of BE enrollment. We used multivariable conditional logistic regression models, adjusting for known and putative risk factors for BE, to assess the association between each biomarker and the risk of BE. We used the lowest quintile as reference, and assessed linear trend across exposure categories using the median of each quintile as a continuous variable.

Results: In women, plasma adiponectin was significantly associated with BE (p_trend = 0.01). When compared to the lowest quintile (Q1), the multivariate odds ratio (OR) for the highest quintile (Q5) of adiponectin was 0.39 (95%CI 0.17, 0.88). This association was not materially altered after further adjustment.
for lepin. The association did not differ according to subgroups defined by BMI (p-trend = 0.82). Use of folic acid in young men, we observed that adiponectin was not associated with BE. However, we observed an OR of 0.41; 95%CI 0.17, 0.99 comparing extreme quintiles of IGFBP-3 (p-trend = 0.11). Among both women and men, we did not observe any significant associations between inflammatory biomarkers and metabolic biomarkers are associated with risk of BE. Only adiponectin was associated with a decreased risk of BE in women but not in men. These findings may serve to provide input for future risk assessment for BE and shed light on potential mechanisms of its pathogenesis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1866 OUTCOMES OF TREATMENT OF PATIENTS WITH EARLY-STAGE ADENOCARCINOMA OF THE ESOPHAGUS WITH INCIENT SUBMUCOSAL INVASION, RETROSPECTIVE ANALYSIS OF 19 CASES FROM A TERTIARY REFERRAL CENTER IN THE UK

B. Eross1, C. Clishby2, C. Gordon3

1Gastroenterology, Royal Bournemouth Hospital, Bournemouth/United Kingdom
2Endoscopy, Royal Bournemouth Hospital, Bournemouth/United Kingdom

Contact E-mail Address: xerobal@yahoo.it

Introduction: Endoscopic mucosal resection (EMR) is an established diagnostic and treatment tool in the management of Barrett’s oesophagus (BO) with early neoplastic lesions. BO may prove to be a matter of future research on the natural history in the patients, in whom the EMR’s histologic assessment identifies early-stage adenocarcinoma of the oesophagus with incipient submucosal invasion (pT1b sm1).

Aims & Methods: We have conducted a retrospective analysis using our electronic database for endoscopic procedures for patients with BO, who underwent EMR from October 2010 to December 2016. We investigated the size of the EMRs, the complication rates of the EMRs, the histological features and the resection margins of the EMR specimens and also the outcomes with the mortality.

Results: A total of 99 patients underwent 134 EMR procedures, and the histology identified early adenocarcinoma with incipient invasion of the submucosa in 25 patients. 23 (92%) were male, the mean age at the EMR was 71 years (SD: 8.1). In all 25 EMR 9 (36%) patients had a single piece, 7 (28%) patients 2 piece, 7 (28%) patients 3 piece and 4 (16%) patients 4 piece EMR. The median length of the circumferential and maximum extent of the BO segments were 2 and 5 cm respectively (interquartile range (IQR) 2–4). We observed 6 (24%) intra-procedural bleedings and 2 (8%) patient needed admissions with post procedural dural bleedings and 2 (8%) patient needed admissions with post procedural 

Conclusion: The pathological diagnosis was 8 SCC, 2 high grade intraepithelial neoplasia. There was 8 SCC, 2 high grade intraepithelial neoplasia. There were 9 (28%) of patients with cancer, 18 months after the EMR, and the 9 (75%) surviving patient are all free from cancer, and the outcome is unclear. In our hospital, we have performed over 1300 Per-Oral Endoscopic Myotomy procedures for esophageal achalasia and related upper gastrointestinal diseases. In our center, we diagnosed and treated 10% of patients with esophageal cancer in 3 (33.3%) of the surgical specimens. Radical radio-chemotherapy was given in 1 (1.7%) patient and 3 (33.3%) patients did not have radical treatment for clinical reasons. There were 10 (40%) patients without cancer invasion of the EMR resection margins, of these 4 (40%) had oesophagectomy and 1 (10%) had radical radiotherapy. The histologic assessment of these surgical specimens showed residual cancer in 3 (30%) cases and high-grade dysplasia in 1 (10%) case. Of the 25 patients 5 (20%) met the criteria and had radio frequency ablation of the residual Barrett’s oesophagus. Of the 13 (52%) patients who have had oesophagectomy 1 (7.7%) patient died of the deterioration precipitated by the oesophagectomy, and sadly in this case the oesophagectomy specimen did not show residual cancer. Of the 12 (48%) patients who had not had oesophagectomy 3 (25%) died since their EMR, 1 (8.3%) of cardiac arrest, 1 (8.3%) of chronic obstructive pulmonary disease and 1 (8.3%) of advanced oesophageal cancer, 18 months after the EMR, and the 9 (75%) surviving patient are all free from cancer on follow up investigations, one after radical chemo/radiotherapy.

The median survival of all 21 (84%) patients currently alive is 25 months (range: 2–68 months; SD: 22.2).

The median survival of all 21 (84%) patients currently alive is 25 months (range: 2–68 months; SD: 22.2).

In this retrospective analysis we have found that the clinical outcomes are very difficult to predict for patients with early adenocarcinoma and incipient invasion of the submucosa. Clinical decision making remains very challenging and has to be individualised for all patient, until further in depth studies gives us more useful prognostic factors.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1867 THE USE OF ENDOCYSTOSCOPY FOR THE EARLY DETECTION OF ESOPHAGEAL NEOPLASMS

S. M. Chan1, P. Y. W. Chiu1, A. Y. B. Teoh1, H. C. Yip1, V. Wong1, E. Ng2, J. Y. Lau2

1Surgery, The Chinese University of Hong Kong, HK/Hong Kong PRC
2Institute of Digestive Disease Room 94020 7/F, Lai Che Woo Clinical Sciences Building, Prince of Wales Hospital, Shatin, N.T., Hong Kong, Hong Kong PRC

Contact E-mail Address: shannomehan@surgery.cuhk.edu.hk

Results: From July 2015 to March 2017, forty-four patients were included in the study. Seventeen of the forty-four (38.6%) patients had histological confirmed cancer of the esophagus. There were sixteen patients who had normal finding and nine patients with esophagitis. The positive predictive value for malignancy (ECA 4 and 5) was 89.5%; the negative predictive value was 100%. Sensitivity was 100% and specificity was 92.6%. Similar findings were noted with IPCL on magnifying NBI. The positive predictive value for malignancy (IPCL 4 and 5) was 100%; the negative predictive value was 100%. Sensitivity was also similar at 100% and specificity 92.6% respectively. To compare the diagnostic accuracy of endoscopicystoscopy and magnifying NBI, the McNemar test was performed. The McNemar chi-squared statistic is NaN, and the McNemar chi-squared statistic with continuity correction of 0.5 is infinity, meaning that the two tests have the same diagnostic accuracy.

Conclusion: Endoscystoscopy had a high positive predictive value and sensitivity for esophageal malignancy. Its diagnostic accuracy was comparable to magnifying NBI. It may be helpful as an adjunct for better characterization of esophageal lesions. However, further studies on interobserver variability is required.

Introduction: Early detection of esophageal cancers can significantly reduce the years of suffering of patients and reduce the mortality. A new endoscopic technique incorporating the endoscystoscopy function into a magnifying endoscope has been designed. Previously, Inoue et al have published a pilot trial on evaluating the use of this endoscystoscopy in various types of benign and malignant pathologies of the esophagus. An endoscystoscope was proposed. The sensitivity and specificity of this classification system was evaluated.

Aims & Methods: All consecutive patients who had esophagogastrroduodenoscopy (EGD) arranged for screening of the esophagus during the period July 2015 to March 2017 were included in the study. EGD with narrow band imaging and endoscystoscopy were performed in these patients. During the procedure, the esophageal mucosa was stained with 0.5% methylene blue and then with crystal violet. The endoscystoscopic findings were graded from 1 to 5 according to the Inoue et al’s ECA classification. The esophageal mucosa was also evaluated with narrow band imaging (NBI) and the findings were classified according to the Intrapapillary capillary loop (IPCL) pattern classification. These findings were compared against the gold standard of histopathological examination which was based on the Vanura classification.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1868 CLINICAL OUTCOMES OF ENDOSCOPIC RESECTION FOR ACHALASIA-ASSOCIATED SUPERFICIAL ESOPHAGEAL CANCER


Gastroenterology, Showa University Koto-Toyosu Hospital, Tokyo, Japan

Contact E-mail Address: nishikawak@med.showa-u.ac.jp

Introduction: Esophageal achalasia is considered to be a high-risk factor for superficial esophageal cancer. But there are few reports of endoscopic resection for this cancer, and the outcome is unclear. In our hospital, we have performed over 1300 Per-Oral Endoscopic Myotomy procedures for esophageal achalasia and related upper gastrointestinal diseases. In our center, we diagnosed and treated 10 achalasia-associated superficial esophageal cancers in patients with achalasia. We performed endoscopic resection for all cases and report relatively long-term outcome.

Aims & Methods: We aimed to evaluate clinicopathological findings and outcomes of endoscopic resection for 10 achalasia-associated superficial esophageal cancer. This is a case series study at our hospital. Between August 2010 and February 2017, 10 achalasia patients with superficial esophageal cancer underwent endoscopic resection. We performed in all cases upper gastrointestinal endoscopy using the narrow band’s solution and narrow band imaging, and we included all patients that had early cancers that were eligible for endoscopic resection in this series. At 2 and 12 months after treatment, we performed follow-up endoscopy in all cases. After this, we performed long-term endoscopic follow-up every year. In the case that the tumor invasion depth is to the muscularis mucosa (MM) on histopathology, we performed endoscopic follow-up every 6 months and CT scan.

Results: There were 6 men and 4 women and their average age was 61.7 years. 8 patients were diagnosed with lesions before POEM. We performed endoscopic resection (ESD/EMR;9/1) in all cases after POEM. None of the patients had a severe adverse event. The mean tumor diameter was 30mm (range: 5–80mm). The pathological diagnosis was 8 SCC, 2 high grade intraepithelial neoplasia. Out of the SCC cases, 7 were found with superficial lesion with depth of Tis-EP to T1a-LPM, and 1 with depth of T1a-MM, without lymphatic invasion(0) or venous invasion(0). Follow-up surveillance mean term was 32 months (range: 1–
only patient who had venous involvement was 92 years old, and followed up without an additional therapy. 6. Local recurrent rate was 0%. 7. LNM rate of EP and SEP was 0% and 5.7% (2/35), respectively. One of two patients who had LNM was a 76-year-old male. He had SEP SCC without lymph duct involve- ment. A cervical LNM was diagnosed 6 months after ESD. Lymph node dissec- tion and then radiotherapy (CRT) was performed for the patient. The patient died of other disease without recurrence of pharyngeal SCC. The other patient also had a cervical LNM and treated by lymph node dissection + CRT. The patient is alive without recurrence for 10 years after ESD. 8. Prognosis No patients died of pharyngeal SCC or ESD.

Conclusion: ESD is a safe and useful treatment for superficial pharyngeal SCC. However, surveillance of LNM is important for the patients who had SEP SCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1869 USEFULNESS OF TRIAMCINOLONE INJECTION TO PREVENT STRICURE AFTER CIRCUMFERENTIAL ESOPHAGEAL ESD: EP VS. SEP GRADE A

T. Oyama1, A. Takahashi1
1Endoscopy, Saka Central Hospital Advanced Care Center, Nagano/Japan

Contact E-mail Address: oyama@eceral.ocn.ne.jp

Introduction: ESD is a standard treatment for superficial esophageal cancer in Japan. Stricture is one of important complication of esophageal ESD, and it makes quality of life of the patient worse. Usefulness of Triamcinolone (TA) injection to prevent stricture after semi-circumferential ESD has been reported. However, usefulness of TA injection after circumferential esophageal ESD is still unclear.

Aims & Methods: The aim of this study is to clarify the usefulness of triamcinolone injection to prevent stricture after circumferential ESD. A total of forty-four patients treated by circumferential esophageal ESD from 2004 to 2016 in Saku Central Hospital Advanced Care Center were enrolled to this retrospective study. The patients treated from 2004 to 2009 were followed up without TA injection (Non-TA group), and TA injection was performed for the patients after 2009 (TA group). The number of patient in Non-TA and TA group was 16 and 28, respectively. Age of both groups were 65 (30-83) and 61 (42-82) years old. The length of circumferential resection was 75 (50-10) and 75 (55-111) mm, respectively. There was no significant difference in the background of both groups. Fifty mm TA was injected into submucosal layer just after ESD, and TA injection was repeated in two-weeks interval by the ESD ulcer healed. When the length of circumferential ESD was 50 mm or less, 100 mg Triamcinolone was injected just after ESD.

Results: 1. Endoscopic balloon dilatation (EBD) was performed when the scope couldn’t pass the ESD ulcer. The primary endpoint was the number of balloon dilation. The secondary endpoints were duration from ESD to ulcer healing, and the difference between Barrett’s esophagus adenocarcinoma (EAC) and squamous cell carcinoma (SCC).

Results: 1. Number of EBD in Non-TA and TA group were 20 (13-33) and 5.1 (0-23), respectively (p = 0.01). Duration from ESD to ulcer healing were 10 (3-24) and 3.1 (2-5) days, respectively (p = 0.04). Complications (perforation, Median forceps use time was 73 secs (range: 8-1200 secs), and the median number of antithrombotic agents. Hemostatic forceps were used for 116 lesions (25%), and continuous use of antithrombotic agents, lesion location, (upper or middle or lower), lesion size (<2 cm or ≥2 cm), lesion circumferential length (<3/4 or ≥3/4), and the endoscopist’s experience of esophageal ESD (<40 or ≥40 procedures).

Results: Twenty-nine ESCNs (6%) were treated by ESD without discontinuation of antithrombogenic agents. Hemostatic forceps were used for 116 lesions (25%), median forceps use time was 73 secs (range: 8-1200 secs), and the median number of forceps application during procedures was 2 (range: 1-9 times). Of these, 41 lesions (9%) met our definition for longer hemostatic time. Univariate analysis revealed that lesion size (≥2 cm), lesion circumference (<3/4, ≥3/4), and the endoscopist’s experience (<40 or ≥40 procedures).

Results: Twenty-nine ESCNs (6%) were treated by ESD without discontinuation of antithrombogenic agents. Hemostatic forceps were used for 116 lesions (25%), median forceps use time was 73 secs (range: 8-1200 secs), and the median number of forceps application during procedures was 2 (range: 1-9 times). Of these, 41 lesions (9%) met our definition for longer hemostatic time. Univariate analysis revealed that lesion size (≥2 cm), lesion circumference (<3/4, ≥3/4), and the endoscopist’s experience (<40 or ≥40 procedures).

Contact E-mail Address: oyama@eceral.ocn.ne.jp

Disclosure of Interest: All authors have declared no conflicts of interest.

P1870 OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL PHARYNGEAL SQUAMOUS CELL CARCINOMA

T. Oyama1, A. Takahashi1
1Endoscopy, Saka Central Hospital Advanced Care Center, Nagano/Japan

Contact E-mail Address: aurevoireurope@yahoo.co.jp

Introduction: Superficial pharyngeal squamous cell carcinoma (SCC) has been increasing in Japan. And, such SCC could be treated by endoscopic submucosal dissection (ESD). However, the outcome of pharyngeal ESD is unknown.

Aims & Methods: The aim of this study is to clarify the outcome and prognosis of pharyngeal ESD treated by ESD. 89 pharyngeal SCC in 68 patients treated by ESD from Jan. 2006 to Jan. 2017 in Saku Central Hospital Advanced Care Center were enrolled to this retrospective study. CT and neck US were performed for preoperative staging. All ESD were performed using a Hope knife under general anesthesia with tracheal intubation. Clipp with line or forceps was used to make traction during ESD. Annual endoscopy, CT scan and neck US were performed as surveillance after ESD, and these examinations were recommended twice a year for the patients who had subepithelial (SEP) SCC. Male-Female was 67:1. Mean age was 67.1 (40-92). Mean size of tumor and specimen were 12.9 (5-25) and 28.6 (5-65) mm, respectively.

Results: 1. En bloc resection rate was 100%. 2. Complication: Delayed bleeding rate was 1.5% (1/68). Re-intubation was needed for the hemostasis. Dysphasia was shown in 4.4% (3/68). Two patients had mild dysphasia and improved in two weeks. The remaining one patient had severe dysphasia. The patient had a big SCC, 50 mm in size, and the SCC extend from light piriform sinus to ary-epiglottic fold. We could keep the voice function. However, eating was impossible for mis-swallowing. 3. Invasion depth: Epithelial (EP) and subepithelial (SEP) SCC were 60% (53/89) and 39% (35/89), respectively. One case was inflammation. 4. The rate of lymph-duct involvement of EP and SEP were 0% and 5.7% (2/35), respectively. LNM was found in one of two patients who had lymph duct involvement, and treated by lymph node dissection. The other patient was followed up without additional therapy, and free from LNM for one year. 5. Venous involvement of EP and SEP were 0% and 2.9% (1/35), respectively. The
Introduction: While definitive chemoradiotherapy (CRT) showed high efficacy for esophageal squamous cell carcinoma (ESCC), approximately 40% of patients develop local failure, resulting in poor long-term survival. However, there is no definitive biomarker which is useful to predict survival outcome after CRT for ESCC. Several studies have investigated the correlation of expression of CD24, cytokeratin 4 (CK4), and podoplanin (PDPN) with prognosis in some malignant tumors which underwent surgical resection. However, it remains unclear whether the expression of these proteins can predict the outcome of CRT for patients with ESCC.

Aims & Methods: The aim of this study was to clarify the predictive values of expression of CD24, CK4, and PDPN for ESCC patients who received CRT. Among patients with ESCC who received CRT or curative esophagectomy with extended lymph node dissection (OPE) as an initial treatment between 2005 and 2013, 49 patients were selected for the following criteria: clinical stage II, III (UICC-TNM classification 6th edition), age of 75 years old or younger, ECOG Performance Status 0-1, and no prior or concurrent other cancers. The method of immunohistochemistry (IHC) was utilized to examine the protein expression of CD24, CK4, and PDPN in pretreatment biopsy specimens of ESCC. The cut-off values for CD24, CK4, and PDPN expression were used hazard ratio for overall survival (OS). The prognostic factor of CD24, CK4, and PDPN expression were statistically analyzed. OS was calculated from the date of CRT or OPE to the date of death or last follow-up, using the Kaplan-Meier method. The survival predictors identified by univariate analysis was assessed by multivariate analysis using a Cox’s proportional hazards model.

Results: 148 ESCC patients (CRT group, n = 83; OPE group, n = 65) were analyzed. In the CRT group, 40 patients had stage II and 43 patients had stage III, and the 5-year OS was 52%. In the OPE group, 32 patients had stage II and 33 patients had stage III, and the 5-year OS was 66%. By univariate analysis, there were three independent variables for OS in differences between two groups and OPE group. The cut off value for CD24, CK4, and PDPN expression were 20%, 10%, and 20%, respectively. While the expression equal to the cut off value or more was defined as strong, the expression less than the cut off value was defined as weak. The frequency of strong protein expression was 50% for CD24, 12% for CK4, 65% for PDPN, respectively. In the CRT group, the OS of patients with weak CD24 expression was significantly better than that of patients with weak CD24 expression (P = 0.015; strong/weak 5-year: OS 65%/43%). On the other hand, the strong CD24 expression was poorer OS comparing with patients with weak expression in the OPE group, however there was no significant difference (P = 0.286; strong/weak 5-year: OS 77%/74%). As for patients with strong CD24 expression, there was no significant difference between CRT group and OPE group (p = 0.446), however there was significant difference between CRT and OPE group in patients with weak CD 24 expression (p = 0.009). There were also no significant differences of the OS based on expression of CK4 or PDPN between the CRT and OPE group, respectively. Multivariate analysis also showed the strong CD24 expression in CRT group (P = 0.012; HR = 2.787; 95%CI: 1.253-6.200) as an independent variable for favorable outcome.

Conclusion: CD24 expression was significantly associated with the survival outcome of ESCC when they were treated with CRT. Furthermore, weak CD24 expression might be a useful predictive biomarker of poor outcome for CRT in ESCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1873 ENDOSCOPIC TREATMENT OF PATIENTS WITH HIGH-RISK EARLY ESOPHAGEAL CANCER
M. Kollar1, J. Krajčová2, J. Maluška1, E. Honsouš1, A. Pazdro1, T. Haruštik3, D. Kodetova1, Z. Vackova1, J. Spícak2, J. Martinec2
1Clinical And Transplant Pathology, Institute for Clinical and Experimental Medicine, Prague-Czech Republic
2Department Of Interventional Radiology, Institute for Clinical and Experimental Medicine, Prague-Czech Republic
3Department Of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague-Czech Republic

Contact E-mail Address: marek.kollar1 seznam.cz

Introduction: Endoscopic treatment is a standard therapeutic approach for patients with Tla early esophageal cancer (EEC). In patients with ‘high-risk’ Tla cancer, endoscopic resection (ER) is recommended as the first-line treatment. In patients with any submucosal (sm) invasion (Tlb), surgery is recommended as a standard of care. However, recent data suggest, that endoscopic treatment might be curative in selected patients with ‘high-risk’ EEC.

Aims & Methods: The aim of this study was to assess outcomes of endoscopic treatment in patients with ‘high-risk’ EEC. ‘High-risk’ cancer was defined as any cancer with sm invasion or mucosal cancer with at least one of following: poor differentiation (G3/G4), invasion to blood (A+) or lymphatic vessels (L+) and high tumor cell dissociation (TCD3). The main outcome measurement was tumor-free survival.

A single-center, retrospective analysis of prospectively collected data. Patients with EEC underwent endoscopic resection (ER) or endoscopic submucosal dissection (ESD). Based on histopathological staging, patients with ‘high-risk’ EEC or Tla cancer were referred for surgery. The patients continued in endoscopic treatment consisting of further sessions of ER and/or radiofrequency ablation if necessary. The patients have been followed up for a median of 39 months (range 2-156).

Results: A total of 56 patients with ‘high-risk’ EEC underwent endoscopic treatment: 21 patients (41%) had Tla cancer with ‘high-risk’ features and 35 patients (59%) had Tlb cancer with sm invasion (sm1: 15, sm2: 9, sm3: 11); 45 patients had adenocarcinoma (EAC), 11 patients had squamous carcinoma (SCC); 19 patients were referred for component with severe inflammation (37%) continued the endoscopic treatment. Complete local remission (CLR) of neoplasia was achieved in 35/37 patients (95%). Two patients without CLR continued endoscopic therapy with palliative intent. Tumor generalization occurred in 2 patients (one of them achieved CLR). 24 months after endoscopic treatment (both patients had sm3 invasion, A+, L+) and these patients are undergoing oncological treatment. All remaining patients with CLR (n = 33) have experienced neither local relapse nor generalization. One patient had to undergo surgery due to endoscopy related perforation. Tumor-free survival was 89% (CI 79–99%) in patients treated endoscopically and endoscopy related mortality was 0% (0/37). Among 19 patients who were referred for esophagectomy, one patient presented with tumor generalization revealed during the operation. The remaining 18 patients underwent esophagectomy; local residue of malignancy were present in 5/18 patients (28%). Lymph node (LN) metastases have not been detected in any patient among the 337 examined LNs. Surgery related mortality was 6% (1/18).

Conclusion: Endoscopic treatment provides long-term remission or cure in a considerable number of patients with ‘high-risk’ EEC and it may thus represent a valid alternative to surgery. Brooding of indications for radical endoscopic treatment of early EEC should be reconsidered.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1874 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASONOGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND DUCT INVOLVEMENT ACCOMPANYED BY EARLY ESOPHAGEAL CANCER
Y. Jie, L. Ying
Digestive Department, The Affiliated Drum Tower Hospital, Nanjing University Medical School, Nanjing, Jiangsu Province, Ch, Nanjing/China
Contact E-mail Address: 13770755008@126.com

Introduction: Normally, resided within the submucosal layer of esophagus, each esophageal submucosal gland will culminate in a single duct. The esophageal submucosal gland ducts (ESMGDs) can traverse the subepithelial connective tissue and muscularis mucosa, and deliver the acinar secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement accompanied by early esophageal cancer have not been comprehensively evaluated so far, and the series study focusing on endoscopic ultrasonography (EUS) is needed to assess the diagnostic value of EUS for diagnosing ESGMID.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing ESGMID accompanied by early esophageal cancer, which were suggested by conventional endoscopy or biopsy, this study retrospectively analyzed the outcomes of consecutive patients with early esophageal cancer diagnosed in the Endoscopy Center at the Affiliated Drum Tower Hospital, Nanjing, China from September 2009 to November 2016. The clinical data of 519 patients were included in this study, and of them all had already underwent EUS combined with Endoscopic Submucosal Dissection(ESED). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD.

Results: According to the pathological results, all patients (371 males and 148 females, with a mean age of 67.5±4.5 years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESGMID by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESGMID, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESGMID were diagnosed exactly by EUS. Another six cases were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intraepithelial neoplasia. One case was excluded as ESGMID due to the insufficient evidence, however, the EUS values for sensitivity and specificity for the diagnosis of ESGMID were 85.0% (34/40) and 99.8% (478/478) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (474/476).

Conclusion: The esophageal submucosal gland duct involvement is a kind of lesion performed as a hypoechoic sonographic pattern located in the thickened mucosa. EUS has a satisfactory diagnostic accuracy for ESGMID as well as good sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.
OBJECTIVE: To assess the NLR predictive strength in a retrospective series of two high-volume centers.

METHODS: We included 280 patients. The analysis of NLR as predictor of pathological complete response (pCR) showed a OR of 0.963 (95% CI 0.531–1.746, p = 0.901) and 1.161 (95% CI 0.647–2.081, p = 0.671) considering as cut-off values 2,5 and 3 respectively. In our large series, NLR did not result as a predictive marker neither in terms of Overall Survival nor in terms of Disease Free Survival (p = 0.997 and p = 0.672 respectively).

RESULTS: Our results did not confirm NLR as a significant marker of pCR. Moreover, the survival analysis did not reveal significant differences using NLR as a retrospective marker. The retrospective analysis of the complex of the disease, the absence of a validated and pre-defined NLR cut-off values 2,5 and 3 respectively. In our large series, NLR did not result as a predictive marker neither in terms of Overall Survival nor in terms of Disease Free Survival (p = 0.997 and p = 0.672 respectively).

CONCLUSION: We determined the effect of daily treatment with vehicle or acute gastric lesions but the contribution of CO to the mechanism of gastric mucosal injury is not clear. CO-releasing molecules (CORMs) represent a new class of compounds, named CO-releasing molecules, with antiproliferative, anti-inflammatory and immunomodulatory properties. CORMs are produced endogenously in the body as a pharmacological tool to assess the physiological role of CO under experimental conditions. CORM-2 was implicated in gastric protection against formation of acute gastric lesions but the contribution of CO to the mechanism of gastric ulcer healing has not been fully elucidated.

Aims & Methods: We determined the effect of daily treatment with vehicle or CORM-2, on healing of preexisting gastric ulcers induced by serosal application of acetic acid (acetic acid area = 28 mm²) in rats. Our second goal was to examine the mechanism of CO released from its donor by the determination of the CORM-2-induced alterations in gastric blood flow (GBF) at ulcer margin, the parameters of oxidative stress and the gastric mucosal expression of pro-inflammatory and anti-inflammatory factors. CORM-2 was implicated in gastric protection against formation of acute gastric lesions but the contribution of CO to the mechanism of gastric ulcer healing has not been fully elucidated.

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P1878 PROTON PUMP INHIBITORS INAPPROPRIATE USE IN PATIENTS ADMITTED IN A TERTIARY GREEK HOSPITAL CREATES SIGNIFICANT DIRECT COSTS BURDEN AND EXPOSURE OF PATIENTS TO THE RISK OF UPPER GASTROINTESTINAL COMPLICATIONS

Aims & Methods: We aimed to evaluate the frequency of inappropriate PPI administration in hospitalized patients, to measure the direct in-hospital costs of PPI overuse and to calculate the number of patients exposed to the risk of upper gastrointestinal (UGI) complications due to medication underuse. This was a prospective, cross-sectional, prescription-indication drug-utilization, chart-review study in hospitalized patients with follow-up until discharge, in a tertiary hospital in Athens, Greece. We recorded data of all patients admitted (intensive care, psychiatric, pediatric, obstetrics and day clinic admission) were excluded) during three consecutive on-call days of the hospital in March 2017 regarding PPIs utilization before admission, during hospitalization and at discharge. We calculated the total in-hospital costs of PPIs overuse and the number of patients at risk of UGI complications due to PPIs underuse for 1 year period, using a simulation model.

Results: We included data from 470 patients aged 67 ± 19 yrs; 32.5% were prescribed PPI on admission, 65.9% during hospitalization and 72.8% at discharge. PPIs overutilization was detected in 15.7%, 41.3% and 12.6% of the patients before, during and after the admission, while medications underutilization was detected in 10.2%, 8.1% and 9.5% of them, respectively. Admission at internal medicine and orthopedics clinics was associated with the highest unadjusted ORs (1.68 [95% CI 1.63–1.72] and 1.68 [1.59–1.78]) for PPIs misuse. 80% of the 193 over treated patients received PPIs iv (80% of them od, 20% bid) while the rest were treated with PPIs per os (90% of them od, 10% bid) during hospitalization. This accounts for 1460 PPI iv and 344 PPI per os doses inappropriately given during the observation period. Taking into account in our simulation model that there are 90 on-call days of the hospital in March 2017, we calculated the direct hospital costs burden of inappropriate PPIs use at 154940 euros per year. Using the same model, 1200 patients would be at risk of UGI complications annually, due to under prescription of appropriate PPIs use. Using the same model, 1200 patients would be at risk of UGI complications annually, due to under prescription of appropriate PPIs use for 1 year period, using a simulation model.

Conclusion: Hospitalization does not represent an opportunity for optimization of PPIs administration in hospitalized patients, to measure the direct in-hospital costs of PPI overuse and to calculate the number of patients exposed to the risk of upper gastrointestinal (UGI) complications due to medication underuse. This was a prospective, cross-sectional, prescription-indication drug-utilization, chart-review study in hospitalized patients with follow-up until discharge, in a tertiary hospital in Athens, Greece. We recorded data of all patients admitted (intensive care, psychiatric, pediatric, obstetrics and day clinic admission) during three consecutive on-call days of the hospital in March 2017 regarding PPIs utilization before admission, during hospitalization and at discharge. We calculated the total in-hospital costs of PPIs overuse and the number of patients at risk of UGI complications due to PPIs underuse for 1 year period, using a simulation model.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1880 ENDOSCOPIC RESECTION OF ADVANCED AMPULLARY ADENOMAS: A SINGLE-CENTER 14-YEAR RETROSPECTIVE COHORT STUDY

S. E. Van Der Weil, J.W. Poley, M.J. Bruno, A.D. Koch

Aims & Methods: The aim of our study was to evaluate the technical success, complications and recurrence of endoscopic resection for treating patients with ampullary adenomas with intraductal extension (AIE), and patients with lateral spreading adenomas (LSA). Between January 2002 and November 2016, all ampullary adenomas referred to the Erasmus MC, Rotterdam, for endoscopic resection of an ampullary lesion were retrospectively identified. Cases were selected by using ENDOBASE and we provided a search in the our local PALGA database. We included patients with a histological diagnosis of adenoma. Endoscopic resection was performed by 5 experienced endoscopists.

Endoscopic success was defined as complete excision of the adenoma, irrespective of the number of attempts, and in the absence of recurrence. All patients underwent endoscopic follow-up. Early and late complications were registered.

Results: We included 84 patients, 58 patients (67%) had an adenoma confined to the ampulla (ACA), 17 patients (20%) had a LSA and 11 patients (13%) were treated for adenomas that demonstrated growth pattern with intraductal exten sion. Fifty-five percent of the patients were men and the median age was 65.4 years (range 32–89). The median lesion size was 24.6mm (range 5–80) for patients with ACA, 34.8 mm (range 23–50) for LSA and 16.3 mm (range 10–20) for patients with an AIE (P = 0.003). Complications occurred in 26 patients (30.9%), of which hemorrhage was most seen in 17.9%, followed by perforation in 5.9% of the patients. Complications were equally divided over these three groups (P = 0.775). The mean follow-up duration was 31.1 months (range 0–129) for ACA, 23.1 months (range 0–127) for LSA and 11.9 months (range 0–37) for IEA (P = 0.136). Endoscopic resection was curative in 87.5% of patients with a localized adenoma, 82.3% in patients with a lateral spreading adenoma and in only 9.1% of patients with an intraductal extended tumor (P < 0.000). Recurrence occurred in 9 patients (10.7%), 5 of them had a localized adenoma, 3 patients with a lateral spreading adenoma and 1 patient with an intraductal extended adenoma (P = 0.875).

Conclusion: Endoscopic ampullectomy is a safe and successful treatment in patients with an adenoma with or without a lateral spreading growth pattern. In case of an intraductal extended adenoma endoscopic success rates are significantly lower.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1879 CONTINUOUS INCREASE IN PREVALENCE OF FUNDIC GLAND POLYPS WITH THE LENGTH OF PROTON PUMP INHIBITORS USE. IS THERE ANY CLINICAL CONSEQUENCE?

R. Kroupa1, M. Dastych1, S. Koncny1, J. Dolinsa1

1Department Of Intestinal Medicine and Gastroenterology, University Hospital and Faculty of Medicine Masaryk’s University, Brno/Czech Republic

Introduction: Proton pump inhibitor (PPI) usage is associated with an increased risk of development of fundic gland polyps (FGP). The trend of change in the prevalence with increasing length of PPI exposure over 5 years is not known. Theoretical risk of FGP seems to be very low for clinical consequence in management.

Aims & Methods: To evaluate the relationship between the length of PPI use and risk of fundic gland polyps. Prospective cohort study in patients referred for upper gastrointestinal endoscopy between years 2015–2016 was performed. The length of PPI use was ascertained from direct patient interview and confirmed by the visual review of the clinic records. The study was in history not continuing at the time of endoscopy was also inquired. FGP were determinated both endoscopically and histologically. Odds ratios for subsequent intervals of length of PPI use were calculated. Clinically relevant complications—dysplasia and bleeding from large polyps were recorded.

Results: During study period 1525 patients (mean age 59.2 years, 53% male) were included. Only 612 (40%) of patients had no history of any PPI use. Fundic gland polyps were identified in 170 patients (11%) and only 13 of them (7.6%) were with complications. The prevalence of FGP in subgroup of patients according to the length of PPI use was: 10.6% of 161 patients using PPI less than 1 year, 9.4% of 405 (1–4 years of PPI), 25.2% of 230 (5–9 years of PPI), 35.1% of 94 (10–15 years of PPI) and 47.6% of 23 patients using PPI more than 15 years. The appropriate odds ratios were: 5.4 (CI 2.6–11.4), 4.8 (CI 2.5–9.1), 15.5 (CI 8.3–29.0), 24.9 (CI 12.4–49.5) and 42.2 (CI 15.7–113.1) respectively, all with statistical significance (p < 0.000). Only 1 case of low grade dysplasia within FGP was observed in the patient with familiar adenomatous polyposis. Polyps larger than 15 mm with signs of bleeding determined as a cause of sideropenic anemia were diagnosed in 6 patients.

Conclusion: The prevalence of FGP is permanently growing during prolonged use of PPI. Complex source of informations regarding history of PPI use identified quite low proportion of patient with FGP and without prior use. Rather rare complications like bleeding from FGP might be clinically significant in increasing number of long term PPI users. The requirement of repetitive endoscopies and therapeutic interventions may burden gastroenterologists and sources.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Conclusion:

An expanded indication criteria using data from JCOG0607. The major inclusion criteria were as follows: 1) histologically proven intestinal adenocarcinoma; 2) cT1aN0M0; 3) lesion without finding of ulcer (UL negative) and >2 cm in size, or UL positive and ≤3 cm in size; 4) age 20-75. ESD were performed by certified endoscopists or under the supervision of certified endoscopists. There were 207 lesions, 105 patients (27.7%) were classified in difficult case group. The final diagnostic yield was 78.8% (260/328) in UL negative and 66.0% (67/102) in UL positive cases, respectively. The diagnostic yield of the different passes, the diagnostic yield was: 61%, 67% and 78% with the first, second, and third FNB pass, respectively. In evaluation of tissue quantity and quality of FNB specimens, the mean tissue length was 7.3 ± 5.2 mm, with a mean tumor size and tissue proportion between 51 to 75% of the total tissue processed (determined as the percent of the surface are occupied by lesion over the surface area of the entire tissue on one slide). No complications occurred during the study period.

Conclusion: FNB using a novel core needle system is safe and effective for diagnosis of gastric submucosal tumors. When performed without on-site cytologic evaluation, EUS-FNB has a higher diagnostic yield than FNA and may represent an advance for endoscopic ultrasound guided gastrointestinal biopsies.

Disclosure of Interest: T. Berzin: Consultant for Medtronic
D. Pleskow: Consultant for Medtronic
All other authors have declared no conflicts of interest.

Reference


Aims & Methods: The aim of this study was to evaluate the factors associated with the technical difficulty of ESD for early gastric cancer (GC) which met expanded indication criteria using data from JCOG0607. The major inclusion criteria of JCOG0607 were as follows: 1) histologically proven intestinal adenocarcinoma; 2) cT1aN0M0; 3) lesion without finding of ulcer (UL negative) and >2 cm in size, or UL positive and ≤3 cm in size; 4) age 20-75. ESD were performed by certified endoscopists or under the supervision of certified endoscopists. There were 207 lesions, 105 patients (27.7%) were classified in difficult case group. The final diagnostic yield was 78.8% (260/328) in UL negative and 66.0% (67/102) in UL positive cases, respectively. The diagnostic yield of the different passes, the diagnostic yield was: 61%, 67% and 78% with the first, second, and third FNB pass, respectively. In evaluation of tissue quantity and quality of FNB specimens, the mean tissue length was 7.3 ± 5.2 mm, with a mean tumor size and tissue proportion between 51 to 75% of the total tissue processed (determined as the percent of the surface are occupied by lesion over the surface area of the entire tissue on one slide). No complications occurred during the study period.

Comparison of clinical characteristics and therapeutic outcomes between STER and EFRTR:

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<table>
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<th>STER (n = 15)</th>
<th>EFRTR (n = 28)</th>
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<td>48.4 ± 11.2</td>
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<td>Comitant disease, %</td>
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</table>

(continued)
Comparison of clinical characteristics and therapeutic outcomes between STEK and EFTR

STER (n = 15) EFTK (n = 28) P

No. of clips for surgery 5.8 ± 1.4 7.6 ± 1.6 0.001

Complications, % 6.7% (1/15) 14.3% (4/28) 0.643

En bloc resection, % 6.7% (1/15) 3.6 % (1/28) 1.000

GIST/Liomyoma/Schwannoma 11/4/0 25/2/1 0.173

Length of stay, d 6.1 ± 1.5 6.2 ± 2.0 0.856

Cost, USD 3260.9 ± 618.3 3237.5 ± 615.8 0.906

Follow-up time, mon 12.1 ± 12.2 22.8 ± 18.4 0.052

Conclusion: The treatment efficacy between submucosal tunneling endoscopic resection and endoscopic full-thickness resection for treating gastric fundus submucosal tumors was comparable, but submucosal tunneling endoscopic resection offers advantages over endoscopic full-thickness resection in terms of shorter surgery time and smaller number of clips needed to close the gastric wall defect.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1884 COMPARISON OF THE DIAGNOSTIC YIELDS OF ENDOSCOPIC ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION FOR DUODENAL AND GASTRIC SUBEPITHELIAL LESIONS

K. Nakamura
Gastroenterology, St.Luke’s International Hospital, Chuo-ku, Japan

Contact E-mail Address: nakaken@lukc.ac.jp

Introduction: The purpose of this study was to investigate the usefulness and safety of EUS-FNA for duodenal SELs, comparing them with gastric SELs.

Methods: Cross-sectional study was conducted using 41 patients who underwent EUS-FNA at our tertiary medical center in Tokyo between April, 2012 and February, 2017. We divided into 2 groups: 6 patients with duodenal SELs (group D) and 35 patients with gastric SELs (group G). We analyzed the diagnostic performance for the two groups. The results of diseases were classified as malignant, indeterminate, and benign. The Chi-square test was used for the comparison between the two groups.

Results: As (median, range); D: 61, [42–63], G: 60, [32–85]; male/female ratio; D: 1/5, G: 17/18; tumor size (median, range/mm); D: 16, [14–45], G: 24, [13– 67]; type of needle (22-gauge/19-gauge); D: 5/1, G: 30/6 (One case was used two types of needles);); number of needle passes: D, 5, [4–5], G, 4, [3–7]; procedure time (median, range/min); D: 34, [22–52], G: 42, [20–67]; diagnostic yield: D, 100%, G: 91.4%, complication: D, 0%, G: 2.9%. There were no significant differences between the two groups. The results of diseases were classified as malignant, indeterminate, and benign. The diagnostic performance of EUS-FNA for duodenal SELs was significantly better than gastric SELs.

Conclusion: Although the diagnostic performance of EUS-FNA for duodenal SELs was significantly better than gastric SELs, all cases were diagnosed as malignant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1885 SHORT-TERM OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER IN ELDERLY PATIENTS AND LONG-TERM OUTCOME AFTER NON-CURATIVE RESECTION

H. Sakaguchi1, Y. Ohara2, T. Toyonaga2, H. Kaku1, K. Matsuoka1, T. Sako1, R. Ariyoshi3, H. Abe4, F. Kawara1, S. Tanaka1, T. Ishida1, Y. Morita1, E. Uragaki1
1 Division Of Gastroenterology, Department Of Internal Medicine, Graduate School of Medicine, Kobe University, Kobe/Japan
2 Endoscopy, Kobe University Hospital, Kobe/Japan

Contact E-mail Address: valencia.001@gmail.com

Introduction: Endoscopic submucosal dissection (ESD) is widely used as a standard treatment for superficial tumors in the GI tract and its safety has been established. Opportunities for elderly patients to undergo ESD for gastric cancer is increasing due to the continued improvement in life expectancy. However, short-term and long-term outcome of ESD for elderly patients is still uncertain due to the high comorbidity profile of the elderly and possible increased risk of complications related to ESD in this population.

Methods: Therefore, we investigated the safety, efficacy and short-term outcome of gastric ESD for patients over 80 years old. Additionally, we evaluated the long-term outcome of non-curative resections according to both age groups. 1056 lesions in 886 patients treated with ESD between January 2011 and December 2015 in our hospital were retrospectively reviewed. They were classified into two groups; elderly group > 80 years old and younger group 79 years old and younger (810 lesions in 685 patients). The patient demographics, lesion characteristics, short-term ESD outcome, complications (perforation, postoperative bleeding, postoperative delir- ium, and pneumonia), were compared and analyzed.

Results: The median age was 83 years old (range: 80–92) in the elderly group and 77 years old (range: 36–78) in the younger group. In the elderly group, 79.8% (234 lesions in 201 patients) and non-elderly group - 79 years old and younger (810 lesions in 685 patients). The patient demographics, lesion characteristics, short-term ESD outcome, complications (perforation, postoperative bleeding, postoperative delirium, and pneumonia), were compared and analyzed.

Concerning the long-term outcome of non-curative ESD, cases performed between 2011 and 2013 were assessed. The median age was 83 years old (range: 80–92) in the elderly group and 77 years old (range: 36–78) in the younger group. In the elderly group, 79.8% (234 lesions in 201 patients) and non-elderly group - 79 years old and younger (810 lesions in 685 patients). The patient demographics, lesion characteristics, short-term ESD outcome, complications (perforation, postoperative bleeding, postoperative delirium, and pneumonia), were compared and analyzed.

Conclusion: ESD is a safe and effective treatment for early gastric neoplasia even in patients over 80 years old. However, because postoperative delirium and postoperative pneumonia were observed more often in the elderly patients, more careful attention to these conditions during perioperative care may be necessary. Elderly patients over 80 years old, with non-curative resections, underwent less frequent additional surgery without any impact on the disease specific death and global mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
published guidelines regarding appropriate surveillance of patients with GIM and how wide disparity in the management of this premalignant condition.

Aims & Methods: This study aimed to analyze surveillance practice and characterize the natural history of this premalignant condition by identifying all patients with GIM on an upper GI surveillance program and reviewing follow-up data. This is a retrospective study of patients with GIM who are currently enrolled in an upper GI surveillance programme. Patients with a history of GIM identified at any time during an 18 year surveillance period (from 1998 to 2016) were included in the study. Patient characteristics, endoscopy data including histological rates of Helicobacter pylori infection, Barrett’s oesophagus association and outcomes were reviewed.

Results: 160 patients (including those with Barrett’s oesophagus, GIM and family history of gastric cancer) were enrolled on the surveillance programme. 42 patients with GIM were identified-20 females (47.6%) and 22 males (52.3%). The mean age at which GIM was first diagnosed was 60.6 years (range from 17.9 to 71.5 years). 15/42 patients (35.7%) had co-existent Barrett’s oesophagus and Helicobacter pylori was identified in 6/42 (14.3%). The follow-up period ranged from 1 to 17.3 years. 27 patients had repeat gastroscopies following initial diagnosis. 15 patients are still awaiting a repeat gastroscopy. A large degree of variability in the number and frequency of follow-up gastroscopies was observed. The average interval of follow-up gastroscopies was 3.3 years per person. 14/27 patients (51.8%) had no evidence of GIM on most recent gastroscopy, 7/27 patients (26%) had repeat findings of persistent focal GIM, 5/27 patients (18.5%) progressed to extensive GIM. No cases of dysplasia were recorded but 1 patient (3.7%) developed gastric cancer.

Conclusion: This study suggests a low apparent risk of progression of gastric intestinal metaplasia in a small western cohort. Further studies may be necessary to address if the applicability of published surveillance guidelines can be generalized to regional low gastric cancer prevalence.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Seongnam/Korea, Republic of

P1888 GASTRIC ADENOCARCINOMA AND PROXIMAL POLYPOSIS OF THE STOMACH. A GENETIC STUDY OF A NEWLY DIAGNOSED FAMILY
I. Tacheici, M. Podhola, M. Leško, M. Minarík, L. Benesova, N. J. Bures
1. 2nd Dpt Of Internal Medicine, Charles University Faculty of Medicine 2nd Dpt of Internal Medicine, Hradec Kralove/Czech Republic
2. The Fingerland Department Of Pathology, Charles University in Prague, Faculty of Medicine at Hradec Kralove, University Teaching Hospital, Hradec Kralove/ Czech Republic
3. Charles University in Prague, Faculty of Medicine at Hradec Kralove, University Teaching Hospital, Hradec Kralove/Czech Republic
4. Genomac Research Institute Center for Applied Genomics of Solid Tumors (ceges), Genomac Research Institute, Prague/Czech Republic
5. Genomac Research Institute Center for Applied Genomics of Solid Tumors, Prague/ Czech Republic

Contact E-mail Address: tacheici@gmail.com

Introduction: Gastric adenocarcinoma and proximal polyposis of the stomach (GAPPS) has to been described recently only in a few families worldwide (only one in Europe so far). Three different point mutations in promoter 1B of the APC gene were identified as causal (c.-191T>G, c.-192A>G, and c.-195A>C). We diagnosed GAPPS in the second Czech white family (not related to that one published previously-ref. 1).

Aims & Methods: We diagnosed GAPPS across 3 generations in a new Czech white family. A genetic analysis of the family was performed.
Results: The Proband (a 43-year-old male) was endoscopically regularly surveyed from his 34 years of age because of fundic-gland polyposis with predominant involvement of the gastric fundus and body (with relative sparing of the lesser curve) and microcytic anaemia. Polyposis slowly progressed with the intestinal differentiated low-grade dysplasia in polypectomy specimens 10 years after the diagnosis. As the GAPPS criteria were fulfilled (ref. 2), he and his family underwent genetic testing and bi-directional Sanger sequencing of promoter 1B revealed a point mutation (c.-191 T > C). The same type of mutation was described in his father (63 years old), sister (41 years old), nephew (son of his sister), 6 years old), uncle (father’s brother, 51 years old) and 2 cousins (uncle’s daughters, 23 and 27 years old), all have been asymptomatic. No gastric cancer in the family history was mentioned. The Proband underwent preventive total gastrectomy, histology of the surgical specimen confirmed severe involvement of gastric body with fundic gland polyps, low-grade and focal high-grade dysplasia. The microcytic anaemia improved rapidly after surgery. The rest of family is scheduled for gastroscopy. The fundic-gland polyposis of similar distribution (with significantly lower number of polyps, without any dysplastic changes) was recently diagnosed in the 23-year-old cousin.

Conclusion: The second European family with GAPPS is presented. The recently described mutations in promoter 1B of the APC gene does not automatically mean a faster progression of the disease as suggested earlier. GAPPS can be presented with various phenotypes with a different course of disease, the prevalence can be higher than previously reported. Acknowledgement: The study was supported by the Research Project PROGRES Q40–15.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table: Differences of gastric cancer stage according to TGFB1-509 polymorphism and family history (Hx) of gastric cancer

<table>
<thead>
<tr>
<th>TGFB1-509</th>
<th>Stage 1</th>
<th>N (%)</th>
<th>Stage 2</th>
<th>N (%)</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Hx. (+)</td>
<td>Female</td>
<td>C/C</td>
<td>18 (78.3)</td>
<td>5 (21.7)</td>
<td>23</td>
<td>0.243</td>
</tr>
<tr>
<td>M/C</td>
<td>27 (64.3)</td>
<td>15 (35.7)</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>T carrier</td>
<td>20 (52.6)</td>
<td>18 (47.4)</td>
<td>38</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>76 (76.0)</td>
<td>24 (24.0)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| C/ C | 38 (62.3) | 23 (37.7) | 61 | 0.146 |
| M/C | 103 (72.5) | 39 (27.5) | 142 |

Family Hx. (+) | Female | C/C | 46 (61.3) | 29 (38.7) | 75 | 0.781 |
| M/C | 137 (63.1) | 80 (36.9) | 217 |
| Male | T carrier | 91 (61.9) | 56 (38.1) | 147 | 0.568 |
| T | 289 (64.5) | 159 (35.5) | 448 |

| C/ C | 137 (61.7) | 85 (38.3) | 222 | 0.529 |
| M/C | 426 (64.1) | 239 (35.9) | 665 |

Disclosure of Interest: All authors have declared no conflicts of interest.
References

PI889 ENDOSCOPIC TREATMENT FOR LATERAL SPREADING SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA
H. Kawakubo1, T. Ometi2, K. Suda3, R. Nakamura4, N. Wada1, N. Yahagi1, Y. Kitagawa1
1Department Of Surgery, Keio University School Of Medicine, Tokyo/Japan
2Kawasaki Municipal, Kawasaki Hospital, Kawasaki/Japan
3Department Of Surgery, Keio University School Of Medicine, Tokyo/Japan
4Keio University School of Medicine, Tokyo/Japan

Contact E-mail Address: hkawakubo@z3.keio.jp

Introduction: ESD is the one of the options of treatment even for lateral spreading (LS) lesions. The clinical characteristics of LS lesions are characterized as a hypervascular lesion (ESMGL). Endoscopic diagnosis is developed by magnified endoscopy, however accuracy of diagnosis for lateral spreading ESCC is not high. Some patients have to undergo additional treatment because tumor is invaded to submucosal layer or lymphvascular invasion. On the other hand, wide resection by ESD could cause the delay of additional treatment because of the restriction for the treatment of esophageal stricture after ESD. Thus, treatment strategy for lateral spreading ESCC has to include additional treatment after ESD. Aim of this study is to evaluate our treatment strategy for lateral spreading superficial ESCC.

Aims & Methods: From January 2010 to December 2014, 49 cases of lateral spreading superficial ESCC were resected by surgery or ESD. Diagnosis, treatment methods and outcomes are evaluated. Our indications for additional treatment after ESD are the cases of over pT1b (SM2) or lymphvascular invasion.

Results: In 49 cases of lateral spreading superficial ESSC, 32 cases were treated by ESD and 17 case were treated by surgery. All lesions of 32 cases are completely resected by ESD. Average size of tumor treated by ESD is 59.4 mm (50–130 mm). Accuracy of estimated depth of invasion by endoscopy for ESD cases is 65.7%. Four of 32 cases of ESD underwent additional therapy (3 for surgery and 1 for CRT) because of pT1b (SM2) or lymphvascular invasion, and one case has lymph-node metastasis. Rate of stricture after ESD is 20.0% for subcircumferential stricture and 77.8% for circumferential stricture instead of steroid injection. Average time and duration for control of esophageal stricture by Balloon Bougie is 13.5 times and 18 weeks. In 17 surgical cases, all cases are treated by thoracoscopic esophagectomy. Average size of tumor treated by surgery is 76.5 mm (50–130 mm). Accuracy of estimated depth of invasion by endoscopy for surgical cases is 47.1%. Seven cases in 17 (41.2%) have lymph node metastasis. Rate of lymph node metastasis is 42.9% for pT1a-MM, 100% for pT1b-SM1 and 42.9% for pT1b-SM2. One case died by recurrence after surgery and 48 cases were survived without any recurrences.

Conclusion: Accuracy of estimated depth of invasion by endoscopy for lateral spreading superficial ESSC is cut-off compared to normal superficial ESCC. Most of circumferential lesions could be prevented by endoscopic injection. However control of strictures after circumferential esophagectomy is difficult. Thus, diagnostic ESD should not be performed for circumferential lesions of lateral spreading superficial ESCC for the patients who will select CRT for additional treatment, and CRT should be selected for first treatment of these cases. Long survival could be obtained by ESD or surgery for the patients of lateral spreading ESCC by our treatment strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI889 PEPSSINOGENS AND GAstrin-17 FOR IDENTIFICATION OF GASTRIC CANCER PRECURSOR LESIONS: THE RESULTS FROM THE GISTAR PILOT STUDY
C. Robles1, D. Rudzite2, I. Polaka3, L. Tzivan1, I. Kikuste3, A. Vanagas3, S. Isajevs5, L. Liepniece-Karele5, S. Parshutin3, J. Young Park6, R. Murillo6, R. Herrero6, M. Leja1
1Prevention And Implementation Group, International Agency for Research on Cancer, Lyon/France
2Riga East Clinical University Hospital, Riga/Latvia
3Institute Of Clinical And Preventive Medicine & Faculty Of Medicine, University Of Latvia, Riga/Latvia
4Gastrointestinal Service GASTRO, LV/Latvia
5Academic Histology laboratory, Riga/Latvia
6International Agency for Research on Cancer, Lyon/France

Contact E-mail Address: ikikuste@gmail.com

Introduction: Few major international guidelines consider pepssinogen tests as the best available non-invasive tests to detect precancerous lesions (in particular, - corpus atrophy) in the stomach mucosa. Gastrin-17 (G-17) has been suggested as a potential marker for antrectomy in Europe and Asia. Recommendations from the European Commission expert group consider the need for additional studies before any screening with biomarkers can be recommended for implementation.

Aims & Methods: Generally healthy 40-65 years aged participants of the GISTAR pilot study referred for upper endoscopy according to the pilot study protocol were enrolled. Pepssinogen (Pg) I and II were assessed from plasma samples by two methods-ELISA (Biohit Plc.) and latex-agglutination (Eiken Chemical Co.) test systems. G-17 and IgG group antibodies to H.pylori infection were assessed by Biohit Plc. ELISA test systems. The following cutoff values were considered characteristic for atrophy: PgI/I + II < 3 for ELISA, PgI/I + II < 3 and PgI/I and PgII/I < 3 for latex-agglutination, and G-17<1 pmol/l (in a plasma sample obtained in fasting condition). Biopases were sampled and read by two independent pathologists according to the updated Sydney system. OLG and OLGIM scoring systems were also applied. Cancer, dysplasia, OLG or OLGIM III-IV were taken together were considered high-risk lesions.

Results: Altogether 1044 subjects (55% females, mean age =52, 67.7% with positive H. pylori antibodies) were included in the study. The sensitivity and specificity for detecting moderate to severe atrophy in the corpus for Biohit ELISA test was 47.2% and 92.3%, but for Eiken latex-agglutination test 81.1% and 62.1%, respectively. The corresponding values for G-17 to detect atrophy in the antrum were 29.2% and 58.9%. High-risk lesions were detected by Biohit ELISA pepssinogen test with 22.8% sensitivity and 91.6% specificity, but with Eiken latex-agglutination test with 67.4% and 62.5% sensitivity and specificity.

Conclusion: Due to the high specificity, pepssinogens (e.g. ELISA) could be potentially used for screening of precancerous lesions if relatively low sensitivity could be accepted. G-17 does not seem to provide any additional benefit.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: We aimed to investigate and characterize the biological roles of miR-211 in the development of gastric cancer. The expression level of miR-211-5p was measured in paired primary gastric cancer with corresponding adjacent gastric tissues by RT-qPCR. Furthermore, we investigated the biological role of miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines in vitro.

Results: The expression levels of miR-211-5p were significantly decreased in gastric cancer and low expression of miR-211-5p correlates with poor prognosis in gastric cancer patients. Ectopic expression of miR-211-5p suppressed proliferation, migration and induced apoptosis in gastric cancer cell lines in vitro. Bioinformatics and quantitative real-time PCR analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation and migration of gastric cancer cells and Overexpression of FoxC1 partly abrogated the inhibitory effects of miR-211-5p on gastric cancer cell proliferation and motility.

Conclusion: We therefore conclude that miR-211-5p acted as a tumour suppressor by targeting FoxC1 in gastric cancer and miR-211-5p might be a potential target for the treatment of gastric cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Contact E-mail Address: vinbove@alice.it

Introduction: Duodenal adenomas are rare epithelial tumors and represent 25% of the benign lesions diagnosed in the small bowel. Non-ampullary sporadic duodenal adenomas (NASDA) are usually asymptomatic and their diagnosis is mostly incidental. NASDA are benign epithelial tumors with a potential for malignant transformation via the adenoma–carcinoma sequence; nevertheless this risk is lower compared to ampullary or duodenal adenomas in the context of genetic syndromes. Results of Endoscopic Mucosal Resection (EMR) of NASDA were only assessed in a large series of patients.

Aims & Methods: Consecutive patients undergoing EMR of NASDA between May 2002 and December 2016 were identified from an electronic database. Patients with a genetic polyposis syndrome (FAP or Peutz-Jeghers) and/or adenomas of the major or minor duodenal papilla were excluded. Preoperative biopsy was performed at operator discretion, considering that the majority of the patients were referred from other centers. In case of doubt for a possible involvement of the ampulla of Vater, duodenoscopy with a side-viewing endoscope was also performed. EUS was not systematically done before duodenal EMR.

Results: EMR of 75 NASDA was performed in 68 patients (56% en-bloc resections, 27% piecemeal). The mean size was 14.4 mm and 28.9 mm for lesions resected en-bloc and piecemeal, respectively. Histopathological findings were: low-grade dysplasia (n = 27, 36%), high-grade dysplasia (n = 34, 45.4%), high-grade dysplasia with focal adenocarcinoma (n = 12, 16%), intramuscular adenocarcinoma (n = 2, 2.6%). Pre-EMR biopsy tended to downgrade the lesion in 36.4% of cases for lesions <20 mm; bigger lesions were removed piecemeal. Blended “endocut” current was used in all the cases. All resected specimens were retrieved for histological examination. CO2 insufflation was routinely used during duodenal EMR after 2013. Argon plasma coagulation was used to eradicate residual adenomatous tissue at discretion of the operator. Endoscopic follow-up was scheduled after 3, 6 and 12 months for the first year, and then yearly for up to 5 years.

Conclusion: EMR of 75 NASDA was performed in 68 patients (56% en-bloc resection, 27% piecemeal). The mean size was 14.4 mm and 28.9 mm for lesions resected en-bloc and piecemeal, respectively. Histopathological findings were: low-grade dysplasia (n = 27, 36%), high-grade dysplasia (n = 34, 45.4%), high-grade dysplasia with focal adenocarcinoma (n = 12, 16%), intramuscular adenocarcinoma (n = 2, 2.6%). Pre-EMR biopsy tended to downgrade the lesion in 44.4% (16/36). Retroperitoneal perforations occurred in 3/75 (4.0%) procedures when possible, for lesions >20 mm; bleeding was reported in 13/75 (17.3%) resections and was successfully managed by EGD or OTSC. Recurrence was defined as the need for a further endoscopic intervention 5 years after the initial procedure; 61/68 patients (91.1%) were fully retreated endoscopically. There was no mortality related to the intervention.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Valeri1, A. Tringali1, I. Boskoski1, P. Familiari1, V. Bove1, R. Landi2, V. Perri1, G. Costamagna1
2. Digestive Endoscopy Unit, Catholic University of Rome -Fondazione Policlinico Universitario “Gemelli, Rome, Italy; Rome, Italy
3. Dipartimento Uoc Endoscopia Digestiva Chirurgica, Policlinico A. Gemelli, Rome, Italy.

Contact E-mail Address: joanarocastela@gmail.com

Introduction: The dramatic rise in the incidence of gastroesophageal junction adenocarcinoma (GEJ) adenocarcinoma in the Western countries, has promoted an increased interest about the etiopathogenesis and natural history of GEJ. The cardiac epithelium (CE), which integrates the morphological spectrum of Barrett’s esophagus, is frequent in endoscopic (15%) and histological (24%) GEJ in children and adults. Its congenital versus metastatic origin still needs to be clarified. The gastroesophageal neo-junction after esophagectomy seems the ideal model to study the development of GEJ epithelium, reproducing "in vivo" its natural history.

Aims & Methods: The aim of this study was to evaluate the prevalence of metastatic CE in the gastroesophageal neo-junction. Prospective study of patients undergoing esophagectomy due to esophageal/GEJ neoplasia between November 2002 and November 2016. Upper gastrointestinal endoscopy (UGE) (Olympus, GIF-HQ 190) was performed 3 months after surgery; the neo-junction was evaluated with white light and Narrow band imaging (NBI); protocollated biopsies were made (suspected areas of CE, randomized in the anastomosis if endoscopic absence of CE, 2 cm above and below the anastomosis). Endoscopic CE defined by the presence of circular pattern with NBI in the anastomosis. Histological evaluation performed by 3 pathologists with gastro-intestinal expertise. A questionnaire for gastroesophageal reflux (GER) symptoms evaluation was applied.

Results: 20 patients were included (9 adenocarcinomas), 19 men, mean age 60±11 years, 9 under proton-pump inhibitor and 10 with GER symptoms. UGE: unable to pass a standard scope in anastomosis due to stenosis: 3/20; esophagitis: 5/20; columnar epithelium of the esophagus: 1/20. Endoscopy suggested of CE: present in 17/20, suspect in 2/20 and absent in 1/20. Histologically: CE confirmed in 18/20 patients; additionally identified oxyntocardiac epithelium in 12/20 and intestinal metaplasia in 2/20. The endoscopic diagnosis of CE revealed a sensitivity, specificity, positive and negative predictive value of 94.4%, 100%, 100% and 66.7%, respectively.

Conclusion: The identification of metastatic CE in neo-junctions is a very frequent and early event and its present corroborates the hypothesis of metaplasia, to the detriment of a congenital origin. The good endoscopic and histological correlation observed for CE will allow the definition of endoscopic patterns, essential for its recognition.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
associated, in our series, with a higher incidence of residual/recurrent adenoma, when compared to other studies. These results are similar to those reported in the literature. Residual and recurrent duodenal adenomas were successfully retreated by EMR in all of them but one. Mortality related to NASDA was absent in our series after a median follow-up of 59 months (range 1-147).

Management of precancerous lesions after EMR for NASDA requires the availability of interventional radiologists and surgeons with experience in retropitoneal surgery. In our experience colorectal adenomas was correlated to NASDA (33.3%), colonooscopy is considered part of the pre-EMR assessment when NASDA is diagnosed. A recall system and patient’s compliance to endoscopic follow-up are mandatory to detect recurrences and their prompt treatment.

Disclosure of Interest: G. Costamagna: Grant/research support from Olympus Japan Member of advisory committees or review panels for Cook, Inc., Boston Scientific Corp. and Given Imaging.

All other authors have declared no conflicts of interest.

References

P1895 CROSSTALK BETWEEN THE G PROTEIN-COUPLED RECEPTOR 39 AND RECEPTOR TYROSINE KINASES IN HUMAN GASTRIC CANCER

S. Leal-López1, B. Otero-Alen2, C. S. Seoane-Mosteiro2, L. S. Estévez-Perez2, T. García-Caballero1, R. Gallego-González1, J. E. Domínguez-Munoz1, J. P. Perez-Camilla1, Y. Paez-Rodallez1

1Gastroenterology, Health Research Institute of Santiago (IDIS), Santiago de Compostela/Spain
2Endocrinology, Health Research Institute of Santiago (IDIS), Santiago de Compostela/Spain
3Morphological Sciences, University of Santiago, Santiago de Compostela/Spain
4Gastroenterology, University Hospital of Santiago, Santiago de Compostela/Spain

Contact E-mail Address: info@feiamd.org

Introduction: Obestatin is a bioactive peptide with a well-defined function on cell proliferation mediated by the GPR39 receptor. Our data involve this system in several processes located in the stomach: from peptinogen secretion in healthy stomach to malignant proliferation in gastric adenocarcinomas (1). A key step in obestatin signaling is the transactivation process GPR39-RTK through MMPs activation. This step could imply a key mechanism by which MMPs regulate these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases.
Acetylcholine induces cancer stem cell phenotype via activation of muscarinic and nicotinic pathways. It also inhibited the effects of ACh on the number of T cells.

**Introduction:** The mechanisms of gastric carcinogenesis, especially of diffuse type of gastric cancer (GC) are poorly understood. The cancer stem cells (CSC) represent a particular fraction of cancer cells, considered at the origin of cancer and responsible for carcinogenesis. The expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) in gastric cancer cells has been suggested in gastric carcinogenesis but its effect on gastric CSC remains to be established.

**Aims & Methods:** Our aim was to study the effect of ACh on gastric cancer cells, and in particular its capacity to induce the stem cell phenotype, and to study the mechanisms involved. Adenocarcinoma gastric epithelial cell lines were first cultured in adherent conditions in the presence of ACh (0.1-10 μM), before being cultured in non-adherent condition in order to favour expansion of CSC and formation of tumorspheres (T). The effect of ACh on T formation was evaluated under microscope by quantifying the number and size of T using the System snapshot file in INCell analyzer 2200/6000. The involvement of different cholineergic (muscarinic and nicotinic) receptors in ACh-induced responses was studied by pharmacological approach using selective agonists and antagonists. The expression of CSC marker SNRP (NO donor) and L-NAME (nitric oxide synthesis inhibitor). Finally, the effect of ACh on the expression of CSC and epithelial-mesenchymal transition (EMT) markers was studied by immunofluorescence, RT-qPCR and flow cytometry. Statistical analysis was performed by ANOVA test, Kruskal-Wallis test, or two-way non-parametric ANOVA test using SPSS16.0 software.

**Results:** ACh at concentrations of 1.0 and 1 μM significantly increased the number and size of T as compared to control conditions (p < 0.001). Furthermore, a selective muscarinic receptor agonist, increased the number and size of T, while the stimulatory effect of ACh on T was significantly reduced by the selective muscarinic receptor antagonist, atropine. Similarly, DMPP, a selective cholinergic (muscarinic and nicotinic) receptors in ACh-induced responses was studied by pharmacological approach using selective agonists and antagonists. The expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) in gastric cancer cells.

**Conclusion:** This study shows that ACh induces CSC properties of gastric cancer cells of diffuse type via activation of muscarinic and nicotinic pathways. It also shows that ACh effects are, at least in part, mediated by nitric pathway. These results suggest that ENS may be a new actor in gastric carcinogenesis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**


P1901 MACHINE-LEARNING-BASED AUTOMATIC DIAGNOSIS SYSTEM FOR HELICOBACTER PYLORI INFECTION USING LINKED COLOR IMAGING

Y. Okada1, N. Yagi2, H. Ichikawa2, H. Kitae2, A. Tomie2, S. Hiwa3, T. Hiyosyu3
1Life And Medical Science, Graduate School of Doshisha University, Kyotanabe/Japan
2Gastroenterology, Murakami Memorial Hospital, Asahi University, Gifu/Japan
3Faculty Of Life And Medical Science, Doshisha University, Kyotanabe/Japan

Contact E-mail Address: yokada@mis.doshisha.ac.jp

Introduction: Linked color imaging (LCI), a recently developed endoscopic technique, emphasizes diffusex redness, which is a characteristic of Helicobacter pylori (Hp) infection. However, the diagnosis of Hp infection does not have objective indicators; it depends on medical doctors’ experience. Therefore, it is necessary to construct objective indicators to diagnose Hp infection.

Aims & Methods: The aims of this study are to determine objective indicators for the presence or absence of Hp infection to support medical doctors’ diagnoses by constructing an automatic diagnostic system. In the proposed system, first, a region with a high hue in LCI images is defined as a region of interest (ROI). Images with a wide ROI and images with a narrow ROI are classified as high and low hue images, respectively. As a result, LCI images are classified into two types in which inflammation due to Hp infection presents as red and purple. Then, the presence or absence of Hp infection is learned by machine learning for each type of LCI image. The feature values used in the learning process are the ratio of the ROI, the average and median hue values in high hue images, and the mode saturation value and the median and variance of the hue in low hue images. Then, the trained classifiers diagnose the presence or absence of Hp infection automatically. In this paper, the constructed system was evaluated using 128 images (32 patients) in which endoscopic examination (LCI observation) and Hp infection diagnosis were performed at Murakami Memorial Hospital of Asahi University. Furthermore, support vector machines were used as classify learners for diagnosis.

Results: In the previous system [1], 29 out of 32 cases were automatically diagnosed correctly. In contrast, all cases were automatically diagnosed correctly with the proposed system. This result demonstrates that classifying LCI images into two types based on color improves the accuracy of this system.

Conclusion: The proposed system can automatically diagnose the presence or absence of Hp infection with the same precision as medical doctors with sufficient experience. Therefore, the proposed system can support the diagnosis of medical doctors with less experience.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1902 HELICOBACTER PYLORI DETECTION BY γ−GLUTAMYLTRANSPEPTIDASE-ACTIVATED FLUORESCENT PROBE

T. Akashi1, K. Matsumata1, T. Kanda2, M. Nakano3, M. Kamiya4, Y. Akazawa1, K. Ohnita1, F. Takeshima1, K. Nakao1, Y. Urano4, H. Isomoto4
1Department Of Gastroenterology And Hepatology, Nagaaki university hospital, Nagaaki/Japan
2Division Of Medicine And Clinical Science, Tottori University Hospital, Yonago/Japan
3International Health, Institute Of Tropical Medicine, Nagaaki University, Nagaaki/Japan
4Laboratory Of Chemical Biology And Molecular Imaging, Graduate School Of Medicine, The University of Tokyo, Tokyo/Japan

Contact E-mail Address: fuk_naga_ta23@yahoo.co.jp

Introduction: γ-glutamyltranspeptidase (GGT) is a cell surface-associated enzyme that is not highly expressed in normal cell. However GGT is overexpressed in various type of human cancers. It is known that Helicobacter pylori (H. pylori) also produce GGT. Urano et al have developed an enzymatically activatable fluorescent probe, γ-glutamyl hydroxymethyl rhodamine green (γGlu-HMRG), which is a fluorescent compound under a pH and normal cellular environment, but turns to be highly fluorescent upon reaction with GGT[1]. Aim of this study is to consider if γ-Glu-HMRG can be useful for diagnosing infection H. pylori.

Aims & Methods: In this study, we investigated whether activation of γ-Glu-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGsTop). Furthermore, we applied γ-Glu-HMRG to biopsy specimens which were taken from antrum and corpus of stomach in H. pylori positive patients (n = 13) and H. pylori negative patients (n = 14). We then observed the increase of fluorescence intensity over time (1 min, 5 min, 10 min, 15 min). Fluorescence intensity was quantified by Image J software (National Institutes of Health, Rockville, Maryland)[2].

Results: Activation of γ-Glu-HMRG fluorescence was detected in WT strain, but was not in ggt mutant strain. Activation of γ-Glu-HMRG fluorescence was inhibited by GGsTop. There was significant difference of the increase of fluorescence intensity between H. pylori positive and negative both in antrum corpus of stomach (antrum p = 0.0008, corpus p = 0.047).

Conclusion: GGT-activated fluorescent probe can be useful for H. pylori infection diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1904 WE CAN JUDGE THE EXISTENCE OF PRESENT OR PAST H. PYLORI INFECTION WITH ONLY ONE ENDOSCOPIC CARDIAC IMAGES (WHALE SHARK SIGN: WSS)

T. Yamasaki1, T. Sakurai1, J. Mito1, M. Mitsunaga1, Y. Amano2, Y. Tokai3, M. Saruta3
1Department Of Gastroenterology And Hepatology, The Jikei University, Tokyo, Japan
2Department Of Gastroenterology, Saitama Kyoko Hospital, Kawasaki/Japan
3Department Of Gastroenterology, Cancer Institute Hospital, Tokyo, Japan

Contact E-mail Address: takusan.yamasan@gmail.com

Introduction: Several H. pylori (HP) infection related cardiac findings (mucosal atrophy, metaplastic change, diffuse redness, spotty redness and nodular change of the antrum etc.) are so important sign of HP infection on endoscopic examination. On the other hand, we have confused with various newly endoscopic findings (patchy redness and map-like redness etc.) were seen on non-HP eradicated stomach. On this time, we have found out a new other ultimate useful finding showing HP infection related gastritis at gastric cardiac (EG junction) including present and past HP infection. The endoscopic image of gastric cardiac is the first gastric view through the esophagus on each endoscopic examination.

Aims & Methods: Our aim of this study is to elucidate possibility of judgement with only this cardiac endoscopic view about presence or absence with HP infection. We have found out so useful and specific cardiac image (We call Whale Shark Sign: WSS) closely related to HP infection. We have examined the presence of WSS on 4,268 cases that have been able to overviewed on their endoscopic examination.

Results: Mean age of patients was 52.4 years old. In case of WSS positive, all their serum HP antibody titers showed more than cut-off level (3 U/ml) to avoid false negative results.

Conclusion: We have been able to judge the presence of HP infection with only cardiac endoscopic images (WSS), we should take care of seeing the presence of WSS sign. Since this sign is very easy and simple, everyone will be able to judge the presence of HP infection as a gastric cancer risk.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1903. Table: Different characteristics of the subjects with an equivocal H. pylori test finding according to the repeated H. pylori serology test findings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Seropositive finding on the follow-up test (n = 58)</th>
<th>Seronegative or equivocal finding on the follow-up test (n = 40)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years-old)</td>
<td>52.1 ± 9.8</td>
<td>54.0 ± 11.2</td>
<td>0.386</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>43 (74.1%)</td>
<td>23 (57.5%)</td>
<td>0.084</td>
</tr>
<tr>
<td>Follow-up period (months)</td>
<td>32.1 ± 13.0</td>
<td>28.6 ± 11.3</td>
<td>0.165</td>
</tr>
<tr>
<td>Past H. pylori eradication</td>
<td>6.10 (3.3%)</td>
<td>10 (25.0%)</td>
<td>0.054</td>
</tr>
<tr>
<td>Initial serum pepsinogen I level (ng/ml)</td>
<td>61.2 ± 32.0</td>
<td>48.5 ± 15.6</td>
<td>0.023</td>
</tr>
<tr>
<td>Initial serum pepsinogen II level (ng/ml)</td>
<td>12.3 ± 8.6</td>
<td>9.3 ± 5.5</td>
<td>0.036</td>
</tr>
<tr>
<td>Body mass index (kg/m²)</td>
<td>24.6 ± 3.9</td>
<td>23.8 ± 2.6</td>
<td>0.231</td>
</tr>
<tr>
<td>Current smoker</td>
<td>5.5 ± 1.5</td>
<td>5.5 ± 1.4</td>
<td>0.984</td>
</tr>
<tr>
<td>Body mass index (kg/m²)</td>
<td>24.6 ± 3.9</td>
<td>23.8 ± 2.6</td>
<td>0.231</td>
</tr>
<tr>
<td>Comorbidity Hypertension Diabetes mellitus Others</td>
<td>17 (29.3%)</td>
<td>13 (25.0%)</td>
<td>0.736</td>
</tr>
</tbody>
</table>

Statistically significant values are highlighted in bold. Continuous variables are shown as mean value ± standard deviation using the Student’s t-test. Categorical variables are shown in frequency (%) using the Chi-square test or Fisher’s exact test. *Criteria for heavy drinking was ≥15 drinks/week for men and ≥8 drinks/week for women. Social drinker was defined as those who drink alcohol, but less than heavy drinkers.

P1905 SERUM PEPsinogen II AS A NON-INVASIVE MARKER FOR THE DIAGNOSIS OF HELICOBACTER PYLORI INFECTION: A PROSPECTIVE STUDY IN A COHORT OF DYSPEPTIC PATIENTS

F. Di Mario1, C. Miraglia1, S. Sica1, A. Viol1, M. Franceschi2, G. Baldassarre1, M. Rugge1, P. Crafa1, A. Tursi2, G. Brandimarte1, L. Franzoni1, N. Dal Bo3, R. Cannizzaro1, C. Scarpginato1
1Department Of Medicine And Surgery, University Of Parma, Italy, University Of Parma, Parma/Italy
2Endoscopic Unit, Department Of Surgery, Uls4, Hospital ULS4 Alto Vicentino, Santarosato/Italy
3Department Of Gastroenterology, University Of Parma, Parma/Italy
4Endoscopic Unit, Department Of Gastroenterology, University Of Parma, Parma/Italy
5Gastroenterology Service, ASL B AT Gastroenterology Service, Andria/Italy
6Division Of Internal Medicine and Gastroenterology, “Cristo Re’” Hospital, Rome, Italy, Roma/Italy
7Gastroenterological Unit, Treviso Hospital, Treviso/Italy
8Oncological Gastroenterology, Centro Di Riferimento Oncologico di Aviano S.O.C. di Gastroenterologia, Aviano/Italy

Contact E-mail Address: francesco.dimario@unipr.it

Introduction: The diagnosis of Helicobacter pylori (H.p) infection is currently made by means of non-invasive (Urea Breath Test or HpSA) or invasive (gastric biopsy or culture) methods. Serological assessment of H.p infection by using levels of IgG is not recommended. Pepsinogen II (PGII) is validated in the literature as a non-invasive marker of gastric inflammation. Aim of the study was to assess in a population of dyspeptic patients the clinical availability of PGII determination in singling out subjects infected by H.p in comparison with non-infected ones.

Aims & Methods: A cohort of 880 consecutive dyspeptic patients (F 439; mean age 55.5 yrs; range: 29.83-78 yrs) were enrolled in the study. Exclusion criteria: previous surgery, previous H.p eradication therapy, concomitant PPI. In all patients the diagnosis of H.p infection was made by means of upper GI endoscopy and at least one of these two methods: UBT, HpSA. All patients underwent blood sample for determination of serum levels of PGII (Blohid Oyj; Finland; normal values: 2-15µg/l). In a group of 670 pts a course of antibiotics (triple, concomitant or sequential therapy) to cure H.p infection was performed and PGII levels were measured at baseline (T0) and after two months (T1) from the end of the antibiotic therapy. The search for the most appropriate cut-off of PGII in diagnosis of H.p. infection was assessed by using the ROC curve method.

Results: 430 out of 660 dyspeptic patients (F 245;mean age 52.3 yrs; range 32-69 yrs) showed an H.p-related gastritis (group1) in comparison with 430 out of 860 patients (F 245; mean age 57.3 yrs; range 38-74 yrs) resulted negative for H.p infection (group 2). The mean value of PGII in group 1 was 20.9 ± 6.1 opposite with 7.2 ± 1.7 in group 2; p <0.0001. 415 out of 670 patients treated with antibiotics schedules were cured from H.p infection, opposite with 255 non-eradicated ones. In the group of cured patients, the PGII values at T0 were 16.5. in comparison with 255 non-eradicated ones. In the group of cured patients, the PGII values at T0 were 16.5. in comparison with 8.6 at T1; p<0.001. The cut-off for PGII in the diagnosis of H.p infection, by comparing the 430 H.p positive pts and the 430 negative ones with method of ROC curve identified the mean value of 10.66 µg/l, youden index J = 0.997.

Conclusion: serum PGII levels seem able to perform diagnosis of H.p infection in dyspeptic patients, as well as the efficacy of antibiotics treatment for H.p eradication, being 10.66 µg/l the best cut-off in singling out infected from non-infected subjects.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1906 CAN THE URETHREA BREATH TEST PREDICT HELICOBACTER PYLORI ERADICATION?

D. Brennan1, C. Dalton1, P. Murray1, J. O’Toole1, H. Temperley1, C. O’Morain2, S. Smith1, D. McNamara1

1National Gastric Research Group Trinity College Dublin, Dublin/Ireland
2Faculty Of Health Sciences, Trinity College Dublin - Faculty of Health Sciences, Trinity College Dublin; Dublin/IE; Dublin/Ireland.

Contact E-mail Address: dbrennan@tcd.ie

Introduction: The Ureathrea Breath Test (UBT) is considered the gold standard non-invasive test for detection of Helicobacter pylori infection in Ireland. In Ireland, eradication rates for standard clarithromycin-based triple therapy have fallen below the 80% deemed acceptable for a given treatment. With this in mind, it is important to optimise management of H. pylori infection. It has been suggested that the DOB value is reflective of the amount of bacteria present in the stomach and could predict whether the infection is eradicated.

Aims & Methods: The aim of this study was to determine whether there is an association between DOB and eradication of H. pylori infection in an Irish cohort. Treatment naive adult patients undergoing UBT were included. Patients were deemed to be H. pylori positive if a Delta Over Baseline (DOB) value of > 20% was obtained. Positive patients were categorised into low (<16%), intermediate (16-35%) and high (>35%) DOB groups. A random subset of positive patients was given clarithromycin-based triple therapy for 7 days. A follow-up breath test was performed at least 8 weeks post-treatment to confirm eradication of H. pylori in all patients. The three DOB groups were compared with respect to age, gender and eradication rates.

Results: Out of 860 of UBTs assessed (mean age 43.5 ± 15.2 years, 39% male), 273 (32%) were positive (mean age 43.1 ± 14.9 years, 41.9% male) and 587 were the total positive patients, 91 (31.5%) returned for a follow-up UBT to confirm eradication of H. pylori. When patients were categorised into low, intermediate and high UBT groups, there was no significant difference in age and gender between groups (p = 0.06 for gender and 0.3 for gender). Eradication rates in the low, intermediate and high UBT groups were 70.5%, 63.0% and 50.0% respectively (p = 0.3). Patients were then categorised according to eradication status. When eradication was successful, the average DOB value was significantly lower (p = 0.01) in successful patients (DOB average of 28.9%) compared to unsuccessful (DOB average of 8.9%). When eradication was unsuccessful (p = 0.03, 95% CI 0.69 to 17.5%), eradication rates were 70.5%, 63.0%, and 50.0% respectively. When these rates were compared to respective rates in those whose treatment was not known, no difference was observed. The subset was also categorised according to eradication status. When eradication was successful, the average DOB value was lower, at 22.0% compared to unsuccessful patients (p = 0.6). Similarly, when these DOB values were compared to respective values in those whose treatment was not known, no difference was observed.

Conclusion: As the DOB value increases in the UBT, the eradication rate of H. pylori decreases, regardless of treatment regimen. When categorised according to eradication status, the DOB value was significantly lower when eradication was successful (20.6 ± 29.8%) compared to unsuccessful (p = 0.03). The DOB value could be a useful value in stratifying patients with H. pylori infection; especially as histology and antimicrobial resistance information is unavailable in patients undergoing non-invasive testing for H. pylori infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1908 COMPARISON OF THE EFFICACY BETWEEN BISMUTH AND ALTERNATING RIFAXIMIN ON SECOND-LINE QUADRUPLE REGIMEN OF HELICOBACTER PYLORI ERADICATION


Digestive Disease Center, Institute For Digestive Research, Soonchunhyang University College of Medicine, Seoul/Korea, Republic of

Contact E-mail Address: junspark@schmc.ac.kr

Introduction: Bismuth is a heavy metal which has antimicrobial activity through binding iron in bacteria. Despite this, AMX and CAM are the strongest HP 1st eradication therapy.

Aims & Methods: From May 1st 2003 to October 31st 2015, six thousand and five hundred ninety-five patients were treated their H. pylori infection in Soonchunhyang University Hospital, Seoul. And their prescriptions and result of eradication were retrospectively reviewed on the medical records. The patients had clarified pre-ant eradication result, which can be assured by the rapid urease test performed within 100 days of eradication were enrolled. And statistical analyses were performed to the patients who had second-line treatment to compare the efficacy of the bismuth containing regimen and the rifaximin containing one.

Results: During the periods over 12 years, two thousand and seven hundred patients were prescribed the standard triple eradication regimen and 2,109 (78.11%) patients showed the successful treatment result. One hundred twenty-six treatment failure groups were compared with treated with second-line regimens. Thirty-five patients were prescribed the bismuth-containing regimen and 34 (97.14%) of them showed successful eradication result. Other 91 patients were treated with the rifaximin-containing regimen and showed 92.31% of eradication rate. The treatment success rates are not different significantly in statistics. (Fisher’s exact test, P-value = 0.442)

Conclusion: Alternative rifaximin containing regimen of second-line H. pylori treatment didn’t showed inferiority on standard bismuth-containing one. This suggests that the use of rifaximin is possible in the patients who are not suitable to bismuth use and failed with primary eradication.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1909 COMPARISON OF 10-DAY STANDARD TRIPLE THERAPY AND LEVOFLOXACIN BASED THERAPY FOR HELICOBACTER PYLORI ERADICATION: RANDOMIZED CONTROLLED TRIAL

M.K. Kang, S. Lee, M.C. Kim, K.H. Kim, K.O. Kim, B.I. Jang, T. Kim

Internal Medicine, Yeungnam University College of Medicine, Daegu/Korea, Republic of

Contact E-mail Address: kmrgood111@naver.com

Introduction: Standard triple therapy (SST) has been widely used in Helicobacter pylori eradication, but eradication rate is decreasing because of clarithromycin resistance. Recently, Levofoxacin-based therapy (LBT) has been evaluated to overcome the low eradication rate of standard triple therapy and reported eradication rate over 80%.

Aims & Methods: We compared the efficacy and safety of SST group and LBT group for Koreans. Between April 2014 and April 2016, 49 patients in the SST group (amoxicillin 1 g bid, clarithromycin 500 mg bid and omeprazole 20 mg bid for 10 days) and 48 in the LBT group(levofloxacin 500 mg bid, amoxicillin 1 g
bid and esomeprazole 20 mg bid for 10 days) were enrolled, prospectively. H. pylori eradication rate as the primary endpoint and serious adverse effects as the secondary endpoint were defined. 

**Results:** H. pylori eradication rate as the primary endpoint was higher in the LBT group than in the STT group, but there was no statistically significant difference between the two arms (82% vs. 79.7%, P = 0.29). Serious adverse effects as the secondary endpoint tended to be more frequent in the LBT group, but there was no significant difference (6.1% vs. 15.2%, P = 0.267). The overall rates of adverse effects were not different between two groups.

**Conclusion:** In comparison of H. pylori eradication rate of our study, LBT was not significantly higher than STT, but it may be an alternative treatment if STT eradication rate is lowered in Korea.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1910 TREATMENT OF HELICOBACTER PYLORI INFECTION: WILL TAILORING THERAPY FIRST TIME OVERCOME INCREASING FAILURE OF STANDARD TRIPLE THERAPY?**

D. Brennan, M. Hussey, D. Tighe, C. O’Morain, S. Smith, D. Menamara Trinity Academic Gastroenterology Group, Trinity College Dublin, Dublin/Ireland

**Contact E-mail Address:** dbrenna9@tcd.ie

**Introduction:** In Ireland, Helicobacter pylori infection has become increasingly resistant to commonly used antibiotics, such as clarithromycin. Concurrently, eradication rates for standard clarithromycin-based triple therapy have fallen below the 80% deemed acceptable for a given treatment. The aim of this study was to compare eradication rates of standard clarithromycin-based triple therapy with those of tailored therapy based on antimicrobial susceptibility as a first-line treatment for H. pylori infection. Treatment-naive adult patients undergoing endoscopy were prospectively recruited. Biopsies from H. pylori-positive patients (as assessed by CLO test) were processed for sensitivity testing by E-testing and genotyping by the GenoType HelicoDR assay (Hain). Patients randomly received either clarithromycin-based standard triple therapy or tailored treatment based on antibiotic sensitivities, for 7–14 days. A follow-up breath test was performed at least 8 weeks post-treatment.

**Results:** To date 889 patients have undergone endoscopy and 186 (21%) were H. pylori positive. Infected patients were significantly younger (mean age 53 vs 49 years, p = 0.002) and tended to be male (43% vs 53%, p = 0.02). Of 186 H. pylori-positive patients, 112 (60%) were treatment naïve. Culture of H. pylori was successful in 57% (64/112) of samples and primary clarithromycin resistance was 47% (30/64) by E-test. Genotypic resistance data was available for 93% (104/112) patients and 55% (61/114) strains were clarithromycin resistant. Thus far, 99 (88%) treatment naïve patients have been enrolled in the study; 92 (93%) have completed the study. Of these, 45 (46%) have received standard triple therapy and 54 (54%) have received tailored therapy. In the tailored arm, 25 (46%) patients received standard triple therapy, 14 (26%) received levofloxacin-based triple therapy, 13 (22%) received a PPI and combination of antibiotics based on their sensitivities (e.g. levofloxacin, clarithromycin, rifampicin, tetracycline or metronidazole), and 3 (6%) bismuth quadruple therapy. The eradication efficacy of tailored therapy by intention-to-treat analysis was higher at 74% (40/54) compared to 67% (n = 30/45) for standard therapy (p = 0.5). The eradication efficacy by per-protocol analysis was also higher, at 82% (40/49) for tailored versus 70% (30/43) for standard therapy (p = 0.2). Patients in each arm were further categorised by clarithromycin resistance status, phenotypically by E-test or genotypically by the GenoType HelicoDR assay. Of note, in clarithromycin resistant patients, tailored therapy achieved a better eradication rate per protocol analysis than standard triple therapy (83% vs 57% per protocol, p = 0.09).

The eradication rates of standard triple therapy and tailored therapy according to clarithromycin resistance status

<table>
<thead>
<tr>
<th></th>
<th>Standard Arm (n = 45)</th>
<th>Tailored Arm (n = 54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistant resistant</td>
<td>12 (22%)</td>
<td>21 (39%)</td>
</tr>
<tr>
<td>Strain</td>
<td>4 (8%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>Sensitive resistant</td>
<td>33 (58%)</td>
<td>33 (61%)</td>
</tr>
<tr>
<td>Strain</td>
<td>22 (40%)</td>
<td>25 (47%)</td>
</tr>
<tr>
<td>Eradication ITT analysis 12/22 = 55% 18/23 = 78% 19/26 = 73% 21/28 = 75%</td>
<td>12/21 = 57% 18/22 = 82% 19/23 = 83% 21/26 = 81%</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** In those who are sensitive to clarithromycin, standard clarithromycin-based triple therapy achieves an acceptable eradication rate of approximately 81%. However, a high primary clarithromycin resistant rate was observed in this study (47%). In those who are resistant to clarithromycin, prescribing a regimen based antibiotic susceptibilities increases eradication rates to 83%, compared to those treated with standard triple therapy (57%, p = 0.09).

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1912 ARE PROBIOTICS USEFUL AS ADJUVANTS IN ERADICATION THERAPY OF HELICOBACTER PYLORI INFECTION?**

M. Gravito-Soares, E. Gravito-Soares, D. Gomes, N. Almeida, L. Tomé Gastroenterology, Centro Hospitalar e Universitário Coimbra, Coimbra, Portugal, Coimbra/Portugal

**Contact E-mail Address:** ms18498@gmail.com

**Introduction:** Helicobacter pylori (Hp) successful eradication has been considered since it contributes to several gastrointestinal disorders. Sequential therapy has been used widely as the first approach in Hp eradication therapy (HpET). However, its fails in 10–45%. The addition of probiotics has been considered because of potential benefit in the improvement of efficacy and reduction of side effects during HpET. We aimed to evaluate the effect of probiotics, as adjuvant to sequential HpET on treatment efficacy, side effects and patient compliance. This was a prospective study of total of 1159 patients followed in a gastroenterology outpatient clinic. Selected patients underwent Hp screening for unexplained gastrointestinal symptoms or disorders with HpET indication. Compared patients undergo sequential therapy (10-day treatment of 5 days of pantoprazole + amoxicillin followed by further 5 days of pantoprazole + clarithromycin + metronidazole-G1:n = 85) and patients with additional supplement of Lactobacillus reuteri+probiotics therapy 2tablets/day in previous two weeks and during treatment (G2:n = 77), since it was approved for this indication. Screening Hp test and indication, eradication rate, auto-reported side effects and patient compliance were evaluated. The overall screening Hp test, 147(55.5%;147/265) were positive, being the majority obtained by gastric biopsy (86.0%;n = 228). The mean age was 58.6 ± 15.8years with women predominance (60.8%;n = 161). The main indications for Hp screening were dyspepsia (27.9%), epigastric pain (24.2%), gastroduodenal peptic ulcerous disease(19.2%) and gastroesophageal reflux disease (15.8%). At gastric biopsies, chronic gastritis was present in 61.5% (n = 163), gastric atrophy in 17.0% (n = 45) and intestinal metaplasia in 7.9% (n = 21), with Hp mild colonization in most cases (58.5%;76/130). Eradication rate was significantly higher in patients who had probiotic supplement (G1-74.1%;G2-92.2%;p = 0.002;OR = 4.132). No significant difference was verified between two groups in relation to side effects (G1-15.3%;vsG2-9.1%;p = 0.094) or patient non-compliance (G1-2.4%;vsG2-
were assigned to one of the following groups: a control group receiving the randomized study, performed in the Gastro Enterology II department on the infection documented on a histological study of gastric biopsies were enrolled sequential therapy on Saccharomyces boulardii to investigate the effects of the side effects.

The eradication of treated group without probiotics (G1–5.9% vs 0.0%; p = 0.031) was performed in the Gastro Enterology II department on the infection documented on a histological study of gastric biopsies were enrolled sequential therapy on Saccharomyces boulardii to investigate the effects of the side effects.

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area, and in clinical practice. A prospective study was performed in a Spanish center recruiting consecutive naive adult patients, candidates to H. pylori eradication. Omeprazole 40mg, Clarithromycin 500mg, Amoxicillin 1g and Metronidazole 500mg, all drugs b.i.d, for 14 days (OCAM); or Omeprazole 20mg b.i.d and 3-in-1 capsule with Bismuth 140mg+ Tetracycline 125mg+ Metronidazole 125mg. 3 capsules q.i.d, for 10 days (3–1-OBMT) were prescribed according to physician criteria. Compliance was assessed by striking the consumed doses in a patient filled template, and adverse effects using a specific questionnaire with a 1–3 intensity scale. Efficacy was determined by 13C-urea breath test. A descriptive study and analysis of efficacy by intention to treat (ITT) were performed. Cases with poor therapeutic compliance (<80%) or no available data were excluded in per-protocol (PP) analysis. Chi2, Student’s t, and Mann-Whitney U tests with significance level p < 0.05 were applied. The protocol was approved by the Ethics Committee. Results: 216 patients (63.43% women; mean age 51.53 ± 19.84 years) were included. OCAM were prescribed in 103 and 3–1-OBMT in 113. No differences in age, sex and functional dyspepsia as indication to eradicate were observed between groups. Main indications for treatment were functional dyspepsia (39.35%), gastroduodenal ulcer (19.44%) and non-investigated dyspepsia (13.89%). Compliance was >80% in 11 patients and unknown in 7. The efficacy outcome was unavailable in 9 subjects. Compliance >80% was attained in 92% with OCAM and in 93.53% with 3–1-OBMT (p=0.64). The ITT rates were 82.52% vs 85.84% (p = 0.63), and PP 89.47% vs 96.04% (p = 0.13), for OCAM and 3–1-OBMT respectively. The outcomes of adverse effects (frequency, number, duration and intensity) are shown in the Table.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Maximum Intensity [%]</th>
<th>Number</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCAM 96.97</td>
<td>4.08 (2.49)</td>
<td>10.07 (4.6)</td>
<td>3.61</td>
</tr>
<tr>
<td>OBMT 91.51</td>
<td>3.92 (2.6)</td>
<td>6.02 (3.43)</td>
<td>7.14</td>
</tr>
<tr>
<td>p-value 0.17</td>
<td>0.70</td>
<td>&lt;0.0001</td>
<td>0.0149</td>
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</tbody>
</table>

Conclusion: A high clarithromycin resistance area, 14-days OCAM and 10-days 3–1-OBMT regimens achieve high and similar compliance and efficacy rates, but 3–1-OBMT provides a superior safety profile.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1917 MANAGEMENT OF HELICOBACTER PYLORI INFECTIO
AT PRIMARY CARE LEVEL. THE IMPLEMENTATION OF SPECIFIC COU
SELLING IMPROVES ERADICATION RATES
V. Laredo1, T. Arroyo Villarino2, E. Alfaro3, C. Sostres4, A. Lanás5
1 University Hospital Lozano Blesa, Zaragoza/Spain
2 University of Zaragoza School of Medicine, Zaragoza/Spain
3 Biosanitary Research Institute Aragón (IIS Aragón), Zaragoza/Spain

Contact E-mail Address: vlaredodelatorre@gmail.com

Introduction: We have detected a large increase of urea breath test (UBT) requests for Helicobacter pylori (Hp) diagnosis by primary care physicians (PCP). In this way, most Hp-infected patients are now being managed at primary care level. However, little is known about outcomes of Hp infection by PCP.

Aims & Methods: 1. To evaluate and compare the eligibility of UBT indications, treatment regimens and eradication rates between PCP and gastroenterology specialist (GS). 2. To evaluate the effect of introduction of specific counselling to PCP in the management profile of Hp infection. First, we prospectively included 500 consecutive UBT indicated by PCP (250) and GS. Appropriate UBT indications were considered those included in the 3rd Spanish Consensus Conference on Helicobacter pylori infection (1). Hp treatment prescribed and eradication rates were collected retrospectively. Finally, we analyzed another consecutive 240 UBT and treatment outcomes after the introduction of specific counselling to PCP (a personal letter with the accepted indications for UBT and treatment issued by their referent GS). Statistical analysis was performed using SPSS (version 22.0).

Results: We have analyzed 740 UBT (500 pre-intervention and 240 post- intervention). 66.80% women, mean age of 48.08 ± 21.44 years. Most were included in the rest were indicated after previous eradication treatment. Inappropriate indication of UBT in the pre-intervention cohort was significantly higher in those tests requested by PCP compared to GS (36.4% vs 7.2%; p < 0.001). Also, inappropriate treatment regimens were significantly higher in the PCP group (65% vs 26.4%; p < 0.0001). Consequently, eradication rates were significantly lower in PCP compared to GS group (57.1% vs 81.1%; p < 0.001). A significant increase in the adherence to appropriate treatment regimens (71% vs 35%; p < 0.0001) and eradication rates (78% vs 57.1%; p < 0.0001) were observed in the PCP group after the implementation of specific counselling based on national guidelines.

Conclusion: Hp infection management at primary care level is inappropriate with high costs and inefficiency. The introduction of a specific counselling to PCP has significantly improved these outcomes. These data should encourage the implementation of interventional strategies in order to reduce the actual increase in antibiotic resistance.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

WEDNESDAY, NOVEMBER 01, 2017/09:00-14:30 SMALL INTESTINAL III - HALL 7

P1918 VALPROATE AND CHIR 99021 AMELIORATES RADIATION-INDUCED INTESTINAL EPITHELIAL INJURY IN MOUSE MODEL
Y. Kim, J.S. Shin
Internal Medicine, Division Of Gastroenterology, Korea Cancer Center Hospital, Seoul Korea, Republic of

Contact E-mail Address: younjoo282@gmail.com

Introduction: Radiation-induced gastrointestinal syndrome (RIGS) stems from the clonogenic loss of crypt cells and villi depopulation and results in mucosal barrier disruption, bacterial invasion, inflammation and sepsis. Valproate (VPA) is the one of the popular anti-convulsants, recently its Notch signal modulatory effect has been reported. Notch signal pathway is the essential for epithelial proliferation. Considering their clinical application such as safety, ex vivo culture techniques for single crypt or a stem cell derived enteroid, with essential features of the in vivo tissue architecture, have been recently developed. Thus, we have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS. Aims & Methods: We have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS. To culture enteroid, ten centimeters segments of jejunum were procured from 9–13 week-old C57BL/6 mice. Crypts were isolated by EDTA chelation, suspended in Matrigel and grown in culture media containing epidermal growth factor, noggin, R-spondin 1. After 1 day in culture, the enteroids were treated (or not) 3 mM CHIR 99021 (GSK3β inhibitor) and 1 mM VPA. On day 3, the enteroids were irradiated as a dose dependent manner. The evaluation of irradiated enteroids was performed by measuring MTT assay, budding efficiency of enteroid, and EdU staining. On post-irradiation Day 2 and Day 7, RT-PCR was performed.

Results: Enteroid from mouse had multiple crypts (‘budding’) with well-differen-
tiated goblet, Paneth cells, + stem cells (quiescence stem cells, BMII is expressed), Lgr5+ stem cells. In the response of radiation, irradiated enteroid decreased proliferation rate in a dose dependent manner, as measured by MTT assay, budding efficiency of enteroids. Irradiated enteroids with VPA +CHIR 99021 could maintain their +stem cells even in 10 Gy of irradiation, lethal dose of mouse intestinal epithelium, and they were able to proliferation. Combination of VPA + CHIR 99021 did not have an effect on paneth cells, enteroid, mucus cells and goblet cells.

Conclusion: VPA and CHIR 99021 may ameliorate RIGS in ex-vivo mouse enteroid, through +reversor stem cell reservation and stimulatory action for epithelial proliferation. Considering their clinical application such as safety, they could be possible strategy for prevention and treatment of RIGS.

Disclosure of Interest: All authors have declared no conflicts of interest.

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mant for the restoration of abdominalpelvic severe chronic damages induced by radiotherapy.
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7. Gastroenterology 2012;143:1266–1276 Crypt Base Columnar Stem Cells in Small Intestines of Mice Are Radioresistant
P1919 PREVALENCE OF CELIAC DISEASE AMONG RELATIVES IN ALGERIA
L. Kivela*, S. Alin1, S. Kröger*, K. Kaukinen1, K. Kurppa2
1Tampere Center For Child Health Research, University of Tampere and Tampere University Hospital, University of Tampere/Finland
2School Of Medicine, University of Tampere, Tampere/Finland
Contact E-mail Address: liisa.kivela@fimnet.fi
Abstract: Celiac disease affects 1-2% of the population, but due to diverse presentation many patients remain unrecognized. Diagnostic efficiency could be improved by screening of at-risk groups, but long-term benefits of this approach are unclear. To shed light to this issue, we compared a variety of celiac disease-related and other parameters in large cohorts of adult patients diagnosed in childhood either because of clinical suspicion or by screening.
Aims & Methods: A questionnaire about current health and lifestyle, adherence to gluten-free diet (GFD) and follow-up of celiac disease was sent to 564 adults with childhood diagnosed celiac disease. Further, the participants fulfilled validated Gastrointestinal Symptom Rating Scale (GSRS) and Psychological General Well-Being (PGWB) surveys for symptoms and quality of life. Clinical and histological presentation at diagnosis and other relevant medical data were confirmed from patient records. All variables were compared between screen-detected and clinically detected patients.
Results: Altogether 235 (42%) adults completed the questionnaires. At diagnosis, screen-detected patients (n = 49) were older (11.3 vs 8.8 yr, p = 0.016) and had lower body mass index (BMI) (22.8 vs 26.8 kg/m2, p = 0.001), less symptoms (44% vs 85%, p = 0.016) and higher prevalence (15% vs 0.2%, p = 0.001) than clinically detected patients (n = 186). They also had a trend to have less often total vitiligo (18% vs 32%, p = 0.073) and anemia (18% vs 32%, p = 0.072). The groups did not differ in gender, current age (median 26.5 vs 26.1 yr, p = 0.83) or age at diagnosis (median 6.3 vs 5.5 yr, p = 0.18). Screening-detected patients smoked less (4% vs 15%, p = 0.037) and had more often celiac disease in relatives (78% vs 58%, p = 0.011).
Conclusion: Diagnostic approach and presentation of celiac disease in childhood do not seem to affect the long-term health outcomes or attitude towards the diagnosis in adulthood. Lack of difference in the dietary adherence and lifestyle recommendations gives further support for active screening and early diagnosis of celiac disease.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1922 SERUM MICROBIAL MARKERS IN NONRESPONSIVE CELIAC DISEASE
L. M. Viitasalo1, K. Kurppa1, H. Huhtala1, M. Mäkiti1, K. Kaukinen1, S. Iltanen1, D. Vani, M. Sprakes, F. Greenhalgh3
1Center For Child Health Research, University of Tampere and Tampere University Hospital, Tampere/Finland
2Faculty Of Social Sciences, University of Tampere, Tampere/Finland
3Department Of Internal Medicine, Tampere University Hospital, Faculty of Medicine and Life Sciences, University of Tampere, Tampere/Finland
Contact E-mail Address: liisa.viitasalo@uta.fi
Abstract: In nonresponsive celiac disease (NRCD) the symptoms and duodenal biopsy do not improve with a gluten-free diet (GFD). Serum microbial markers (ASCA and IgA class antibodies against transglutaminase (TG) and heat Shock proteins) have been proposed as biomarkers of NRCD. The objective of this study was to evaluate serum microbial markers in NRCD in comparison with non-NRCD CD patients and non-celiac controls (NCC).
Aims & Methods: Serum ASCA, IgA class TG antibodies, and IgA class heat shock protein OmpW were measured in 20 NRCD patients, 20 GFD responsive CD patients, and 55 non-celiac controls. The NRCD group was compared to the GFD responsive CD group as well as the NCC group.
Results: ASCA was detected in 8 out of 20 NRCD patients (40%), 15 out of 20 GFD responsive CD patients (75%), and 39 out of 55 non-celiac controls (71%). ASCA titers were significantly higher in NRCD patients than GFD responsive CD patients (p = 0.0009) or NCC (p < 0.001). Anti-TG antibodies were detected in 19 of 20 NRCD patients (95%), 18 of 20 GFD responsive CD patients (90%), and 22 of 55 non-celiac controls (40%). AntitTG antibodies were significantly more frequent in NRCD patients than GFD responsive CD patients (p = 0.001) or NCC (p < 0.001) and significantly more frequent in GFD responsive CD patients than NCC (p = 0.002), indicating that NRCD patients were distinguishable from controls. Of the 20 GFD responsive CD patients, 7 had ASCA (35%) and 10 had anti-TG antibodies (50%). In NCC, 9 had ASCA (16%) and 11 had anti-TG antibodies (20%). These results suggest that ASCA is a sensitive but not a specific marker of NRCD.
Conclusion: ASCA and anti-TG antibodies may be useful in distinguishing NRCD from non-celiac controls, but not from GFD responsive CD patients. Further studies are needed to confirm these findings and to identify other serum microbial markers that are specific for NRCD.
Disclosure of Interest: All authors have declared no conflicts of interest.
P1923 CORRELATION BETWEEN OXIDATIVE STRESS AND DUODENAL ATROPHY IN CELIAC DISEASE

F. Ferretti1, F. Branchi2, L. Ronconori2, S. Moretti3, A. Vezzoli3, S. Mirkacic-Sposta3, V. Lombardo1, D. Conte1, L. Elii2

1Center For The Prevention And Diagnosis Of Celiac Disease, Gastroenterology And Endoscopy Unit, Fondazione IRCCS Ca` Granda Ospedale Maggiore Policlinico, Milan/Italy
2Gastroenterology And Endoscopy Unit, Fondazione IRCCS Ca` Granda Ospedale Maggiore Policlinico, Center for the Diagnosis and Prevention of Celiac Disease, Milan/Italy
3Institute of Bioimaging and Molecular Physiology, National Council of Research (CNR), Sezrate (MI)/Italy

Email: francesca.ferretti01@gmail.com

Introduction: High levels of reactive oxygen species (ROS) and impaired antioxidant defense systems lead to oxidative stress (OSx) and tissue injury in different intestinal and extraintestinal conditions, including celiac disease (CD). A possible effect of gluten ingestion on intracellular oxidative imbalance has been suggested.

Aims & Methods: The first aim of the study was to investigate the effects of OSx in CD, evaluating the levels of ROS and oxidative damage biomarkers in sera of naive patients (N-CD), coeliac patients on a gluten-free diet (GFD) including responders (CD-GFD) or non-responders (NRCD) to dietary treatment. The second aim was to look for new serological biomarkers corresponding to morphological/functional alterations detected in biopsies according to Marsh-Oberhuber classification. Finally, a possible correlation between ROS production and/or biomarkers of OSx and/or hematological data was investigated. Analysis were conducted on small intestinal biopsy specimens and peripheral blood samples of celiac patients (N-CD, CD-GFD and NRCD). The methods included Electron Paramagnetic Resonance (EPR) technique for ROS detection, High Performance Liquid Chromatography (HPLC) analysis of erythrocytes glutathione (GSH), enzymatic assays for oxidative damage biomarkers (lipid peroxidation measured by thiobarbituric acid-reactive substances (TBARS) method); protein oxidation, measured by a protein carbonyl (PC) assay kit; total antioxidant capacity (TAC), measured by an enzymatic kit; nitric oxides metabolites, assessed by a competitive method.

Results: Overall, blood samples and biopsies from 54 patients affected by CD were collected (44 F; median age 43.98 ± 13.44 years; range 19–80 years; 17 N-CD, 18 CD-GFD and 19 NRCD). Hemoglobin and haematocrit levels were significantly lower in NRCD and N-CD than in CD-GFD group (p < 0.05). In our study, a significantly increased production of ROS, lipid peroxidation and oxidized protein levels, plasma nitrate concentrations were reported in NRCD and N-CD compared to CD-GFD. On the contrary, the TAC and GSH levels were significantly decreased in N-CD and NRCD groups compared to CD-GFD. Data are summarized in Table 1. A significant direct relationship between Marsh subtypes and ROS production rate R² = 0.19; p < 0.001, TBARS (R² = 0.20; p < 0.001) and PC (R² = 0.17; p < 0.001) was found by Pearson’s product-moment correlation while an inverse correlation between Marsh subtypes and TAC (R² = 0.23; p < 0.001) and GSH (R² = 0.34; p < 0.0001) was identified. In all groups of patients, at higher ROS production rate levels corresponded to greater plasma TBARS concentrations and lower erythrocytic GSH levels.

Conclusion: Several defense mechanisms are implied in maintaining the cell integrity and tissue homeostasis. According to our results, the presence of higher levels of ROS, oxidative damage biomarkers and nitric oxides metabolites in naïve and/or biomarkers of OxS and/or hematological data was investigated. Analysis were conducted on small intestinal biopsy specimens and peripheral blood samples of celiac patients (N-CD, NRCD and CD-GFD) or non-responders (NRCD) to treatment. All authors have declared no conflicts of interest.

References

Contact E-mail Address: efkan78@gmail.com

P1924 CIRCULATING EXTRACELULAR VESICLES, A NOVEL MECHANISM OF ENDOCRINE CELLULAR CROSS-TALK, ARE INCREASED IN NEWLY DIAGNOSED CELIAC DISEASE PATIENTS


Email: Contact E-mail Address: efkan78@gmail.com

Introduction: Extracellular vesicles (EVs) have been recently hypothesized to represent a major peripheral mechanism of cellular cross-talk. EVs carry surface receptors and proteins characteristic of their cells of origin and shuttle molecules (proteins, RNAs, microRNAs) potentially controlling physiological and patho- logical systemic processes. Recent studies have demonstrated an increased number of circulating EVs in a variety of conditions characterized by multi-organ impairment and/or damage such as insulin-resistance, atherosclerosis and obesity. Celiac disease (CD) is an immune-mediated inflammatory enteropathy, elicted by gluten ingestion in genetically susceptible individuals. It is frequently associated with a variety of systemic conditions both autoimmune and potentially immune-mediated in nature.

Aims & Methods: The aim of this study was to assess and characterize patterns of circulating EVs in newly diagnosed CD patients. We enrolled consecutive adult anti-TTG positive, biopsy proven CD patients. Circulating EVs were identified untouched on whole blood samples by a no-lyse/no-wash method, combined with EVs volumetric count (FACSVerse, BD), based on a novel six-colour flow cytometry panel, in order to identify and enumerate both the total EV compartment and different EV subpopulations. Data are expressed as mean ± SD and statistical differences were evaluated by means of T-test.

Results: We evaluated 12 celiac adults (mean age 42.9 ± 19.1 vs. 40.8 ± 15.9 years, F/M = 4:1) at diagnosis and 12 age- and sex-matched healthy controls. Histology was considered positive for lesions of grade ≥B1 according to the Corazza-Villanacci classification. Mean anti-TTG levels at diagnosis were 6.9 ± 3.8 times U/L. Mean number of total circulating EVs was significantly higher in CD than in controls (59895 ± 14383 vs. 10018 EV/microL, p = 0.035). Subgroup analysis showed that EpCAM+ EVs, of epithelial origin, and CD41+ platelet-derived EVs were not significantly different between CD and controls (894 ± 1004 vs. 548 ± 1237 and 3052 ± 1563 vs. 1734 ± 1310 respectively, p = ns). On the contrary, CD45 + EVs, of leucocyte origin, showed a significantly higher number of EVs compared to controls (460 ± 492 vs. 119 ± 0.026).

Abstract No: P1923

Data on levels of ROS and oxidative damage biomarkers in sera of naïve patients (N-CD), coeliac patients on a gluten-free diet (GFD) including responders (CD-GFD) or non-responders (NRCD) to treatment.
Conclusion: Celiac disease patients at diagnosis show higher numbers of circulating T cells compared to age-matched controls. Phenotypical assessment suggests that this increase is not primarily driven by epithelial or endothelial damage. On the contrary, the increased numbers of leucocyte-derived EVs, suggest their potential implication in systemic signaling.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1925 COELLIAC DISEASE AND REPRODUCTIVE DISORDERS: IS THERE ANY CORRELATION

H. Boutallaka1, I. Benelharghadi, F.Z. Ajana
Medecine C, Ibn Sina University Hospital, Rabat-Morocco

Contact E-mail Address: hanaeboutallaka@gmail.com

Introduction: The coeliac disease is an autoimmune enteropathy induced by the ingestion of gluten (Corn, barley, rye), that occurs in individuals who are genetically predisposed primarily affecting the small intestine inducing atrophic lesions, which are recessive with a gluten-free diet. The classic form is actually a minority of patients. The extraintestinal forms are currently the most found, with varied manifestations including reproductive disorders. The aim of our study is to evaluate the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

Aims & Methods: It's a single-center, retrospective and descriptive study including 241 patients with coeliac disease enrolled within period of 17 years from 1995 to 2016 in the department of Gastroenterology « Medecine C » in Ibn Sina University Hospital.

Results: About 241 patients suffering from coeliac disease, 58 patients presented reproductive disorders, either 28.9%. Recruiting 53 women and 5 men, with a sex ratio M/F of 10.6. The mean age was 32.25years ranging from 13 to 59years old.

The diagnosis of coeliac disease was based on: Histology (severe or partial Villous atrophy with intraepithelial lymphocytosis exceeding 30%), the antienzymatic antibodies and/or antitransglutaminase antibodies positive. The reproductive disorders were never isolated but always associated with digestive or extraintestinal signs at the time of the diagnosis of coeliac disease. These disorders were sometimes resolved in 11 cases (19%), secondary amenorrhea in 13 cases (22.4%), Metrorrhagia in 12 cases (20.6%), absence of development of secondary sexual characters in 8 cases (12.5%), spontaneous abortion in 7 cases (10.9%), menometrorrhagia in 4 cases (13.8%), primary sterility in 5 cases (8.6%), precocious menopause in 6 cases (10.3%), premature labour and/or IUGR in 3 cases (5%), primary amenorrhea in 2 cases (3.4%), and intrauterine Fetal death IUFD in one case (1.7%). All our patients benefited from a gluten-free diet. 15 patients were excluded from the study, 2 patients died, and 12 patients did not follow-up. Of the patients who stayed, the evolution of the reproductive disorders under gluten-free diet was good in 26 cases (90%), with normalization of the cycles in 15 cases, the cycle was returned in 6 cases, development of secondary sexual characters in 2 cases, fertility was returned in other cases, the patient developed her cycle after primary amenorrhea, and one case was delivered a baby in term after a repeated premature delivery. The evolution was good in 3 cases as regard missed abortion four years after the gluten-free diet in 1 patient, and amenorrhea continued in 2 cases.

Conclusion: Reproductive disorders related to the coeliac disease were frequent and variable. In our study, these disorders well responded to the gluten-free diet in 90% of cases, and these disorders were reversible under gluten-free diet.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1926 SEVERITY OF MUCOSAL DAMAGE AND TISSUE TRANSGLUTAMINASE ANTIBODY LEVELS CORRELATE WELL IN ADULT CELIAC DISEASE IRRESPECTIVE OF CLINICAL FEATURES

R. Maxim1, A. Trifan2, A. Plesa2, S. C. Oana Cristina1, I. Ciortescu2, I. Girleau2, C. Stanciu1

1University of Medicine and Pharmacy "Grigore T. Popa", Faculty of Medicine, Iasi, Romania
2Institute Of Gastroenterology And Hepatology, "Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania
3Institute of Gastroenterology and Hepatology, Iasi, Romania

Contact E-mail Address: ancatrifan@yahoo.com

Introduction: Celiac disease (CD) is a chronic imune-mediated enteropathy that occurs in genetically predisposed individuals. The clinical phenotypes ranges from classical gastrointestinal manifestations to only atypical signs, thus making the clinical diagnosis a challenge. The aim of the study was to investigate the relationship between duodenal histology, specific antibody levels and clinical presentation in adult CD Romanian patients.

Aims & Methods: Diagnostic renal retrieval of information prospectively entered into a structured database including 81 adult patients diagnosed with CD hospitalized at the Institute of Gastroenterology and Hepatology, “St. Spiridon” Hospital, Iasi between January, 2012- December, 2016 admitted with symptoms of abdominal disturbances (diarrhea, heartburn, nausea, vomiting, regurgitation, abdominal pain). Demographic, clinical, serological, and histological characteristics of individuals with CD were reviewed.

Results: The study group included 81 adult patients with a female: male ratio of 3:1, 60(71.1%) female patients, mean age 40.02 ± 12.14 years. A total of 61% patients presented with gastrointestinal (GI) complaints and 51.9% of patients presented mostly with non-GI manifestations, and advanced age of symptom onset in the latter category (38yrs vs 47yrs).

Marb-Obverhuber classification was used to assess mucosal injury and Marsh 3c lesions were found in 25 (30.9%) cases. When assessing the serological parameters, IgA anti-tissue transglutaminase (IgA-tTG) antibody (61.45 ± 7.465 u/mL vs 162.02 ± 106.179 u/mL, P = 0.001) and IgA anti-gliadin antibodies (IgA-AGA) levels (61.83 ± 69.41 u/mL vs 77.15 ± 71.02 u/mL, P = 0.001) correlated with intestinal villous atrophy (Marsh 3a and 3c) in CD patients by Spearman rank correlation. Among symptoms, abdominal distention and diarrhea were associated with abnormal histology. Hemoglobin levels were evaluated and anemia was diagnosed in 61.7% patients among patients with elevated IgA-tTG levels (r = -0.316, P = 0.004), IgA-AGA (r = -0.301, P = 0.006) and Marsh 3b-c lesions (P = 0.0084). Among biological markers included in the statistical analysis, low iron levels (cut off 30mg/dl), hypocholesterolemia and low protein levels were associated with Marsh 3 b lesions (P = 0.008) and elevated IgA-IgA titers (r = -0.384; P = 0.001). Correlation between IgA-tTG and AGA levels correlate with duodenal villous atrophy in adult CD patients. An IgA-tTG iter > 160 was nearly always associated with severe histopathology. GI and non-GI symptoms are not reliable predictors of CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1927 ASSOCIATION OF CELIAC DISEASE AND PATENT FORAMEN OVALE

M. Seziki1, G. Dindar2, D. Karacimen3, S.B. Acikgoz1
1Department Of Gastroenterology, Health Sciences University Kocer University Derince Education and Research Hospital, Kocaeli/Turkey
2Department Of Cardiology, Izmit Seha State Hospital, Kocaeli/Turkey
3Internal Medicine, Health Sciences University Kocer University Derince Education and Research Hospital, Kocaeli/Turkey

Contact E-mail Address: drseziki@hotmail.com

Introduction: Celiac disease (CD) is an immunologically-mediated enteropathy that triggered by the intake of gluten-containing foods in genetically predisposed individuals. It causes intestinal and extraintestinal manifestations. Extraintestinal findings are observed in many systems. The prevalence of extraintestinal findings in CD patients was about 18% (1). The impact of CD on the cardiovascular system of celiac disease is not clearly known and the correlation between them has not been yet obviously explained. There is also no data in the literature regarding the association of patent foramen ovale (PFO) and celiac disease, which is 10-25% common in the general population. We performed an echocardiography study to determine the frequency of accompanying cardiovascular findings in our patients with celiac disease. In this article, we aimed to share the frequency of the PFO detected in celiac patients with high results.

Aims & Methods: Between May-June 2015, 65 patients who applied to the gastroenterology clinic of Derince Education and Research Hospital and followed up with celiac disease were identified. The sociodemographic characteristics, celiac disease diagnosis duration, symptoms and complaints, accompanying diseases, drug use histories, hemogram and biochemical parameters of these patients were recorded. The patients underwent saline contrast transesophageal echocardiography in the cardiology clinic. Patients’ data were recorded. The obtained data were evaluated with appropriate statistical methods.

Results: Sixty-five celiac patients were included in the study, 21 (32.3%) male and 44 (67.7%) female. The mean age of the 29 patients who underwent transesophageal echocardiography study was 41.3 ± 14.1 years. PFO was detected in 39 (60%) of the patients. There was no difference in the incidence of PFO in between male and female patients. (61.9% and 59.1% respectively, p=0.829). Compared with the frequency of PFO in the general population, the incidence of PFO in celiac patients was higher. (25% and 66% p=0.006).

Conclusion: As a result, the incidence of PFO is more prevalent in celiac patients than in the general population. For this reason, the evaluation and treatment of the PFO, which may be the cause of cerebrovascular, cardiovascular or other disorders in clinical follow-up of patients, are required. In addition, the high incidence of PFO in celiac patients suggests that celiac disease is a factor affecting the development of patients from intrauterine period. Because our patients did not undergo transesophageal echocardiography, this rate may be less than real exist. For this reason, further evaluation is required with a wider patient group and by transesophageal echocardiography.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1928 USEFULNESS OF BULB BIOSPY SAMPLES IN CELIAC DISEASE DIAGNOSIS IN ADULTS

D.V. Balaban1, A. Popp2, J. Taavela1, K. Laurila1, M. Mäki2, M. Jinga1
1Carol Davila University of Medicine and Pharmacy, Bucharest/Romania
2Center For Child Health Research, University of Tampere and Tampere University Hospital, Tampere/Finland

Contact E-mail Address: vbalaban@yahoo.com

Introduction: Celiac disease (CD) guidelines recommend sampling of both the bulb and distal duodenum for diagnostics. This has been reinforced by the recent data on ultra-short CD [1]. However, it has been previously shown in pediatric CD that bulb specimens are frequently of poor quality due to the fibrotic morphology in the duodenal bulb in non-celiac patients also, and it can lead to false-positive diagnoses [2]. Our aim was to address the same issue in adult CD, using the same validated morphometric methods [3].

Aims & Methods: We prospectively recruited cases of clinically recommended upper GI endoscopy; all patients also had signs and symptoms of CD and were checked for CD serology (serum tissue transglutaminase 2 antibodies and endomysial antibodies) and biopsy sampled according with current
recommendations. Paraffin embedded biopsy samples were assessed for villous height (VH)/crypt depth (CD) and VHC/D ratio. The corresponding frozen duodenal samples were assessed for duodenal IgA deposits targeting transglutaminase 2 (TG2-IgA), density of CD (cut-off 37 cells/mm epithelium) and γδ T cell receptor bearing intraepithelial lymphocytes (IELs) (cut-off 4.3 cells/mm epithelium). The study was approved by the Local Ethical Committee.

Results: Altogether 41 patients, mean age 45±14 years, 61% female, were recruited. Among these, 21 were finally diagnosed as adult CD (mean TG 156 U/l, mean CD 50% and crypt hyperplastic mucosal lesion in distal duodenum) and the rest 20 were non-CD controls (serum negative and normal on distal duodenal biopsy). All patients were on a gluten-containing diet. Quality of bulk biopsy samples was unsatisfactory and unreadable in 67% of CD cases and 50% of controls, even after reorientations and recuttings. All CD patients had, when measurable, VH:CrD < 2 in the anatomical bulb (average 0.31, range 0.02-0.61). On the other hand also non-CD controls had a crypt hyperplastic diseased bulb mucosa in 80% of patients (average VH:CD 1.65, range 0.7-4.1), but the injury was more severe in CD (p = 0.0006). Villous atrophy was significantly higher in CD compared to controls (CD3 81.87 vs. 34.05, p < 0.01; γδ IELs 129 vs. 6.44, p < 0.01). Bulb IgA deposits were positive in all CD patients and were able to discriminate CD cases from disease controls.

Conclusion: As reported in previous, bulk biopsy samples in adults are frequently of poor quality and not reliable for accurate histomorphological measurements. Also, interpretation of results from bulk samples should be done with caution, as non-CD patients may have mild injury in the bulb lining and could be misinterpreted as CD. Assessment of bulb TG2-IgA subepithelial deposits is a powerful tool to confirm CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

3. Tavael J, Popp A, Vuthala H, Huhtala H. Ulcers are currently explored. In this setting, we evaluate Sintomax™, a POCT detecting deamidated gliadin peptide antibodies, with the goal to identify patients that need for duodenal biopsies prior to surgery. Thus, the goal was to establish a test allowing to guide the endoscopic decision to collect duodenal biopsies.

Aims & Methods: Prospective investigator-initiated multi-center study in six adult gastroscopy and two pediatric gastroscopy centers in Berlin and Brandenburg, Germany, approved by the local ethical committees. Finger prick blood of patients registered for gastroscopy and eligible for the study (exclusion: defective coagulation, established celiac disease or on gluten-free diet) was analyzed by the POCT (IgA and IgG for deamidated gliadin peptides; Sintomax™ test, Tillotts, Switzerland). Test results were compared with duodenal histology (Marsh classification). In POCT-positive individuals transglutaminase-IgA serology was performed.

Results: Analysis was performed on n=721 adult patients (average age: 48 yrs) and n=108 pediatric patients (average age: 11 yrs). In the adult cohort 45 POCT tests were judged as “positive”. Within the POCT positive, 6 Marsh III cases were detected. None of the 676 POCT-negative individuals revealed CD. Therefore, the prevalence of CD in this population was 0.8%. The POCT-specificity in this group was 94% (95%-CI 92–96%), the sensitivity was 100% (95%-CI 51–100%). In the pediatric cases 21 POCTs were judged as “positive” with 13 being true-positive. Of the 87 negative POCTs, 68 were true-negative, but 4 were false-negatives. Thus, the prevalence of CD in the pediatric gastroscopy was 16%. However, sensitivity in this group was only 76% (CI 50–93%) and specificity 91% (CI 83–96%). Examiners at various centers suggested, that “false” bands in the POCT analysis might contribute to interpretation failures.

Conclusion: A screening test-like a POCT in CD-needs to perform optimally especially in sensitivity. In the adult population all CDs were detected by the POCT. However, the CD prevalence in this group was low. In the pediatric group it was not revealed a critically low sensitivity, either due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1930 QUALITY STANDARDS IN COELIAC DISEASE: A RETROSPECTIVE EVALUATION IN A SINGLE SPECIALIST CLINIC

M. Fitzpatrick1, S. Nichols2, E. Soilleux2, S. Travis3
1Translational Gastroenterology Unit, Nufield Department of Medicine, University of Oxford, Oxford/United Kingdom
2Department Of Nutrition And Dietetics, John Radcliffe Hospital, Oxford/United Kingdom
3Gastroenterology Department, John Radcliffe Hospital, Oxford/United Kingdom

Contact E-mail Address: mebfitz@gmail.com

Introduction: Quality standards in coeliac disease management were recently published by the National Institute for Health and Care Excellence. These specify a new 6-week target for the time from referral to endoscopy, which was previously covered by the 18-week referral to treatment (RTT) pathway. They also state that all newly-diagnosed patients should discuss a gluten-free diet with a specialist dietitian. We retrospectively evaluated practice in the Oxford University Hospitals NHS Foundation Trust coeliac clinic against these criteria, and against national guidelines (duodenal bulb sampling at endoscopy and screening for nutritional deficiency).

Aims & Methods: The medical records of 110 patients referred to our clinic between September 2015 and September 2016 were examined. The date of referral and endoscopy were recorded, along with relevant demographic, clinical and laboratory data. Information were collected and analysed in Microsoft Excel.

Results: Eighty-five patients (68% female, median age 34) were seen with suspected or newly-diagnosed coeliac disease, of whom 76 (89%) were referred with positive coeliac serology and would be subject to the 6-week target. Six patients declined or delayed endoscopy, and endoscopy or referral information were not available for 4 patients. For the remaining 66 patients, median time from referral to endoscopy was 12 weeks (SD 37 days), with 59 patients (89%) within 18 weeks, but only 11 patients (17%) within 6 weeks (Figure 1). Duodenal bulb biopsies were taken at endoscopy in 31 patients (44%). A diagnosis of coeliac disease was made in 74 (87%) of all patients, referred, of whom 67 (90%) were referred to a specialist dietitian. Haematinics (iron studies, vitamin B12 and folate) were measured in 67 patients (90%), bone densitometry was measured in 51 patients (69%) and all patients were offered a follow-up appointment in the coeliac clinic. Iron deficiency was found in 31 patients (45%) of patients tested, folate deficiency in 12 patients (18%), vitamin B12 deficiency in 5 patients (8%), and vitamin D deficiency in 23 patients (38%). Osteoporosis was diagnosed in 5 patients (10%) and osteopenia in 10 patients (20%).

Conclusion: Appropriate dietitian referral, specialist follow-up and screening for nutritional deficiency and bone disease occur within the Oxford coeliac disease service. Compliance with recommended biopsy protocols was only 44%. Whilst most referrals met the previous 18-week RTT pathway, few would have met the new quality standards.

Disclosure of Interest: M. FitzPatrick: Michael FitzPatrick is supported by an Oxford-Celgene Research Fellowship funded by Celgene Corporation.

All other authors have declared no conflicts of interest.

References


P1931 MANAGEMENT OF OCCULT OBSCURE GASTROINTESTINAL BLEEDING PATIENTS BASED ON LONG-TERM OUTCOMES

S. Kunihara1, S. Oka2, S. Tanaka1, A. Tsuro1, I. Otani1, K. Chayama2
1Department Of Endoscopy, Hiroshima University Hospital, Hiroshima/Japan
2Department Of Gastroenterology And Metabolism, Hiroshima University Hospital, Hiroshima/Japan

Contact E-mail Address: sayokok@hiroshima-u.ac.jp

Introduction: We previously reported that small-bowel capsule endoscopy (CE) is effective in diagnosing small-bowel lesions with occult obscure gastrointestinal bleeding (OGIB) (Gastroenterol Res Pract. 2013). However, there is no consensus regarding the management of occult OGIB patients without bleeding source revealed by POCT.

Aims & Methods: We aimed to consider management of occult OGIB patients based on the long-term outcomes. A total of 357 consecutive occult OGIB patients (203 men; mean age: 59.7 years) who underwent CE at Hiroshima University Hospital before March 2016 and whose entire small-bowel could be observed and followed-up by CE for at least 12 months, were enrolled. We examined each patient to confirm the positive CE findings rate, the detection rate of bleeding source lesions, the details of bleeding source lesions, the overt
bleeding rate with or without treatment, the rate of anaemia exacerbation (hemoglobin ≤ 9.0 g/dL) 5 years overall survival rate (DSS). Occult OGB is defined as recurrent or persistent iron deficiency anaemia with or without a positive faecal occult blood test and no bleeding findings by esophagogastroduodenoscopy and colonoscopy.

Results: The positive CE findings rate was 44% (157/357) and the detection rate of bleeding source lesions was 27% (98/357). All of the treated bleeding source lesions (Group A) were as follows: angioectasia 61 patients (Yano-Yamamoto classification Type 1a 37 patients, Type 1b 24 patients), non-specific ulcer 15 patients (12 erosional, 3 erosional-ulcer), benign ulcer 18 patients, hemangioma 5 patients, Crohn’s disease 3 patients, primary cancer 2 patients, metastatic cancer 2 patients, gastrointestinal stromal tumour 2 patients, malignant lymphoma 2 patients, others 3 patients. Lesions that were not regarded as bleeding lesions without treatment (Group B) were as follows: angioectasia 25 patients (Type 1a without oozing 25 patients), erythema 31 patients, others 3 patients. There were no patients with overt bleeding in Group B. Although 6 patients (10%) had anaemia exacerbation in Group B (Type 1a), that were not a bleeding source lesion. On the other hand, in both Group A and Group B was 90%. DSS in Group A was 99% and in Group B 100%. One patient in Group A died of a primary small-bowel cancer.

Conclusion: Conclusion: Long-term outcomes with occult OGB patients were good except malignant tumor, because overt bleeding and/or anaemia exacerbation did not occur within the follow-up period. Thus, occult OGB patients without bleeding source lesions, including Type 1a angioectasia without oozing, and erythema, are unnecessary to follow-up with CE in occult OGB patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1932 A PILOT STUDY EXPLORING THE VALUE OF FAECAL IMMUNOCHEMICAL TEST (FIT) WHEN INVESTIGATING ANAEMIA OR OCCULT GASTROINTESTINAL BLEEDING WITH SMALL BOWEL CAPSULE ENDOSCOPY

D. Tighe1, C. Judge1, P. Walsh1, M. Kelly1, A. O’Connorn1, N. Breslin1, B. Ryan1, G. Borun2, D. Menamara2
1Department Of Gastroenterology Trinity Academic Gastroenterology Group (TAGG), AMNCH Tallaght, Dublin/Ireland
2Department Of Clinical Chemistry, AMNCH Tallaght, Dublin/Ireland

Contact E-mail Address: donal.tighe83@gmail.com

Introduction: Small bowel capsule endoscopy (SBCE) is a very useful method of investigating iron-deficient anaemia, or occult gastrointestinal (GI) bleeding. It can identify causes of anaemia or bleeding, such as angiodysplasia, small bowel Crohn’s disease, polyps, lymphoma, and malignant lesions. There is however a need to improve the diagnostic yield, particularly where resources and access to capsule endoscopy are restricted. Faecal immunochromatographic test (FIT) has an established role, in investigating large bowel bleeding, and is incorporated into a number of bowel cancer screening programmes.

Aims & Methods: The aim of our study was to investigate whether FIT could help predict likelihood of small bowel bleeding or other significant pathology at time of small bowel capsule endoscopy. This was a prospective pilot study, performed at our centre from September 2016-April 2017. Indications for enrolment were patients referred for SBCE with the indication of anaemia or occult GI bleeding. Baseline patient characteristics were obtained including age, gender, history of recent blood transfusion requirements and use of anti-platelet/anti-coagulants. Patient haemoglobin (Hb) level was checked on the day of SBCE where possible. Patients were asked to return one completed FIT for further analysis. A cut of 50 ng/ml was chosen as this is the standard cut-off used, in the Irish National Bowel Cancer Screening programme.

Results: A total of 40 patients were enrolled, mean age 55.4 years (range 18-77), 64% were female. A total of 27.6% of patients were on anti-platelet agents or anti-coagulants. 34% of patients had a blood transfusion within the last year. Mean Hb for the cohort was 12.8 g/dL (range 7.8-15.9 g/dL). The average FIT reading was 459 ng/ml (range 0-4426 ng/ml). 30% of patients had a FIT level >50 ng/ml. 46% of patients, had positive findings at SBCE. 9/12 (75%) of patients with a FIT level >50 ng/ml had positive findings at capsule endoscopy; compared to 5/28 (17.8%) for FIT ≤50 ng/ml. p value was 0.002, 95% C.I. 0.29-0.86 O.R. 0.16. These included 4/12 (33%) new cases of Crohns, 3/12 (25%) angiodysplasia, 3/12 (33%) non-BHD enteritis, 1/12 (16.7%) small bowel tumour and 1/12 (16.7%) melena, with no clear source. In addition there was a good correlation between FIT and Haemoglobin levels. 60% of patients with FIT >50 ng/ml were anaemic (Hb <11.5 g/dL), compared to 17% with FIT <50ng/ml, p value was 0.02 95% C.I. 0.09-0.76 O.R. 0.14. Combining Hb and FIT levels, was also informative and predictive of small bowel pathology. 83% of patients, who were anaemic and had a FIT >50 ng/ml had clinically significant findings at SBCE compared to 21% pick up rate in patients with normal Hb and FIT levels, p value was 0.05 95% C.I. 0.22-1.03 O.R. 0.05. Overall the sensitivity for a FIT >50 ng/ml for detecting small bowel pathology was 83% with a specificity of 92%, giving a positive predictive value of 83.3% (95% C.I. 56%-95%). Antiplatelet use was not predictive of a positive FIT as, 16.7% of patients with a FIT >50 ng/ml were on anti-platelet agents, compared to 83.3% who weren’t.

Conclusion: FIT is useful at predicting clinically significant small bowel pathology at the time of capsule endoscopy. It may help better identify and prioritise patients who would best benefit from referral.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: Our aim in this study is to examine the prevalence of the different manifestations portal hypertensive enteropathy and it’s correlation with the Child-Pugh score (CTP) in cirrhosis using video capsule endoscopy (VCE). At a single center, we performed a retrospective chart review study of patients between the age of 18 and 80 with cirrhosis, who had VCE study between January 2010 and January 2016. Based on the published literature we divided the portal hypertensive enteropathy lesions in our study into vascular lesions (arteriovenous malformation (AVM), red spots, bleeding or varices) and mucosal lesions (mild inflammatory changes or severe inflammatory changes which are a mosaic, congested and friable mucosa).

Results: 100 patients with cirrhosis had a VCE study. The mean age was 62.82 years. Male gender was predominant with a 64%, while the Caucasians represented 82% of the cohort. The most common etiologies of the cirrhosis were chronic alcohol abuse followed by chronic hepatitis C virus (HCV) and non-alcoholic steatohepatitis (NASH). 8 patients had negative EGD exam for any active bleeding, esophageal varices (EV), portal hypertensive gastropathy (PHG) or gastric varices (GV). 31 of them (60%) had features of portal hypertensive enteropathy in their VCE. 1B. 45 patients had negative EGD exam for any active bleeding, esophageal varices (EV), portal hypertensive gastropathy (PHG) or gastric varices (GV). 31 of them (60%) had features of portal hypertensive enteropathy in their VCE. 1B.

Table 1A

| Number & (%) | Total number of patients
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Causation of cirrhosis:</td>
<td></td>
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<tr>
<td>Congestive Hepatopathy</td>
<td>4(4%)</td>
</tr>
<tr>
<td>Cryptogenic</td>
<td>8(8%)</td>
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<tr>
<td>HCV</td>
<td>22(22%)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>37(37%)</td>
</tr>
<tr>
<td>Hemochromatosis</td>
<td>2(2%)</td>
</tr>
<tr>
<td>NASH</td>
<td>18(18%)</td>
</tr>
<tr>
<td>PSC</td>
<td>2(2%)</td>
</tr>
<tr>
<td>PBC</td>
<td>6(6%)</td>
</tr>
<tr>
<td>AH</td>
<td>1(1%)</td>
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<tr>
<td>Age</td>
<td>62.82 ± 2.2</td>
</tr>
<tr>
<td>MELD score</td>
<td>13.86(±0.66)</td>
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<tr>
<td>Demographic:</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64(64%)</td>
</tr>
<tr>
<td>Female</td>
<td>36(36%)</td>
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<tr>
<td>Whites</td>
<td>82(82%)</td>
</tr>
<tr>
<td>Asian</td>
<td>2(2%)</td>
</tr>
<tr>
<td>African-American</td>
<td>1(1%)</td>
</tr>
<tr>
<td>Others</td>
<td>15(15%)</td>
</tr>
<tr>
<td>Small intestine lesions</td>
<td>7(71%)</td>
</tr>
<tr>
<td>Portal hypertensive enteropathy (PHE)</td>
<td>65(65%)</td>
</tr>
<tr>
<td>Vascular lesions:</td>
<td>18(18%)</td>
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<tr>
<td>Varices</td>
<td>11(11%)</td>
</tr>
<tr>
<td>Bleeding</td>
<td>15(15%)</td>
</tr>
<tr>
<td>Red spot</td>
<td>9(9%)</td>
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<tr>
<td>Inflammatory changes:</td>
<td>18(18%)</td>
</tr>
<tr>
<td>Mild</td>
<td>15(15%)</td>
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<tr>
<td>Sever</td>
<td>35(35%)</td>
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Table 1B

<table>
<thead>
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<th>Number PHE</th>
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<th>O.R</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>CTP-A</td>
<td>46</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>CTP-B</td>
<td>54</td>
<td>39</td>
<td>15</td>
</tr>
</tbody>
</table>

(continued)
**Results:** (CIs) were estimated using Mantel-Haenszel estimator in discordant cases.

**Discussion of Interest:** All authors have declared no conflicts of interest.

**References**

**Contact E-mail Address:** rinhashimoto@gmail.com

**Introduction:** There are very few reports about long-term outcomes in patients with negative balloon assisted enteroscopy for suspected overt small bowel bleeding (obscure-over gastrointestinal bleeding).

**Aims & Methods:** The aim of this study is to evaluate long-term outcomes and risk factors of re-bleeding after negative double balloon enteroscopy (DBE) for suspected overt small bowel bleeding. We investigated 297 patients undergoing DBE for suspected overt small bowel bleeding between December 2004 and April 2016 at Sendai Kouei Hospital. Prospectively collected data were reviewed, and 83 patients (27.9%) showed negative results in the first antegrade and/or retrograde DBE.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Conclusion:** Enteric-coated aspirin, clopidogrel, and loxoprofen were identified as risk factors causing overt SBB during a relatively short period after administration.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**
P1937 DOES DISCONTINUATION OF ANTITHROMBOTIC AGENTS AFFECT DIAGNOSTIC YIELD OF SMALL BOWEL CAPSULE ENDOSCOPY IN PATIENTS WITH OBSCURE GASTROINTESTINAL BLEEDING?

T. Watanabe1, S. Shimada1, Y. Nadanai1, K. Otani1, F. Tanaka1, Y. Nagami1, N. Kaminai1, H. Yamagami1, T. Tanigawa1, M. Shibatou1, T. Miyazaki1, S. Nakamura1, Y. Fujimura1

1Dept. Of Gastroenterology, Osaka University Graduate School of Medicine, Osaka, Japan
2Department Of Inflammatory Bowel Disease, Division Of Internal Medicine, Hoyo College of Medicine, Nishinomiya/Japan

Disclosure of Interest: All authors have declared no conflicts of interest.

Contact E-mail Address: wanatane@med.osaka-u.ac.jp

Introduction: Capsule endoscopy (CE) is a useful and noninvasive modality for investigation of the small intestine, and currently, it has become the first-line method of choice for the diagnosis of obscure gastrointestinal bleeding (OGBB). Use of antithrombotic agents including antiplatelets and anticoagulants is associated with gastrointestinal bleeding. Antithrombotic users account for a large portion of patients with OGBB, and those with OGBB often undergo CE. It should be noted that some patient with over OGBB discontinue antithrombotic agents at the time of CE, which may affect endoscopic findings.

Aims & Methods: To examine the effect of discontinuation of antithrombotic agents on the diagnostic yield of CE, and to assess the predictive factors associated with positive CE findings in patients using antithrombotics who develop overt OGBB. Between March 2004 and December 2015, 130 consecutive patients (75 male; mean age, 71.9 years) taking antithrombotics who underwent CE for overt OGBB were enrolled, whereas patients who underwent double-balloon endoscopy prior to CE were excluded. Findings were considered positive if the observed lesions could explain the bleeding, while findings including isolated red spots and a single small polypl were considered negative. The primary endpoint was the difference in the rate of positive CE findings between patients who continued or discontinued antithrombotic agents. Furthermore, a propensity score analysis was performed to reduce the effects of bias in potential confounding factors. The secondary endpoint was to assess the predictive factors for the positive CE findings by using multiple logistic regressions.

Results: Of the 73 patients who continued antithrombotic agents, 36 (49.3%) patients had positive findings in the small intestine (ulcer/erosion [n = 24], angioectasia [n = 7], tumor [n = 4], and blood pooling [n = 1]). While of the 57 patients who discontinued these agents, 35 (61.4%) patients had positive findings (ulcer/erosion [n = 17], angioectasia [n = 11], tumor [n = 3], and blood pooling [n = 4]). The rates of positive CE finding did not differ between the two groups. Even after propensity score matching, discontinuation of antithrombotic agents did not affect the rate of positive CE finding. In multivariate analysis, the lowest hemoglobin level before CE examination was an independent predictive factor associated with positive CE findings. The odds ratio per 1 g/dL increase in the lowest hemoglobin level was 0.85 (95% confidence interval, 0.71–0.98). However, other factors, including sex, age, and discontinuation of antithrombotic agents, were not associated with positive CE findings.

Conclusion: Discontinuation of antithrombotic agents did not affect the diagnostic yield of CE with overt OGBB, and lowest hemoglobin level was associated with positive CE findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1938 EFFICACY OF REBAMIPIDE TO PREVENT LOW-DOSE ASPIRIN-INDUCED SMALL INTESTINAL INJURY

S. S. Ylov

Gastroenterology, Peoples Friendship University of Russia, Moscow/Russian Federation

Contact E-mail Address: sivlov@mail.ru

Introduction: Long-term use of low-dose aspirin (LDA) is associated with development of peptic ulcers, gastrointestinal bleeding, enteropathy. For prevention of LDAs and minor intestinal mucosal injuries, presently the first-line therapy according to several guidelines. However, gastric acid suppressants, like PPI, do not prevent small intestinal mucosal injury. The recent clinical trials showed that rebamipide stimulates the production of prostaglandins, thereby preventing mucosal injury. This could improve mucosal breaks in small intestine in patients receive LDA.

Aims & Methods: We aimed to investigate the protective role and efficacy of rebamipide for prevention low-dose aspirin-induced small intestinal mucosal injury and enteropathy. Subjects comprised patients undergoing longlife low-dose aspirin therapy prescribed by cardiologist. Patients with a high-risk of gastrointestinal bleeding were excluded. This trial was performed as a randomised open-labelled clinical study with the permission of an institutional review board. The trial was included 100 patients (50 cases in each group) received gastro-coated low-dose aspirin 100 mg. The Group PPI received LDA plus pantoprazole 40 mg, the Group RBD received plus rebamipide 300 mg. Before starting therapy, we checked the background characteristics of each patient (H pylori, use of LDA, NSAID, bismuth, PPI, and endoscopic findings). Gastroduodenoscopy and capsule endoscopy were performed, and the fecal occult blood reaction and faecal calprotectin levels were measured before, two and four weeks after drug administration. After the therapy, we asked physicians and patients about medication compliance and side effects. Capsule endoscopy was then repeated. The primary endpoint was the change in the number of mucosal breaks from baseline to 4 weeks. The secondary endpoints were the rates of side effects.

Results: The fecal calprotectin levels significantly increased in Group PPI, they did not increase in Group RBD. The number of small intestinal mucosal injuries by capsule endoscopy in Group PPI increased significantly up to 3.9 after 4 weeks of LDA treatment. There was not detected new small intestinal injuries in Group RBD. Stomach ulcer, bleeding or stenosis were not found in any subject. There were no significant differences in the presence of fecal occult blood in both groups. There were no significant side effects in Group RBD.

Conclusion: In conclusion, rebamipide is effective and sufficient for preventing mucosal injury of the small intestine induced by low-dose aspirin. These results show the gastroprotective and enteroprotective effects of rebamipide, suggesting that it may be a good choice in low-dose aspirin users with gastrointestinal toxicity that is not suppressed by acid suppressants alone.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Contact E-mail Address: lilli.zwinger@gmx.de

Introduction: Capsule endoscopy allows high-quality imaging of the small bowel. Newer capsule with a panoramic viewing mode is available and might increase the detection rate of bleeding lesions in patients with obscure gastrointestinal bleeding. Furthermore, an improved patient acceptance rate is expected.

Aims & Methods: In a randomized prospective comparative multi-center study, patients with obscure gastrointestinal bleeding were included and examined with Capsocam SV-1 or with PillCam SB 3. Discriminant analysis of bleeding lesions, transit and evaluation time and adverse events were evaluated. Physicians were interviewed about their experience with both capsules and the evaluation software. A detailed subject questionnaire analyzed acceptance of each capsule system. Three months after initial capsule endoscopy follow-up procedures were documented.

Results: One hundred eighty-one patients with obscure gastrointestinal bleeding were recruited into the study. After exclusion of 28 patients 153 patients were randomized and Capsocam SV-1 (n = 78) or PillCam SB 3 (n = 75) was administered. Capsocam SV-1 detected more cases of bleeding (31/79, diagnostic yield 39.7%) compared to PillCam SB 3 (26/75, diagnostic yield 34.6%, n.s.). Transit time of both capsules was not different. Evaluation time with PillCam SB
3 was superior to CapsoCam SV-1 (27 min. vs. 40 min, p = 0.01). 95% of the physicians were satisfied with each capsule system and evaluation software. The acceptance rate of the patients to retrieve the CapsoCam SV-1 was high. Adverse events/SAEs were 17.9%/1.3% with CapsoCam SV-1 and 16%/0.0% with PillCam SB 3. Re-bleeding rate was 28.75% within 3 months.

**Conclusion:** Both capsules allow high-quality imaging of the small bowel. CapsoCam SV-1 detected more lesions, however, relevant bleeding sources were visualized by both capsules. Physician's satisfaction was high with both capsule systems and evaluation software. Patient's acceptance with CapsoCam SV-1 was unexpectedly high. SAEs were 0% with PillCam SB 3 and 1.3% with CapsoCam SV-1.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**PI940 VALIDATION OF A SCORE CHART TO PREDICT THE RISK OF CHRONIC MESENTERIC ISCHEMIA: A DISCRIMINATIVE AND USEFUL TOOL IN CLINICAL DECISION-MAKING**


1Gastroenterology And Hepatology, Erasmus University Medical Center, Rotterdam/Netherlands
2Department Of Gastroenterology And Hepatology, Francisca Gasthuis & Vlietland, Rotterdam/Netherlands
3Vascular Surgery, Medical Spectrum Twente and Experimental Center of Technical Medicine, Faculty Science and Technology, University Twente, Enschede/Netherlands
4Radiology, Erasmus University Medical Center, Rotterdam/Netherlands
5Vascular Surgery, Erasmus University Medical Center, Rotterdam/Netherlands
6Gastroenterology And Hepatology, Medical Spectrum Twente, Enschede/Netherlands
7multidisciplinary study group, studygroup/Netherlands

**Contact E-mail Address:** l.vandijk@erasmusmc.nl

**Introduction:** Chronic mesenteric ischemia (CMI) is the result of insufficient mucosal perfusion of the gastrointestinal tract, mostly caused by atherosclerotic stenosis of the mesenteric arteries. Other causes of CMI are vasculitis, median arcuate ligament syndrome or non-occlusive ischemia (NOMI) due to decreased cardiac output or hypoxia-oxygenation. The diagnosis of CMI remains challenging as chronic abdominal pain is common and mesenteric artery stenoses are frequently observed in the general population but not necessarily related. Harki et al.(1) designed a score chart to predict the risk of CMI based on a cohort of CMI suspected patients. This score chart consists of patient characteristics (female 1 pt, weight loss 1 pt, cardio-vascular disease 1 pt) and radiologic evaluation (50–70% celiac artery (CA) stenosis 1 pt, > 70% CA stenosis 4 pts, 50–70% superior mesenteric artery (SMA) stenosis 1 pt and > 70% SMA stenosis 3 pts). A total score of 0–2 pts predicts an absolute risk of CMI of 0–21%, 3–6 pts a 22–46% risk and ≥ 7 pts a risk of ≥ 79%. We aimed to validate this prediction model in a prospective large multicenter patient cohort.

**Aims & Methods:** Patients suspected of CMI referred to two Dutch specialized CMI referral centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography and/or conventional catheter angiography, and a functional test examination, imaging of the gastrointestinal arteries with either CT- or MR-angiography was performed. A definitive diagnosis of CMI was made if successful treatment resulted in durable symptom relief. The score chart to predict the risk of CMI was computed for each patient.

**Results:** A total of 246 patients were included and consensus diagnosis of CMI was made in 108 (44%) patients, which resulted in 96 (39%) patients with a definitive diagnosis of CMI after a positive response therapy. A definitive diagnosis of CMI was made if successful treatment resulted in durable symptom relief. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient.

**Conclusion:** The score chart for CMI based on patient characteristics and anatomy is a reliable tool to discriminate the risk of CMI and useful for clinical decision-making, for example to adopt a wait-and-see policy in patients with a low risk and immediate vascular intervention in patients with high risk of CMI.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


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**PI941 LONG-TERM SYMPTOM RELIEF AFTER REVASCULARIZATION IN PATIENTS WITH SINGLE ARTERY CHRONIC MESENTERIC ISCHEMIA**

**J. D. Van Dijk,** L.M.G. Moons2, D. Van Noord, A. Moelker2, H. J. M. Verhagen, M. J. Bruno1, E. V. Rouwet1

1Gastroenterology And Hepatology, Erasmus University Medical Center, Rotterdam/Netherlands
2Gastroenterology And Hepatology, University Medical Center Utrecht, Utrecht/ Netherlands
3Department Of Gastroenterology And Hepatology, Francisca Gasthuis & Vlietland, Rotterdam/Netherlands
4Vascular Surgery, Erasmus University Medical Center, Rotterdam/Netherlands

**Contact E-mail Address:** l.vandijk@erasmusmc.nl

**Introduction:** Isolated stenosis of the celiac artery (CA) or the superior mesenteric artery (SMA) is frequently detected in patients with abdominal complaints. These patients may suffer from chronic mesenteric ischemia (CMI) causing nonspecific abdominal complaints as postprandial pain, nausea or diarrhea. However, the existence of single atherosclerotic mesenteric ischemia is a topic of continuous clinical debate and reports on the effectiveness of single mesenteric artery revascularization are scarce. We evaluated the long-term clinical success rates for single CA or SMA revascularization in patients with gastrointestinal symptoms and confirmed mesenteric ischemia.

**Aims & Methods:** Data were collected from all 97 consecutive patients with gastrointestinal symptoms and a single mesenteric artery stenosis referred to the outpatient clinic of our tertiary care institution for analysis of CMI between January 2006 and October 2010. All patients underwent a standardized diagnostic work-up for CMI at baseline consisting of medical history taking and physical examination, imaging of the gastrointestinal arteries with either CT- or MR-angiography and/or conventional catheter angiography, and a functional test for detecting mucosal ischemia using either tonometry or visible light spectroscopy. All cases were discussed in a multidisciplinary meeting attended by a vascular surgeon, interventional radiologist and gastroenterologist, all specialized in CMI, leading to an expert based consensus diagnosis. Patients with consensus diagnosis of CMI underwent surgical or endovascular revascularization. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient.

**Results:** Consensus diagnosis of CMI was obtained in 62/97 patients and all consensus patients were revascularized. Isolated CA stenosis was present in 55/ 62 patients (89%) (31 vascular disease; 24 median arcuate ligament syndrome, MALS) and isolated atherosclerotic SMA stenosis in 7 patients. After a mean follow-up of 5.5 ± 3.0 years, 42/62 patients (68%) experienced sustained symptom relief. Responders to revascularization had a BMI increase during follow-up in contrast to the non-responders (+0.43 ± 2.5 versus −1.06 ± 2.4 kg/m², p = 0.033). Response to revascularization was not related to lesion localization (CA 67% versus SMA 71%, p = 0.825) or lesion etiology (MALS 63% versus vascular disease 71%, p = 0.483).

**Disclosure of Interest:** All authors have declared no conflicts of interest.

To summarize, the validation of a score chart for predicting the risk of CMI was performed. The score chart was shown to be discriminative and useful in clinical decision-making. The long-term clinical success rates for single CA or SMA revascularization were evaluated, showing sustained symptom relief in 68% of patients. Further research is needed to confirm these findings in a larger patient cohort.
CA = celiac artery; SMA = superior mesenteric artery; MALS = median arcuate ligament syndrome

<table>
<thead>
<tr>
<th>Symptom relief</th>
<th>No symptom relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>42/62 (68%)</td>
</tr>
<tr>
<td>Vascular lesion</td>
<td>20/62 (32%)</td>
</tr>
<tr>
<td>CA stenosis</td>
<td>37/55 (67%)</td>
</tr>
<tr>
<td>SMA stenosis</td>
<td>57 (71%)</td>
</tr>
<tr>
<td>Etiology</td>
<td>2 (7%)</td>
</tr>
<tr>
<td>MALS</td>
<td>15/24 (63%)</td>
</tr>
<tr>
<td>Vascular disease</td>
<td>27/38 (71%)</td>
</tr>
</tbody>
</table>

Conclusion: Revascularization of the CA or SMA provides long-term symptom relief in 68% of patients with chronic gastrointestinal symptoms and confirmed mucosal ischemia due to single mesenteric artery stenosis. This provides the opportunity to help patients with otherwise unexplained, refractory abdominal complaints.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI9142 UNDERUTILIZATION OF ENDOSCOPIC ARGON PLASMA COAGULATION FOR TREATMENT OF BLEEDING GASTROINTESTINAL ANGIODYPLASIAS: AN INTERNATIONAL MULTICENTRE COHORT STUDY
K. Groote1, M. Mattheussen1, G. Hollera, E. Van Geenen1, D. Meerman2, L. A. De Schauwer3, D. McNamara2, J. P. h. Drenth1
1Gastroenterology And Hepatology, Radboudumc, Netherlands, Nijmegen/Netherlands
2Department of Clinical Medicine, Trinity College, Dublin/Ireland

Contact E-mail Address: karina.groote@gmail.com

Introduction: Endoscopic argon plasma coagulation (APC) is the first-line treatment in patients with iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodyplasias. In the minority of patients active bleeding angiodyplasias are seen during endoscopy, but in contrast non-bleeding angiodyplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodyplasias with APC difficult.

Aims & Methods: The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodyplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We initiated an international, multicentre cohort study to collect clinical, laboratory and endoscopic data from angiodyplasia patients. Cases were identified through a systematic search in endoscopy reports from 2010–2015 with follow-up until July 2016. Inclusion criteria was endoscopic detection of angiodyplasia in the context of overt bleeding or iron deficiency anaemia. Exclusion criteria were other vascular anomalies and angiodyplasias as incidental finding. The primary outcome was repeat endoscopy with APC.

Results: A total of 197 patients with proven angiodyplasia as cause for anaemia or bleeding were included (mean age 68 years; 58% male). Median follow-up was 37 months (range 18–57). In 52% of the cases (n=103) APC treatment for bleeding angiodyplasia(s) was performed at the index endoscopy. Repeat endoscopy with APC was necessary in 17 patients (18%) in whom angiodyplasias were detected but left untreated during the index endoscopy. Median time between index and repeat endoscopy was 21 weeks. A total of 48 patients (51%) who received a purely diagnostic index endoscopy were in need of other treatment modalities (e.g. iron supplementation, blood transfusion, stop anti- coaguulants). Anaemia and/or overt bleeding resolved spontaneously in 24 patients (26%).

Conclusion: A substantial proportion of patients with clinical symptomatic angiodyplasia bleeding do not receive APC at the index endoscopy and continue to be dependent on iron supplementation, blood transfusion or undergo repeat endoscopy with APC.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI9143 DIGESTIVE INVOLVEMENT IN SYSTEMIC DISEASES: A UNIVERSITY HOSPITAL EXPERIENCE
W. Khannoussi1, K. Chhit2, H. Bachir2, G. Krassas1, A. El Meekoua1, S. Hamza2, H. B. Alaoui3, K. Serraj2, Z. Ismaili3, W. Khannoussi
1Gastroenterology, Centro Hospitalar do Algarve, Portimão/Portugal
2Clinical Pathology, Centro Hospitalar do Algarve, Faro/Portugal
3Gastroenterology, Centro Hospitalar do Algarve, Faro/Portugal

Contact E-mail Address: wkhannoussi@yahoo.com

Introduction: Digestive manifestations in systemic diseases including vasculitis and granulomatosis is broad and can affect any segment of the digestive tract and related organs. The clinical symptoms are not specific and it can be challenging for diagnosis. The other difficulty remains the interference of digestive side effects of medication used.

Aims & Methods: We aimed to review various digestive manifestations of systemic diseases. This was a retrospective study from Feb 2009 to Sep 2016 in internal medicine and gastroenterology departments. The exclusion criteria was incomplete data concerning the diagnosis of the systemic disease.

Results: We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 ± kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before

Patients symptoms and clinical findings were: Abdominal pain in 32 cases (22.9%), nausea and vomiting in 7 cases (5%), stool modification 15 cases (10.75%), jaundice in 4 cases (2.95%), dysphagia in cases (71%), hematemesis in 4 cases (2.95%), splenomegaly in 8 cases (5.7%), ascitis in 13 cases (9.3%), digestive bleeding 17 cases (12.1%). Laboratory findings: elevated liver enzymes in 18 cases (15.9%), alkaline phosphatase elevation 15 cases (19.2%). Radiological findings: 17 ascitis (14.4%), 12 digestive thickening (10.16%), 6 hematomas (5.08%), 14 splenomegaly (11.86%), 2 portal cavernoma (1.6%), 3 portal thrombosis (2.5%), 4 esophageal distention (3.4%), acalculus cholecystitis in 2 cases (1.6%), portal hypertension (1.6%), steatosis in 3 cases (2.5%), 3 hepatic angioma (2.5%), acute pancreatitis in 2 cases (1.6%), 2 mesenteric ischemia (1.6%), 1 biliud chARR (0.8%), 1 hepatic carcinoma (1.8%). Upper gastrointestinal Endoscopy findings: hiatus hernia in cases (8%), esophagitis in 11 cases (11%), esophageal varices in 2 cases (5.7%), Gastritis in 18 cases (15.9%), diathesis in cases 16 cases, ulcers in cases (8.6%), 4 celiac disease (11.42%). Lower GI endoscopy: Crohn’s disease in 1 case (8.3%), ulcerative colitis in 1 case (8.3%), 1 hyperplastic polyps (6.3%), 2 colitis (16.6%). Esophageal manometry: motility disorder in 4 cases. The most used drugs were immunosuppressive drugs, steroids and hydrochloroquine, all causing digestive side effects mainly abdominal pain.

Conclusion: The digestive involvement is around 10% of cases in the most represented systemic diseases, the main symptom is abdominal pain probably related to medication, but endoscopic modifications are mainly non specific but we found some association with celiac disease and IBD. Liver involvement was noticed in 15% of cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

WEDNESDAY, NOVEMBER 01, 201709:00-14:00 NUTRITION III - HALL 7

PI9144 CHANGES IN LEVELS OF VITAMIN D IN OBESE PATIENTS SUBMITTED TO BARIATRIC SURGERY
A. Vaz1, R. Guerreiro2, S. Sousa1, P. Queirós3, T. Gago1, J. Roseira1, H. Guerreiro3
1Gastroenterology, Centro Hospitalar do Algarve, Faro/Portugal
2Clinical Pathology, Centro Hospitalar do Algarve, Faro/Portugal
3Gastroenterology, Centro Hospitalar do Algarve, Portimón/Portugal

Contact E-mail Address: anam.vaz@hotmail.com

Introduction: An association between obesity and vitamin D deficiency has been reported in several studies. This may be explained, among other things by the sequestration of the fat-soluble vitamin D in the adipose tissue. Bariatric surgery, including Roux-en-Y gastric bypass (RYGB) is an effective treatment for more extreme cases of obesity, promoting significant weight loss and consequently reduction in some obesity-related health problems. However, the problem of vitamin D deficiency doesn’t seem to be solved after RYGB and can even be exacerbated by the changes in digestion and absorption of this nutrient after the surgery.

Aims & Methods: The aim of this study was to analyze the prevalence of vitamin D deficiency (VDD) and vitamin D insufficiency (VDI) in a population of obese patients, before and after being submitted to RYGB. We included patients patients selected to undergo RYGB for obesity. We measured anthropometric values and the levels of 25-hydroxy-vitamin D (25[OH]D) before and 1 year after the procedure. VDD was defined as serum 25(OH)D <20ng/mL and VDI as serum 25(OH)D concentrations between 20-30ng/mL. Levels of 25(OH) D >30ng/mL were considered normal.

Results: We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 ± kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before
bariatric surgery, 52.3% of patients had VDD and 36.8% had VDI. After sur-
gery, the number of VDD increased to 71.1% (p < 0.0079). The mean levels of
25(OH)D decreased significantly from 19.8 ng/mL before surgery to 16.6 ng/mL
after surgery (p < 0.05). There was no correlation between the amount of weight
loss and the changes in the levels of 25(OH)D in our study.

Conclusion: There is a high prevalence of vitamin D deficiency in obese
patients eligible for bariatric surgery. The level of deficiency tends to increase after
RYGB. This population of patients should, therefore, be offered an adequate
level of vitamin D supplementation, especially after the procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1946 INTRAGASTRIC BALLOON: A CRITICAL VIEW IN NON ELECTIVE BARIATRIC SURGERY PATIENTS
R.J.F. Fernandez1, E. Usuy2, C.F. Diestel3, S. Barrichello3, A. F. Teixeira1, M. Galvao Neto3
1Dept. Of Bariatric Endoscopy, Endogastro Rio, Rio de Janeiro/Brazil
2Dept. Of Gastroenterology, Usuy Clinic, Florianopolis/Brazil
3Bariatric Endoscopy, Gastro Obeso Center, Sao Paulo/Brazil

Contact E-mail Address: ricfittipaldi@hotmail.com

Introduction: Bariatric surgery is established as an excellent therapy for obesity.
However, lower degrees of weight loss without surgical indication also impact on
patients’ health and quality of life, and the intragastric balloon (IGB) may be a
treatment option.

Aims & Methods: We aimed to assess the efficacy of excess weight treatment with
an IGB in patients with overweight and grade I obesity at EndogastroRio Clinic. A
total of 717 patients were analyzed. A liquid filled IGB was used. The patients
had initial body mass index (BMI) between 27 and 34.9 kg/m². The level of
significance was set at p < 0.05.

Results: 615 patients were women. 131 patients had overweight and 586
had grade I obesity. Mean age was 37.97 years (17–75). Weight loss results and
thyroid treatment success rates are shown on table 1. Percent excess weight loss (%EWL)
was higher in overweight group (p < 0.0001) and percent total body weight loss (%TBWL)
was higher in the grade I obesity group (p < 0.0009). 96 (73.28%) overweight patients and 132
(22.52%) grade I obesity patients reached a normal
BMI(<25 kg/m²).

Conclusion: Endoscopic treatment of obesity with an IGB shows to be an excel-
alent therapeutic option to non elective patients for bariatric surgery according to
BMI criteria.

Disclosure of Interest: M. Galvao Neto: I declare that I have received personal
fees from FRACYTL LABS, GI WINDOWS, APOLO ENDO SURGERY, GI
DYNAMICS, ETHICON ENDO SURGERY, not related to the present
study.

All other authors have declared no conflicts of interest.

P1947 SPATZ3® ADJUSTABLE INTRAGASTRIC BALLOON TREATMENT: A BRAZILIAN MULTICENTRIC EXPERIENCE
R.J.F. Fernandez1, C.F. Diestel3, M. Galvao Neto3, A. F. Teixeira1, E. Usuy2, S. Barrichello3
1Dept. Of Bariatric Endoscopy, Endogastro Rio, Rio de Janeiro/Brazil
2Bariatric Endoscopy, Gastro Obeso Center, Sao Paulo/Brazil
3Dept. Of Gastroenterology, Usuy Clinic, Florianopolis/Brazil

Contact E-mail Address: ricfittipaldi@hotmail.com

Introduction: Intragastric balloons (IGB) are already used worldwide in the treat-
ment of overweight and obesity, with established success. The Spatz3® adjustable
balloon brings the possibility of balloon volume control during all the
intervention, possibly reducing the risk of early removals due to intolerance and
greater weight loss when compared to traditional IGBs.

Aims & Methods: We aimed to analyze the initial 25 months results regarding
weight loss and complications with Spatz3® adjustable intragastic balloon in Brazil. In this
retrospective longitudinal study were included patients submitted to Spatz3® adjustable IGB treatment between October 2014 to April 2017 in four
private clinics in Brazil. The IGB Spatz3® was filled with a standard volume of
600 ml that was downward or upward adjusted when necessary. The patients
presented a minimum body mass index (BMI) of 27 kg/m². Were analyzed the
complications of Spatz3® treatment and BMI reduction, percent total body
weight loss (%TBWL) and percent excess weight loss (%EWL).

Results: 422 patients underwent implant Spatz3® balloon in the period. The
complications (14.28%) at the present study were: early balloon removal
(6.89%), gastric ulcer (3.94%), spontaneous deflation (1.48%), gas production
inside the balloon (0.98%), gastric perforation (0.23%) and Malory Weiss Syndrome (0.23%).
There was no death at the present study. Twenty-eight patients underwent downward adjustment due to intolerance (mean volume
reduction: 162.86 mL) and all of then kept in the treatment (no early removals).
190 patients have completed the treatment (minimum 9 months of gastric balloon
stay). The BMI decreased from 37.69 to 31.51 kg/m² (p < 0.0001), body weight
diminshed from 107.67 to 90.16 kg (p < 0.0001) and excess weight dimished from
36.79 to 19.27 kg (p < 0.0001). Eighty-six patients underwent upward adjust-
ment, the adjustment resulted in a further mean weight loss of 4.2 kg (9 to
20 kg), the range of upward volume was 281.73 to 66.58 mL (100–420 mL)
and the moment of the procedure was 7.06 ± 1.64 months. The group of patients that did
the upward adjustment didn’t have a higher %TBWL, %EWL or a higher BMI
reduction, when compared to the group that did not (p = 0.4413, p = 0.9245,
0.2729 respectively).

Contact E-mail Address: ricfittipaldi@hotmail.com

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ment of overweight and obesity, with established success. The Spatz3® adjustable
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and the moment of the procedure was 7.06 ± 1.64 months. The group of patients that did
the upward adjustment didn’t have a higher %TBWL, %EWL or a higher BMI
reduction, when compared to the group that did not (p = 0.4413, p = 0.9245,
0.2729 respectively).

Conclusion: This study shows that Spatz3® IGB treatment is an effective proce-
dure for weight reduction, without mortality but with higher morbidity rates
when compared to traditional IGBs. Even more, the downward adjustment
treatment seems more effective in preventing the early balloon removal. Although the
upward adjustment does not show to be able in providing a greater weight loss.

Disclosure of Interest: M. Galvao Neto: I declare that I have received personal
fees from FRACYTL LABS, GI WINDOWS, APOLO ENDO SURGERY, GI
DYNAMICS, ETHICON ENDO SURGERY, not related to the present
study.

All other authors have declared no conflicts of interest.
P1948 VOMITING FREQUENCY AFTER INTRAGASTRIC BALLOON PLACEMENT AND INTRAVENOUS HYDRATION REQUIREMENT
S. Barichello1, R.J.F. Fernandez2, E. Usyu3, T. F. Teixeira4, M. Galvao Neto5, A. F. Teixeira4, E. Grecco4
1Endoscopy, FMABC, São Paulo/Brazil
2Dept. Of Bariatric Endoscopy, Endogastro Rio, Rio de Janeiro/Brazil
3Dept. Of Gastroenterology, Usuy Clinic, Florianopolis/Brazil
4Dept. Of Gastroenterology, Faculidade de Medicina do ABC - Hospital Mário Covas, São Paulo/Brazil
5Bariatric Endoscopy, Gastro Obeso Center, São Paulo/Brazil

Contact E-mail Address: sergio.barichello@healthme.com.br

Introduction: The endoscopic treatment of obesity and over weight with intragastric balloon (IGB), is a safe and effective option. Nausea and Vomiting are the most common side effects after IGB implant.

According to A. Scudiero Sanches, 71.1% of patients experience nausea and 57.9% have vomiting; in a systematic review with more than 3000 patients showed that nausea and vomiting are the fifth leading cause of early explantation. The reported symptoms are more common in first days post implant.

Regarded as one of the major causes of gastric balloon early removal, is important to evaluate in daily practice the frequency of patients requiring intravenous hydration to quell nausea and vomiting during the first day of the accessory use.

Aims & Methods: Evaluation of Frequency of vomiting and number of patients requiring intravenous hydration (HEV) after gastric balloon placement. This was a retrospective analysis of medical records of 340 obese and over weight patients treated with intragastric balloon, between November 2013 to December 2016 in the endoscopy service of the Division of the Endoscopy Hospital in São Paulo.

The implant was performed by 3 endoscopists with experience in bariatric endoscopy, all procedure were performed under moderate sedation and anesthetist’s care. The patients used ondansetron 40 mg once a day, and antiemetic drugs (dimenhydrinate 50mg) 8 to 9 times per day. Approximately 9.48% of the patients required intravenous hydration after gastric balloon placement.

Results: There were 340 patients treated with intragastric balloon between 2015 and 2016. The present study showed 74.41% vomiting until the third day after placement of the IGB, and it is in accordance with literature. Those 252 patients who had vomiting, 67.38% presents frequency of 0 to 5 times per day and 32.42% of the group 5 to 10 times per day. Approximately 7.48% of the patients required intravenous hydration and there were no early explant.

Conclusion: Gastric balloon causes vomiting in the early days post implant in 74.41% of patients and cause dehydration requiring Intravenous fluid therapy in 9.48%. We also recorded were about the numbers and frequency of vomiting and if there was need for intravenous hydration during the first three days after intragastric balloon implant.

Patients’ body mass distribution had a clear improvement, with a significant reduction of the basal metabolic rate of 1893.24 to 1694.67 was noted. Endoscopic approach with gastric balloon provides a significant weight loss and helps patients acquiring healthy habits

Disclosure of Interest: M. Galvao Neto: Apollo endosurgery consultant All other authors have declared no conflicts of interest.

Contact E-mail Address: ricfittipaldi@hotmail.com

Introduction: Endoscopic methods, especially the intragastric balloon (IGB), have been shown to be effective for the treatment of excess weight.

Aims & Methods: We aimed to assess the efficacy and complications of excess weight treatment with a non adjustable IGB. A liquid-filled IGB with a volume of 600 to 700 ml was used. The patients had a minimum initial body mass index (BMI) of 27 kg/m2 and were followed up by a multidisciplinary team consisting of a nutritionist, a doctor and a psychologist. For statistical analysis, the patients were divided into groups according to sex and degree of excess weight (overweight and grade I, II and III obesity). Data were analyzed using descriptive statistical methods, the Student t-test, and analysis of variance followed by the Tukey post-test. The level of significance was set at p < 0.05.

Results: A total of 5874 patients were analyzed. The incidence of complications was 7.32% (n = 430) as listed below: 299 (5.09%) early IGB removal, 58 (0.98%) absence of weight loss or weight gain. The incidence of gas production inside the balloon was 0.20% (n = 12) and the incidence of leakage was 0.54% (n = 32); pregnancy was 0.32% (n = 19); gastric perforation was 0.06% (n = 4); upper digestive bleeding was 0.05% (n = 3); Wernick Korsakoff syndrome due to excessive vomiting was 0.01% (n = 1), pancreatitis and esophageal perforation was 0.01% each (n = 1). Of the 5444 remaining patients, 4081 (74.9%) were women and 1363 (25.1%) were men. Mean age was 38.38 years. The patients showed a significant weight loss, with a significantly lower final BMI (mean: 30.08 ± 5.06 kg/m2) than the initial BMI (mean: 36.94 ± 5.67 kg/m2) (p < 0.0001). Mean BMI reduction was 6.85 ± 3.06 kg/m2 (range: 0.25–29.79). Mean percent total body weight loss (TBWL) was 18.42 ± 7.25% and mean percent excess weight loss (EWL) was 65.66 ± 36.24% (range: 3.99–336.14). The weight loss in kilograms was 19.13 ± 8.86. The treatment success rate (%EWL > 25) was 93.0%, as follow: overweight was 99.0%, grade I obesity was 95.83%, grade II obesity 93.65% and grade III obesity was 86.09%. Percent EWL was higher in the overweight group (OW) (131.45%±EWL), followed by grade I obesity (G1O) (76.67%), grade II obesity (G2O) (50.61%) and grade III obesity (G3O) (45.45%) sequentially (p < 0.0001). Percent EWL was also higher in women (69.71%±EWL) than in men (53.39%±EWL) (p < 0.0001).

Results are better shown in table 01.

Contact E-mail Address: ricfittipaldi@hotmail.com

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Results are better shown in table 01.
Disclosure of Interest: M. Galvao Neto: I received personal fees from FRACTYL LLC. This work was supported by a grant from GI WINDOWS, personal fees from APOLLO ENDO SURGERY, personal fees from GI DYNAMICS, personal fees from ETHICON ENDO SURGERY, outside the submitted work. All other authors have declared no conflicts of interest.

P1951 FRUCTO-OLIGOSACCHARIDE EXACERBATES STRESS-INDUCED VISCERAL HYPERALGESIA AND GUT INFLAMMATION IN A MURINE MODEL
B. Chen1, L. Du2, H. He3, J.J. Kim2, N. Dai2
1Department Of Gastroenterology, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, Hangzhou/China
2Department Of Food Environmental And Nutritional Sciences, University of Milan, Milan/Italy
3Department Of Gastroenterology, Anatomic Pathology, Radiology, Surgery, Biochemistry, University Hospital, Parma (Italy), Parma/Italy

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: We aim to explore the role of FODMAPs in triggering IBS symptoms by investigating visceral sensitivity, intestinal inflammation and short chain fatty acid (SCFA) in stress induced IBS mice model. Fructo-oligosaccharide (FOS) as one of the most frequently exposed FODMAPs in daily life was used in this study. Mice were subjected to water avoidance stress (WAS) condition (1:1/day for 10 days) or sham stress (basal condition; 1/day for 10 days) with oral gavage of saline or FOS (8g/kg) for 2 weeks. Then visceral sensitivity was measured by abdominal withdrawal reflex (AWR) in response to colorectal distension (CRD) and histologic analyses were used to evaluate mucosal inflammation. Immunohistochemistry, reverse transcription, and staining were used to estimate mucosal mast cell, levels of cytokines (IL-6, IL-23, TNFα, IL-10, IL-1β) and SCFA, respectively.

Results: Visceral hyperalgesia and low-grade inflammation in WAS mice as a model of IBS. In WAS condition, increased visceral sensitivity and mucosal mast cell (12.3 ± 2.61 vs. 8.33 ± 3.55, P < 0.01) were observed in FOS-administered mice compared with saline-administered mice. In WAS condition, cytokine expression was mediated by FOS with increased IL-23 (3.17 ± 2.11-fold, P < 0.05) in ileum and IL-1β (2.45 ± 1.55-fold, P < 0.05) in colon compared with saline. In addition, the average concentrations of acetic (2.48 ± 0.62 vs. 1.04 ± 0.10, P < 0.01), propionic (0.48 ± 0.09 vs. 0.33 ± 0.09, P < 0.05), and butyric (0.64 ± 0.06 vs. 0.10 ± 0.03, P < 0.05) acids in total SCFA (3.61 ± 0.89 vs. 1.79 ± 0.17, P < 0.001) significantly increased in FOS-administered mice compared with saline-administered mice in WAS condition. In basal condition, no difference of visceral sensitivity, intestinal inflammation and SCFA were observed between mice treated with FOS or saline.

Conclusion: Oral gavage of FOS leads to both an increase in visceral sensitivity and gut inflammation in stress induced IBS mice. These effects are link with the production of SCFA in the gut which involved in the regulation of sensitivity and intestinal immune activation. These findings support the hypothesis that visceral hypersensitivity and intestinal inflammation aggravated by certain FODMAPs may be responsible for IBS symptom generation, and indicate an alternative mechanism of the efficacy of the low-FODMAP diet for IBS patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1952 GENOMIC ANALYSIS OF THE MULTISPECIES PROBIOTIC PRODUCT VSL#3
D. Mora1, W. M. De Vos2, F. P. Douillard3
1Department Of Food Environmental And Nutritional Sciences, University of Milan, Milan/Italy
2Rupu Immunobiology And 3 Dept Of Food Hygiene, University of Helsinki, Helsinki/Finland

Contact E-mail Address: diego.mora@uniimi.it

Introduction: Several formulations consisting of live lactic acid bacteria, including bifidobacteria, are marketed as probiotic products. However, these products are often difficult to understand how they work. Other probiotics further application in treating diseases, limits comparative studies, and prevents predicting their efficacy. We have previously addressed this by providing genomic and functional characterization of single commercial strains (Kainz et al 2009, Douillard et al 2013, Tytgat et al 2016). The multispecies product VSL#3 is marketed globally for treating colitis ulcerosa, pouchitis, and irritable bowel syndrome. To provide a rational basis for understanding the function of VSL#3 and generate a baseline for future studies, the genomes of all 8 strains that make up this multispecies product were determined and used to predict their function. The strains were provided by the facility which is currently producing both the single strains and the blend mix (CSL-SACCO System, Zelo Buon Persico - Lodi - ITALY).

Aims & Methods: The individual strains of multispecies product VSL#3 were grown to stationary phase and DNA was extracted with established methods. The DNA was subject to paired-end Illumina sequencing using a HiSeq2000 platform, assembled and annotated as previously described (Douillard et al 2013).

Results: The next generation sequencing provided high quality genomes of all 8 strains that are components of the multispecies product VSL#3. Detailed phylogenetic and genomic analysis confirmed the species composition to be as indicated in the VSL#3 product specification and showed the 8 strains of this multispecies product to belong to the species Streptococcus thermophilus, Lactobacillus acidophilus, Lactobacillus paracasei, Lactobacillus plantarum, Lactobacillus helveticus, Bifidobacterium breve and B. animalis subsp. lactis (this species included two strains). The species L. paracasei and L. casei were highly related and in need for further official taxonomic resolution. The annotated genes of the assembled genomes were used to identify genes involved in potential probiotic functions. Full sets of genes for the production of tight adherence pili were observed in the Bifidobacterium spp. and are known to produce a signiﬁcant adhesion to host cells. Other putative genes that promote intestinal integrity, and influence host cell development (O’Connell Motherway et al 2011). Moreover, a series of signaling proteins were identiﬁed in the genomes of the Lactobacillus spp., including surface layer proteins and soluble and cell wall associated proteins that we showed to interact with the mucosal surfaces and dendritic cells (Konstantinov et al 2008; Kankainen et al 2008; Tytgat et al 2016).

Conclusion: The genomic analysis of the VSL#3 strains confirmed the product specifications, defined the baseline genetic coding capacity, and predicted a number of probiotic mechanisms that could explain the efficacy of this multi-species product.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1953 RAISING PUBLIC AWARENESS OF GASTROINTESTINAL DISEASES: AN INNOVATIVE STRATEGY FOR A NATIONAL CAMPAIGN
L. Franzoni1, P. Crafa2, A. Bertele2, V. Corrente3, S. Grillo2, S. Landi3, C. Miraglia2, S. Scida1, F. Di Mario3
1Department Of Medicine And Surgery, University Of Parma, Italy, University Of Parma, Parma/Italy
2Department Of Pathology, University Hospital, Parma, Italy, University Of Parma, Parma/Italy
3Department Of Clinical & Experimental Medicine, Clinical Pharmacology & Digestive Pathophysiology Unit, University Of Parma, Parma/Italy
4University Hospital, Parma, Parma/Italy
5Gastroenterology, University Of Parma, Italy, PARMA/Italy
6Gastroenterology, University Of Parma, Italy, PARMA/Italy
7University Of Parma, Parma/Italy

Contact E-mail Address: francesco.dimario@unipr.it

Introduction: Disease prevention and public health awareness are fundamental to reduce morbidity, mortality and health-related costs. Extensive research led to identification of causes of gastrointestinal (GI) diseases; however, the public is still difficult to get population involved. The goals of our pilot campaign are: (a) to raise awareness about GI diseases, risk factors, signs, symptoms, in order to convince people to change behavior and to prompt them with concerns to visit doctors as early as possible; (b) to facilitate communication between healthcare providers and population; (c) to determine the knowledge of health personnel about the appropriate diagnostic investigations. Any information we can share may also benefit patients and their families, in recognition of the many people who suffer with the pain and discomfort caused by GI disorders.

Aims & Methods: We organized population-based events, out of health facilities during which: (a) giant inflatable anatomical models of GI organs that can be visited inside, were installed; (b) educational panels and brochures were set and exhibited both inside and outside the models; (c) videos illustrating endoscopy exams and histopathology examinations were projected and discussed; (d) clinical cases, also mimicking patient encounter, were simulated.

Results: We started an innovative strategy focused on the keywords: multidisciplinary team, scientific rigor but simple words, people attraction, creating communication, in Parma and neighbouring Cities. Specialists in Gastroenterology, Anatomic Pathology, Radiology, Surgery, Biochemistry, Nutrition, together with pre- and post-graduate Students, discussed various aspects of gastrointestinal diseases. Selected people were examined by ultrasound exams. Municipalities and civil society were also involved to ensure organizational efficiency. The most discussed topics regarded dyspepsia, gastritis, helicobacter pylor infection, gastrointestinal reflux disease, alcohol abuse, cirrhosis, hepatitis, irritable bowel disease, inflammatory bowel disease, GI cancer, food allergy and intolerance, optimal nutrition in health and disease. The event performed in the main square of Parma lasted two full consecutive days and was attended by about 3,000 people, most of which also filled a questionnaire. A total of 120 ultrasound examinations were performed. In neighbouring Cities the events were organized for one day; as a consequence, the number of participants was lower in proportion, but very satisfactory.
Conclusion: The events were educational and enjoyable for all age groups. The interactive approach and the environment out of health-care centres facilitated population to feel comfortable and eager to learn, as well as clinical cases simulation provided a valuable entertaining experience. This strategy of raising public awareness of GI diseases seems promising, we are refining the model for a national campaign.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1954 ALTERED PLASMA PROFILE AND URINE EXCRETION OF AMINO ACIDS IN COELIAC DISEASE PATIENTS BEFORE AND AFTER ADMINISTRATION OF OLGFOFRUCTO-ENRICHED INULIN INTO GLUTEN-FREE DIET—RESULTS OF RANDOMIZED, PLACEBO-CONTROLLED PILOT TRIAL

N. Drabinska1, A. Jarocka-Cyrta2, U. Krupa-Kozak3
1Department of Chemistry And Biodynamics Of Food, Institute of Animal Reproduction and Food Research of Polish Academy of Sciences, Olszyn/Poland
2Faculty Of Medical Science, Department Of Clinical Pediatrics, University of Warmia & Mazury, Olszyn/Poland
3Institute of Animal Reproduction and Food Research Polish Academy of Sciences, Olszyn/Poland

Contact E-mail Address: n.drabinska@pan.olsztyn.pl

Introduction: Amino acids are essential metabolites which play a role as protein constituents. Moreover, amino acids and their metabolites feature in regulation of anaabolic and catabolic metabolism, detoxification processes, and act as neurotransmitters. Concentration of circulating amino acids reflects about dietary protein intake and can be an indicative of malnutrition. Changes in the amino acid homeostasis are observed in coeliac disease (CD) [1] due to malabsorption caused by enteropathy but also because of the treatment with gluten-free diet (GFD) shown to be low in the important nutrients.

Aims & Methods: A randomized, placebo-controlled interventional trial was designed to assess the influence of an oligofructose-enriched inulin (OEI) as a supplement of GFD on plasma profile and urine excretion of amino acids in CD patients strictly following GFD at least 1 year. We randomized 34 children diagnosed with CD into a group receiving 10 g of OEI daily and a placebo (maltodextrin) group during a 12-week nutritional intervention. Amino acid profiles in urine and plasma was analysed via gas chromatography/mass spectrometry detection.

Results: At the baseline and after supplementation, 22 and 27 amino acids were identified in plasma and urine, respectively in both groups of children. Significantly higher levels (p < 0.05) of alanine, serine, asparagine, glutamine, threonine, tyrosine, histidine, methionine, lysine, aspartic acid, alanine, glutamic acid, hydroxylysine and cystine were determined in urine of OEI group after intervention as compared to the baseline and placebo group. The analysis of amino acid profiles in plasma samples showed a significant increase (p < 0.05) of majority of amino acids in both OEI and placebo groups after intervention. However, the concentrations of glutamine and glutamic acid were significantly higher (p < 0.05) in the OEI supplemented group.

Conclusion: Our study showed that supplementation of GFD with OEI impacts the amino acid homeostasis in CD children. OEI in GFD increased a total concentration of amino acids in both urine and plasma. Higher excretion of amino acids in urine accompanied with increased amino acid content in plasma may indicate the improved absorption or/and stimulated de novo synthesis of proteins. Increase in the concentration of glutamine can stimulate recovery of the intestinal mucosa by itself or by the involvement in the synthesis of cytokine known as negatively correlated with intestinal mucosal damage [1], therefore we can suspect that OEI added to GFD can help in restoring of the intestinal barrier integrity.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1955 LONG-TERM TRENDS IN HEMATOLOGICAL AND NUTRITIONAL STATUS AFTER GASTRECTOMY FOR GASTRIC CANCER

J. Kim

General Surgery, The Catholic University of Korea, Seoul/Korea, Republic of Korea

Contact E-mail Address: doctor2003@catholic.ac.kr

Introduction: The quality of life and nutritional management after gastrectomy are major issues for gastric cancer patients, as is oncological surveillence. Weight loss usually follows gastric resection, with reported losses ranging from 10% to 30% of the preoperative weight. This loss has been attributed to inadequate oral intake, rapid intestinal transit time, and bacterial overgrowth. Timely, appropriate nutritional intervention can minimize diet intolerance, weight loss, and micronutrient deficiencies that often follow surgery.

Aims & Methods: This study investigated long-term trends in hematological and nutritional parameters after gastrectomy for gastric cancer and evaluated the influence of the reconstruction type on these trends. The medical records of 558 patients who underwent curative gastrectomy with standard lymph node dissection for stage I gastric cancer between January 2006 and December 2013 were reviewed. The hematomatological and nutritional parameters evaluated included haematoglobin, ferritin, vitamin B12, total protein, albumin, total cholesterol, triacylglycerol, and calcium. The patients were followed up for 6 months postoperatively and then annually until death, cancer recurrence, or follow-up loss.

Results: In the long term, ferritin and triglyceride gradually decreased after gastrectomy, while the other parameters decreased slightly or were stable. In the comparisons according to reconstruction type, the Roux-en-Y group had the lowest levels of hemoglobin, ferritin, vitamin B12, total protein, albumin, and total cholesterol beginning 6 months postoperatively compared with the Billroth I and II groups. However, only ferritin and vitamin B12 had significant differences in the 5-year cumulative incidences of deficiency according to the reconstruction type, whereas albumin, triglyceride, total cholesterol and calcium did not.

Conclusion: Although malabsorption and malnutrition are common in patients after a gastrectomy, most nutritional parameters were stable or decreased slightly in the long-term and were not markedly influenced by the reconstruction type or extent of gastrectomy. Therefore, for more accurate nutritional assessment after gastrectomy, multidirectional nutritional support should be considered rather than simply measuring biochemical parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1956 EVOLUTION OF REPRODUCTIVE DISORDERS RELATED TO CELIAC DISEASE UNDER GLUTEN-FREE DIET

A. Assmar1, M. Firwana1, A. Amjahdi2, L. Benbelharbadi2
1CHU Rabat, Rabat/Morocco
2Rabat, Ibn Sina Hospital, Rabat/Morocco

Contact E-mail Address: ayoub.medinterne@gmail.com

Introduction: Celiac disease is an autoimmune enteropathy induced by the ingestion of gluten. The classical form has become a minority. Currently, the most frequent forms of presentation are extradiagnostic with various manifestations, among others, reproductive disorders. The aim of our study is to assess the frequency of these disorders in celiac disease and their evolution under gluten-free diet.

Aims & Methods: Descriptive retrospective study of 173 patients with celiac disease followed in the department of diseases of the digestive tract of the Ibn Sina Hospital in Rabat, over a period of 18 years.

Results: In 173 patient with celiac disease, 58 patients had reproductive disorders. There are 53 women and 5 men. The average age was 32.25 years, the diagnosis of celiac disease was made after surgery at the beginning of the disease, the reproductive problems were never isolated but always associated with other digestive signs at the time of diagnosis of celiac disease. These disorders are represented by: delayed puberty in 11 cases, secondary amenorrhea in 13 cases, irregular menstrual in 12 cases, absence of development of secondary sex characteristics in 8 cases, spontaneous abortions in 7 cases, menometrorrhagia in 4 cases, primary sterility in 5 cases early menopause in 6 cases, premature delivery in 3 cases primary amenorrhea in 2 cases and intrauterine fetal death in 1 case. All our patients have had a gluten-free diet. 15 Patients lost to follow-up, 2 patients died, and 12 patients undergoing follow-up. The remaining 29 patients, the evolution of reproductive disorders under gluten-free diet was favorable in 26 cases (90%), with the normalization of cycles in 15 cases, resumption of cycles in 6 cases development of secondary sex characteristics in 2 cases, fertility resumption in one case, initiation of cycles after primary amenorrhea in one case and delivery of a newborn at term after premature deliveries in one case. The evolution was unfavorable in 3 cases with the notion of miscarriages in 2 cases and intrauterine fetal death in 1 patient and the absence of cycle resumption in 2 cases.

Conclusion: The reproductive disorders associated with celiac disease are frequent and varied. In our study, these disorders responded very well under a gluten-free diet conducted in 90% of the case. These disorders are thus reversible under this diet.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1957 ROLE OF VAGAL AFFERENTS ON HIGH FAT DIET INDUCED ALTERATIONS IN RAT BEHAVIOUR AND GUT MOTILITY

Y. Özütk1, B. Akgün1, Ö. Çetin1, H. Ö. Karata1, B. Güney1, N. Özdemit Kurnaz1, H. Özbey1, S. Arabacı Çetin1, H. Zortul3, I. Peker2, F. Arıoğlu1, C. Erzık1, B. Çalısayan Yeşen2, N. İmerc3
1Third Grade Student, Marmara University, School of Medicine, Istanbul/Turkey
2Physiology, Marmara University, School of Medicine, Istanbul/Turkey

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P1958 OPTIMAL NUTRITIONAL ROUTE FOLLOWING TOTAL GASTRECTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

S. Govil1, D. Chan2, T. Abdelrahman3, A. Folikai2, W. Lewis2, G. Clark2, G. Blackshaw7
1Cardiff University, Cardiff/United Kingdom
2General Surgery, University Hospital of Wales, Cardiff/United Kingdom
3Contact E-mail Address: govils@cardiff.ac.uk

Introduction: Total gastrectomy can profoundly influence patients’ nutritional status and is associated with an increased risk of post-operative complications. The optimal route for nutritional support remains controversial. This systematic review and meta-analysis was conducted to determine the optimal route for nutritional support following total gastrectomy.

Aims & Methods: This systematic review and meta-analysis was conducted by searching relevant databases for randomized controlled trials (RCTs) comparing different nutritional support routes after total gastrectomy. Data were pooled using a random-effects model, and outcomes were analyzed using a fixed-effects model.

Results: Of 105 randomized patients, 102 were enrolled as modified intention-to-treat population. Overall morbidity was significantly greater in patients receiving parenteral nutrition compared with enteral feeding (OR = 1.23, 95% CI: 0.64–2.36, p = 0.25), but not in patients who received enteral feeding (OR = 1.23, 95% CI: 0.64–2.36, p = 0.53).

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1960 REPAIR OF DAMAGED CENTRAL VENOUS CATHETERS SUBSTANCE-DEPENDENT LONG-TERM SURVIVAL IN PATIENTS ON HOME PARENTERAL NUTRITION

Y. Wouters1, R. Vissers1, W. Kiewiet2, G. Wanent1
1Radboudumc, Nijmegen/Netherlands
2Radboud University Medical Center, Nijmegen/Netherlands

Contact E-mail Address: Yannick.Wouters@radboudumc.nl

Introduction: Patients with severe intestinal failure depend on life-long home parenteral nutrition (HPN) therapy (PN) support. Repeated central venous catheter (CVC) loss due to complications, including mechanical damage, compromises vascular access. It remains unclear whether repair of damaged CVCs is an effective strategy to extend catheter life, avoid surgical replacement and maintain venous access.

Aims & Methods: The objective of this study was to characterize patients who underwent catheter repair and to evaluate effects on catheter survival and describe complications. This study concerns a retrospective analysis of all catheter repairs that were performed in HPN patients at the Radboud University Medical Center between January 2000 and May 2017. Primary endpoint was the difference in catheter survival in the presence or absence of catheter repair. To this end, a non-parametric survival analysis was performed. Secondary outcomes included localization of catheter damage and frequency of repair-related complications within 1 month after catheter repair.

Results: A total of 50 repairs in 38 CVCs of 32 HPN patients were included in the analysis. 16 CVCs (52%) were damaged at the distal end, near the screw thread of the catheter. 25 CVCs (95%) at the junction between the rigid and flexible part of the catheter, and 9 CVCs (18%) at the full length of the catheter. The mean time to catheter repair after placement was 2.2 years (95% CI: 1.5–2.9 years). The mean catheter survival after repair was extended by 1.4 years to 3.6 years (95% CI: 2.69–4.46; p = 0.01). No repair-related complications occurred within 1 month after catheter repair.

Conclusion: Repair of damaged CVCs significantly extends catheter life in HPN patients with intact venous access. Catheter repair is a safe procedure.

Disclosure of Interest: Y. Wouters: Previous financial support for prospective study from Geistlich Pharma AG.

All other authors have declared no conflicts of interest.

P1961 LONG-TERM CLINICAL OUTCOMES OF PATIENTS ON HOME PARENTERAL NUTRITION USING TAUROLIDINE CATHETER LOCKS

Y. Wouters1, B. Roosenboom2, W. Kiewiet1, G. Wanent2
1Radboudumc, Nijmegen/Netherlands
2Department Of Gastroenterology And Hepatology, Radboud University Nijmegen, Nijmegen/Netherlands

Contact E-mail Address: Yannick.Wouters@radboudumc.nl

Introduction: Catheter-related complications (CRCs) in home parenteral nutrition (HPN) patients are a threat to both catheter and patient survival. Taurolidine 2%, an antimicrobial catheter lock solution (CLS), is an effective intervention to extend catheter life, avoid surgical replacement and maintain venous access. It remains unclear whether repair of damaged CVCs is an effective strategy to extend catheter life, avoid surgical replacement and maintain venous access.

Aims & Methods: The aim of this retrospective study was to evaluate long-term clinical outcomes of our HPN patient cohort that uses the CLS taurolidine. Between 2008 and 2016, all adult HPN patients requiring a central venous catheter (CVC) placement at the Department of Gastroenterology and Hepatology (DH) who used taurolidine as CLS were included. CRC incidence rates/1000 catheter days were described. Kaplan-Meier analysis was used to determine the time until a first CRC. Cox proportional hazard analysis was performed to identify risk factors for a first CRC.

Results: In 221 HPN patients, 658 CVCs (418 Hickmans, 172 PACs, and 28 non-tunneled CVCs) were inserted, comprising 261225 catheter days. Median survival for Hickmans, PACs and non-tunneled catheters was 175 (43–544), 310 (61–827) and 14 (7–19) days, respectively. During eight years of follow-up, 17 CRBSI occurred and 80 catheter-related occlusions (CRO). CRBSI and CRO rates/1000 catheter days were 0.74 and 0.34, respectively. In 47% and 32% of patients, at least one CRBSI and CRO occurred, respectively. Median time to first CRBSI or CRO was 246 (54–817) and 215 catheter days (5–2070). Numerically, but not significantly, CRBSI and CRO rates decreased over time. The sole use of intravenous fluids was associated with a significantly lower risk for CRBSI (RR 0.32).

Conclusion: CRBSI and CRO rates in HPN patients to date on long-term taurolidine 2% as CLS. Overall, CRC incidence rates were low when compared with the literature. We found no evidence for a decreased effect of taurolidine over time.

Disclosure of Interest: Y. Wouters: Financial support for previous study from Geistlich Pharma AG.

All other authors have declared no conflicts of interest.

P1962 INTESTINAL DYSBIOSIS IN PATIENTS WITH SHORT BOWEL SYNDROME DEPENDENT ON TOTAL PARENTERAL NUTRITION IS REFLECTED BY ALTERED METABOLOME IN FAECES

L. Bajer1, M. Kostovcek1, J. Hradecky2, T. David1, P. Wohl1, J. Spicak1, P. Drasich1, M. Cahova1
1Institute of Clinical and Experimental Medicine, Prague/Czech Republic
2Institute of Microbiology of the ASCR, Prague/Czech Republic

Contact E-mail Address: lukasbajer1@gmail.com

Introduction: Patients with short bowel syndrome (SBS) exhibit substantial disturbances in gut microbiota composition, which implicates significant alterations of intestinal metabolism.

Aims & Methods: The aim of this study was to perform genetic and metabolomic analysis of stool samples collected from SBS patients totally dependent on parenteral nutrition (TPN). We compared the stool samples from 9 healthy individuals and 8 patients with SBS dependent on TPN. Faecal microbiota composition was assessed by sequencing of variable V3 and V4 regions of 16S rRNA gene using Illumina MiSeq TM platform. Library preparation, template purification and template sequencing was performed using the Illumina’s protocol. Obtained data were filtered by quality and length and processed for alpha and beta diversity analyses using QIIME software package. SCFA profile was measured using solid phase microextraction (SPME) coupled to gas chromatography and high resolution mass spectrometry employing time of flight mass analyser (Pegasus GC-HRT; LECO, USA). D-lactate content was determined using Megazyme kit.

Results: Weighted UniFrac analysis revealed significant differences between control and TPN subjects. In healthy controls, most abundant phylum was Firmicutes (64.2 § 7.5%), followed by Bacteroidetes (22.5 § 9.1%) and Actinobacteria (8.9 § 4.5%). Proteobacteria were found only in one control sample. In TPN group, Firmicutes reached 66 § 29% of microbiota but Bacteroidetes were absent and Actinobacteria significantly reduced (1.6 § 4%). Proteobacteria were found in all samples (23.6 § 15%). The most abundant metabolites in control stool samples were short - chain fatty acids (SCFA): acetate, propionate and butyrate. In the TPN group, lactate predominated significantly, while SCFA were absent in the intestinal content of these patients.

Conclusion: Long-term dependence on total parenteral nutrition results in dysbiosis of the intestine residue characterized by extinction of Bacteroidetes and appearance of Proteobacteria. This was reflected by the changes in the composition of prevailing metabolites in stool.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1963 COMPARING RISKS OF ADVERSE EVENTS ASSOCIATED WITH PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) PLACEMENT BETWEEN THE MODIFIED INTRODUCER TECHNIQUE AND THE OVERTUBE ASSISTED PULL TECHNIQUE

H. Matsui1, H. Inomata1, H. Horiiuch1, N. Tamai1, K. Sumiyama1
1Department Of Endoscopy, Jikei University School of Medicine, Tokyo,Japan

Contact E-mail Address: hiro24thtile@yahoo.co.jp

Introduction: Techniques of percutaneous endoscopic gastrostomy (PEG) placement can be divided into two techniques, the pull technique or the introducer technique. Although the difference in procedural safety for the gastrostomy placement, the pull technique, in which the PEG catheter is delivered through the oral cavity and the hypopharynx, inevitably contaminates the peristomal site. A series of studies directly comparing the newly developed modified introducer technique using a blunt cannula compared with the conventional pull technique demonstrated that the modified introducer technique was more preferable regarding procedure related adverse events. Meanwhile, use of an overtube while guiding the catheter into the stomach in pull technique succeeded the reduction of the bacterial implantation. It is still unclear if the modified introducer technique or the overtube assisted pull technique would reduce risks of adverse events.

Aims & Methods: In this study, we retrospectively investigated risks of adverse events associated with the modified introducer technique and the overtube assisted pull method.

Results: During the study period, 236 PEG placements were done in 234 patients. The average age was 69.3 ± 12.5. The modified introducer technique was applied in 167 procedures (70.8%) and the overtube assisted technique was applied in 69 procedures (29.2%). The reason for PEG was placed aiming for the cancer patients in 132 procedures, cerebrovascular accident in 51 procedures, aspiration pneumonia in 32 procedures, and others such as infection and disuse atrophy in 21 procedures. Age (the overtube assisted pull technique > the modified introducer group) and gender (to the modified introducer group) were important factors. The risk of clinically significant adverse events were not different between the two groups. There was no significant difference in the types and the rate of adverse events between the two groups. However, severe peristomal bleedings were observed only in the modified introducer technique group. Four patients required suture placements and 3

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patients required blood transfusion for the peristomal bleeding. In a univariate analysis, age, the rate of aspiration pneumonia as the reason for the PEG placement were higher in patients encountering adverse events (p < 0.05) (table 1). Also, serum platelet level, serum albumin and the rate of nutrition supports for cancer as the reason of the PEG placement was lower in patients encountering adverse events (p < 0.05). In a multivariate analysis, lower serum platelet level was solely recognized as a relevant predictive factor for adverse events (p < 0.05). The types of the technique used were not relevant to risks of adverse events.

**Clinical backgrounds of patients with and without adverse events.**

<table>
<thead>
<tr>
<th></th>
<th>with adverse events (n = 19)</th>
<th>without adverse events (n = 217)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± SD)</td>
<td>77.4 ± 7.9</td>
<td>68.6 ± 12.6</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Sex (male/female)</td>
<td>13/6</td>
<td>162/55</td>
<td>n.s.</td>
</tr>
<tr>
<td>Technique for PEG (introducer/pull)</td>
<td>13/6</td>
<td>154/63</td>
<td>n.s.</td>
</tr>
<tr>
<td>Reasons for PEG (cancer/cerebrovascular accident/aspiration pneumonia/others)</td>
<td>5/5/6/3</td>
<td>127/46/26/18</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Lab tests (mean ± SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ChE (U/L)</td>
<td>184.9 ± 60.8</td>
<td>214.9 ± 78.9</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

(continued)

**Conclusion:** There was no significant difference in overall risks of adverse events between the modified introducer technique group and the overtube assisted pull technique group. However, the modified introducer technique may be associated with higher risks of severer adverse events. Especially, special care should be taken in patients with lower serum platelet level.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**