A less competent oesophago-gastric junction is associated with oesophageal acid hypersensitivity even in healthy controls
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P0001 ALTERATIONS OF THE NO-CGMP PATHWAY IN THIOACETAMIDE-INDUCED LIVER FIBROSIS/CIRRHOSIS IN RATS

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Introduction: Liver cirrhosis is associated with an imbalance between vasodilation and vasoconstriction in the sinusoids. Therefore the investigation of the nitric oxide - cyclic guanosine 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 inductive NO synthase (eNOS and iNOS), phosphodiesterase 5 (PDE5) soluble guanylate cyclase subunit a1 and b1 (sGCa1 and sGCb1) 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-amino-transferase (ALT and 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 ALT, 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 eNOS (1.5fold), PDE5 (7.76fold), and sGCb1 (2.1fold) in fibrotic livers compared to controls. cGMP concentrations in fibrotic animals were slightly decreased (34%). Significantly increased expression of eNOS (2.26fold), PDE5 (11.0fold), sGCa1 (1.70fold) and sGCb1 (3.60fold) 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 sGC-activators, 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 correlation 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

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Introduction: Th17 cells have been proved to contribute to hepatitis B virus (HBV) related liver fibrosis. Group 3 innate lymphoid cells (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 (Lin-CD127+CD117+CD274) and Th17 cells (CD4+IL-17+) were detected by flow cytometry. Peripheral blood mononuclear cells (PBMCs) and PBMCs without ILC3s co-cultured with hepatic stellate cells (HSCs)-LX2 in contact and non-contact manners. Then Th17 cells, which were induced from naïve CD4+ T cells 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, IFN-γ decreased in CHB patients. However, ILC3s decreased in LC patients with reduced cytokines secretion. Th17 cells frequencies significantly increased in 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+/− CCL4 mice reversed made 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 recipients with liver fibrosis and reverse liver fibrosis. Thus, our study suggested the protective role of ILC3s in liver fibrosis, which is through secreting 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/NOD2 IN MICE WITH OBSTRUCTIVE JAUNDICE

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Introduction: Internal biliary drainage has been confirmed better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstructive jaundice. The relevant mechanisms are currently being investigated.

Aims & Methods: We aimed to investigate the potential relation between the expressions of bile acid receptor and TLR4/NOD2 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 NOD2. 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 sacrificed and specimens of blood and ileal tissue of groups were collected. ED and ID were reoperated 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 NOD2 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 the changes were still better than that in SH group and were still lower 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 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-NOD2: IHC and WB suggested that after OJ surgery, the protein expression of both TGR5 and NOD2 increased obviously compared to that of SH mice; then the level of TGR5 and NOD2 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 NOD2 protein. Detection of RT-PCR found that TGR5 mRNA and NOD2 mRNA level in OJ group increased several times as that of the SH group; after ID surgery, the expression of TGR5 mRNA significantly reduced, NOD2 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 NOD2 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

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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 oncogenic 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 were collected, DNA was 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-1-β mRNA levels increased in the small intestine of BDL-mir-21 KO mice, compared with WT. TLR-4 and TGF-β 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 beneficial gut microbiota 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 PTDC/BIM-MEC/089572/2014, 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**

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**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 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. Then we 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 HCC tissue samples. The regulatory effects of ZBP-89 on CSC phenotype were explored by various methods including q-PCR, immunoblotting, tumor 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 significant higher resistance to Sorafenib, compared with their parental cells. The expression of Notch1 and EpCAM was increased along with the treatment of 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 tissues. In vitro study indicated that tumor sphere formation of Huh7 was impaired upon 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 e-cmyc 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 Notch1 target genes including HES1, HES6, HEY1 and NRP1. Amino acids Δα-180 of ZBP-89 could directly bind to the activated Notch1 in the nucleus, resulting in a negative regulation of CSCs and overcome of Sorafenib resistance.

**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 to 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.

**References**

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

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**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 microbial communities. Akkermansia muciniphila can regulate immunologic 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 with A. muciniphila Muc8 (ATTC BAA-835) or saline suspension daily for 21 days. Mouse feces were collected for gut microbiota analysis on the eleventh day, and acute hepatitis was induced by Concanavalin A (Con A, 15 mg/kg) injection through the tail vein. Samples (blood, liver, ileum, colon) were assessed for liver injury, systemic inflammation and intestinal barrier function.

**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-12p40, TGF-β1, MCP-1, iNOS) were significantly decreased in serum treated mice compared to Con A only group. Further investigation showed that Akk enhanced Ocludin and Tjp-1, two proteins related to strengthened intestinal barriers. Fecal 16S rDNA sequencing analysis indicated that Akk elevated 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 Bacteroides abundance decreased. Correlation analysis showed that injury-related factors (IL-12p40, 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 Muc8 (ATTC 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.

**P0009 CLINICAL OBSERVATION ON THE TREATMENT OF NONALCOHOLIC FATTY LIVER WITH PROBIOTICS**

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**Introduction:** Asian countries, especially China, have the highest prevalence of insulin resistance (IR), hyperlipidemia and diabetes and other metabolic disorders in nonalcoholic fatty liver (NAFLD) in China has increased. NAFLD refers to the factors caused by exclusion of alcohol and other clear liver disease. NAFLD is the leading cause of chronic liver disease in developed countries and China. Chronic liver disease is often accompanied by intestinal micro ecological imbalance; studies have shown that the imbalance of intestinal micro ecology led to the transfer of intestinal endotoxin into the blood, and stimulate the production of inflammatory factors aggravate liver damage, thus chronic liver disease. A series of studies show that intestinal microflora, intestinal bacterial overgrowth (SIBO) and intestinal endotoxemia in the occurrence and development of NAFLD plays an important role, and the recovery of intestinal micro ecological balance may have assisted treatment of NAFLD. A series of studies show that changes of intestinal microflora, intestinal bacterial overgrowth (SIBO) and intestinal endotoxemia in the occurrence and development of NAFLD plays an important role, and the recovery of intestinal micro ecological balance may have assisted treatment of NAFLD.

**Aims & Methods:** We aimed to study the clinical effect of probiotics in the treatment of nonalcoholic fatty liver disease. 200 cases of patients with nonalcoholic fatty liver disease were randomly divided into routine treatment group (A group) and combined treatment 3 groups (B, C, D). All cases were given orally Polyene Phosphatidylcholine Capsules, 456 mg, TID; The combination therapy group D was given orally the Live Bifidobacterium Lactobacillus and Enterococcus Powder, 420 mg, TID; group C, two live combined Bacillus subtilis Enterococcus powder, 420 mg, TID. TID; group D was given orally the probiotics above. The course was 1 month. All patients were respectively examined before treatment and seven days and thirty days after treatment, for cholesterol (TC), triglyceride (TG), high density lipoprotein cholesterol (HDL-L), low density lipoprotein cholesterol (LDL-L), alanine aminotransferase (ALT), aspartate aminotransferase (AST), fasting blood glucose (FGG), serum high molecular weight adiponectin (HMW APN) and serum TNF-α. The 4 groups were collected faeces samples, that were tested routine detection, bacterial culture. At the same time all patients were checked with liver ultrasound scan.

**Results:** In terms of blood lipids and blood glucose, each group improved than before, only HDL-Lwas not statistically significant, D group showed significant differences in triglyceride. In liver function, blood ALT, AST were significantly lowered in group D than A, serum TNF-α levels were decreased after treatment in D group. The combined treatment D group was statistically significant; group D more than the group A; serum HMW APN increased after treatment, combined treatment group D comparing with routine treatment group A was significant difference.

**Conclusion:** Intestinal probiotics can regulate the intestinal micro ecological imbalance in NAFLD patients, and reduce the level of serum TNF-α, improve the level of adiponectin, which can further improve the blood glucose, lipid metabolism, and then improve the liver injury of non-alcoholic fatty liver disease.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
MOUSE MODELS OF NON-ALCOHOLIC FATTY LIVER DISEASE

P0011 GUT MICROBIOTA COMPOSITION IN EXPERIMENTAL MOUSE MODELS OF NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction: Non-alcoholic fatty liver disease (NAFLD) has become the most common liver disease worldwide, and is thought to be strongly associated with 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-driven 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 were analyzed in NAFLD (mild fibrosis vs severe fibrosis) and HC patients. A total of 201 patients were enrolled in this study: 68 HC and 143 biopsy-proven NAFLD (77 with mild fibrosis and 66 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).

Results: Among those taxa with greater than 1% representation in any of the diet 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 reduced in patients with blood ET ≥0.32 (p=0.0001). 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 decreased F.P in the NAFLD patients. The decreased abundance of F.B in NASH with severe fibrosis, elevated blood-endotoxin in NAFLD with severe fibrosis patients suggests a role for ET in the pathogenesis of fibrosis. Moreover, our study showed that the mechanism of fibrotic progression via the endotoxin in NAFLD may relate strongly gut-permeability. We postulate that the distinct composition of the gut microbiota among NAFLD and HC could offer a target for intervention or a marker for disease.

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

References

P0012 PREVALENCE OF METABOLIC SYNDROME AND LIVER STEATOSIS IN A PROSPECTIVE MULTICENTER STUDY OF PATIENTS REFERRED FOR HYPERFERRITINEMIA


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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 referred to hyperferritinemia.

Aims & Methods: To study the prevalence of hepatic steatosis determined 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 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 with diabetes; 162 patients with MS (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 76). 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
patients with HFE mutations and (transferrin saturation index (TSI) values alone. But we did not have C282Y/C282Y patients in the 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. Group A (C:160) (women), Group B: PM for HH: C282Y/C282Y; C282Y/H63D, H63D/H63D, and C282Y/H63D > 50%; 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 164 (51.66%); H63D/H63D 99 (31.72%); wt/wt 98 (31.41%); C282Y/S65C 61 (1.98%); C282Y/S65C 0 (%), C282Y/H63D 2 (0.64%); C282Y/C6 16 (5.13%); S65C/S65C 10 (3.21%). LIC was obtained from all the patients by MR. Mean age: 53 ± 13.3, 272 men and 40 women. Group A: 54; Group B: 32 Group C:160; Group D: 54. The mean LIC in all the groups were: Group A: 37.21 ± 27.89, group B: 70.53 ± 56.87, 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 < 0.0001).

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

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

## References

### P0014 LIVER IRON CONCENTRATION IN THE METABOLIC SYNDROME WITH HYPERFERRITINEMIA (DYSMETABOLIC HYPERFERRITINEMIA): RESULTS FROM A PROSPECTIVE COHORT OF 312 PATIENTS

#### Aims & Methods
To study the LIC in patients referred for hyperferritinemia to six different hospitals in the Basque Country (multicenter study), Spain, and determine if there are differences between patients with or without metabolic syndrome. A prospective study of 312 consecutive patients with HF (>200 mg/L women, >300 mg/L men) was conducted from December 2010 to April 2013. The Metabolic syndrome 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 dislipidemia; HDL cholesterol <45 mg/dL men/50 mg/dL women; blood pressure >130 mmHg/85 mmHg or treatment for arterial hypertension (1). LIC was determined by MRI (SIRe method) (2).

#### Results
In 276 of 312 patients we have all the data to determine the MS presence: 115/240 men (48%) and 20/36 women (55.6%), 135 patients, presented MS. In all 276 patients MRI for LIC determination (mean ± SD) was performed. (We have LIC in 272/276 patients). The mean LIC was 30.83 ± 19.38 (women) and 38.84 ± 25.50 (men), with 37.66 ± 24.79 (CI 95%) 33, 44 to 41, 88, for all the MS group. In 141 patients MS was not diagnosed (NMS): 125/240 were men (52%), and 16/36 women (44.4%). The mean LIC was 34.88 ± 16.18 in women, and 44.48 ± 38.16 in men, with 43.39 ± 36.83 (CI 95%), 37, to 49, 46, for all the NMS group. We compare the mean values of LIC from both groups (MS vs NMS) by Pearson’s Chi square test and Fisher’s exact test: no significant differences were seen (p = 0.12).

#### Conclusion
Patients with HF and MS (dysmetabolic hyperferritinemia) present a mean LIC near normal values and their values do not differ from those of patients with HF and without MS.

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

## References

### P0015 INTERLEUKIN-25 PROTECTS AGAINST HIGH-FAT DIET-INDUCED HEPATIC STEATOSIS IN MICE BY INDUCTING IL-25 AND M2 KUPFFER CELL PRODUCTION

#### Aims & Methods
To explore the intracellular signaling pathways of IL-25 to regulate macrophage polarization and direct effects of IL-25 on Kupffer cells. Mouse model of NAFLD was induced by feeding a high-fat diet (HFD); In vitro expansion of mouse Kupffer cells, IL-10 and IL-25 were used to induce M2a Kupffer cells; specific siRNAs were used to knockdown IL-25 receptor mRNA for assessing the direct and specific effect of IL-25 on Kupffer cells. IL-25 induced M2a Kupffer cells were back transfection into the abdomen of NASH mouse to assess the efficacy; Dual-luciferase reporter assays and Chromatin immunoprecipitation assays were used to determine the transcription factor of IL-25 promoter.

#### 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 M2a 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-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 lipotoxicity to hepatocytes. 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 transfection therapy for NAFLD.

#### Conclusion
Our conclusion elucidate the molecular mechanisms of IL-25 during amelioration of hepatic steatosis and provide the scientific basis of direct IL-25 treatment or macrophage transfection therapy for NAFLD.

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

## References

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

#### Aims & Methods
To evaluate if statins independently influence the evolution of 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 treatment. Patients were randomized to two groups: the active group of 60 patients receiving low-dose hydrophilic statin (rosuvastatin 5mg/day) and the witness group of 60 patients, matched by age, gender and sex, receiving placebo.

Results: 97% of subjects fulfilled the follow-up period. The FibroMax staging at baseline showed the following results in the active group: S1–29%, S2–41% and S3–30%; F1–50%, F2–30%, F3–13% and F4–7% of patients, respectively. N1–31% and N2–69%. The staging according to FibroTest, SteatoTest and NashTest was similar in placebo group. After 2 years of low-dose hydrophilic statin, the mean ALT level from active group decreased from 72.22±1U/L to 32.80±1U/L, p < 0.05 (t); in the witness group no significant ALT decrease was noticed (69.34±1U/L to 58.17±1U/L, p > 0.5). The FibroMax showed an increased amount of steatosis and fibrosis 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. NashTest also showed a positive evolution under statin treatment compared with placebo (N0–36%, N1–40% respectively N2–26%, p < 0.001, ss) After adjusting for age, BMI, diabetes, LDL-cholesterol and triglyceride levels, statin therapy showed a significant correlation with the steatosis, fibrosis and NASH stages improvement in the active group (r = 0.92, r = 0.87, respectively r = 0.95, p < 0.005, ss).

Conclusion: While statins proved to be safe and efficient for the treatment of NASH in our series, larger cohort studies are needed to further demonstrate this potential positive effect on liver fibrosis.

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

Reference


P0017 THE ROLE OF GENETIC FACTORS IN NON-OBSESE NASH PATIENTS

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Introduction: Methylenetetrahydrofolate deplete reductase (MTHFR) is the key enzyme in homocysteine metabolism. It is thought that MTHFR A1298C and C677T gene polymorphisms contribute to etiopathogenesis of NASH because of their effects in homocysteine metabolism.

Aims & Methods: Our aim in this study is to determine the relationship between the NASH and MTHFR C677T and A1298C gene polymorphisms, especially in non-obese NASH patients.

Results: Eighty-eight NASH patients whose diagnoses were confirmed by liver biopsies and 90 healthy volunteers as control group were included in the study. We investigated MTHFR A1298C and C677T gene polymorphisms and compared NASH patients and controls. NASH patients were assigned to two groups according to whether they are obese.

Results: Eighty-eight NASH patients (52M, 36F, mean age 45 years), and 90 healthy controls (55M, 35F, mean age 41 years) were included in the study. All patients were non-obese and 33 patients were obese. There was no statistically significant different between distribution of MTHFR A1298C polymorphism of NASH patients and controls (p > 0.05). The proportion of TT genotype of MTHFR C677T polymorphism of NASH patients was significantly higher than that of controls (p < 0.01). Also the proportion of TT genotype of MTHFR C677T polymorphism of non-obese NASH patients was significantly higher than that of controls (p < 0.01). However, the proportion of TT genotype of MTHFR C677T polymorphism of obese NASH patients was not significantly different than the control group (p > 0.05). MTHFR C677T CC (wild) genotype was significantly lower in non-obese NASH patients than controls (p < 0.05).

Conclusion: This study revealed that TT genotype of MTHFR C677T polymorphism is more frequent, especially in non-obese NASH patients than in healthy controls. This finding shows that genetic factors are particularly more important in non-obese NASH patients.

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

Reference


P0019 INVESTIGATION OF THE RELATIONSHIP BETWEEN THE THICKNESS OF THE INTIMA-MEDIA COMPLEX OF COMMON CAROTID ARTERIES AND PATHOLOGICAL CHANGES IN THE LIVER IN PATIENTS WITH ABDOMINAL OBESITY AND NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction: In the last decade, the notion of non-alcoholic fatty liver disease (NAFLD) has undergone noticeable changes. It is shown that in the liver with fatty hepatitis, insulin and glucose utilization is disrupted, conditions are created for the synthesis of atherogenic fractions of cholesterol and triglycerides. This contributes to the development of violations of carbohydrate and lipid metabolism, the early appearance of atherosclerosis and associated cardiovascular complications. Thus, NAFLD can be considered as an independent, additional risk factor of atherosclerosis. Obviously, it is important to clarify the nature of the relationship between NAFLD and the early manifestations of atherosclerotic vascular wall lesions are relevant.

Aims & Methods: Study of changes in the vascular wall of the common carotid artery (IMT CCA) and in patients with abdominal obesity (AO) and different forms of nonalcoholic fatty liver disease (NAFLD). The study involved 60 patients with AO between the ages of 18 to 59 years (waist circumference >80 cm in women and >94 cm in men) and NAFLD, in the absence of clinical manifestations, provided written informed consent to participate in the study.

All patients underwent an ultrasound examination of the abdominal cavity to determine the size of the liver and signs of steatosis. The level of severity of pathological changes in the liver tissue (fibrosis, steatosis and steatofibrosis) was assessed by non-invasive diagnostic method Steatoscreen. (Biopredictive laboratory, France). Measurement of the CCA IMT was performed according to standard procedures on the machine Voluson 730 Expert, equipped with a linear transducer phased array with a frequency of 7.5 MHz. The presence of early signs of atherosclerosis was defined as a local thickening of the IMT CCA more than 0.9 mm in any point of the carotid artery (CCA IMT max). Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steatofibrosis. Depending on the presence or absence of cytology syndrome, 2 subgroups were distinguished in each group: subgroups of non-alcoholic steatohepatitis (ALT values, AST above the norm more than 2 times), and steatosis. In all patients, the levels of CRP and GC were studied. Results: Signs of early atherosclerosis, in the form of the IMT CCA, were detected in the majority of the patients (52%) and differed between the observed groups. The average thickness of the IMT CCA was significantly higher in patients with abdominal obesity (AO) and pathological changes in the liver in the form of severe steatofibrosis on the Steatoscreen scale than in groups of patients with less severe changes in hepatic tissue (0.83 mm for the steatosis group, 0.89 and 0.97mm for fibrosis and steatofibrosis groups respectively, p < 0.001).

Conclusion: NAFLD in patients with AO is characterized by the development of a complex of metabolic disorders associated with vascular thickening and atherosclerosis. This fact can influence the risk of developing the pathology of not only the liver, but also atherosclerosis and proves the need for a more thorough examination of patients with AO and NAFLD for the purpose of early detection and correction of existing metabolic disorders.

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

Reference

complex and pathological changes in the liver, determined by the test SteatoTone (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 atherosclerosis. 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.

**References**


**P0020 OVEREXPRESSON OF HEPASSOCIN IN DIABETIC PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE MAY FACILITATE INCREASED HEPATIC LIPID ACCUMULATION**

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**Introduction:** Insulin resistance is the main pathogenic determinant of both NAFLD and diabetes, and it can facilitate triglyceride accumulation in the liver. The overexpression of hepassocin (HPS) increased hepatic lipid accumulation and NAFLD activity scores (NAS), whereas deletion of HPS improved high fat diet-induced 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 hepassocin of group and IV on comparing with group and II. For group H, there was there was significantly significant increase in mean value of serum hepassocin on comparing with other groups. There was a significant serum hepassocin up regulation 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**


References

P0025 SERUM FERRITIN SPECIFICITY IN PREDICTING EARLY MORTALITY OF PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS
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Introduction: Individuals with chronic liver diseases may have a mild to moderate iron overload, but the mechanism is not fully understood. Increased contents of iron have been attributed to the progression of liver cirrhosis caused by HCV infection, alcohol-induced fibrosis, or alcoholic liver disease. Serum ferritin concentration can be increased in iron overload and shows hepatic necroinflammation. Recently, raised serum ferritin concentration was shown to predict mortality in patients awaiting liver transplantation in decompensated liver cirrhosis but according to later studies plasma ferritin levels were used to predict the early mortality of patients with alcoholic liver cirrhosis (ALC).

Aims & Methods: The aim of this study was to determine the association between serum ferritin concentration and the outcomes of patients with ALC. The study included 72 patients with ALC. ALC was confirmed by laboratory tests, clinical features, radiological imaging, and percutaneous or tranjugular liver biopsy. Alcohol liver disease was confirmed when daily consumption of alcohol was > 30 g/day for males/females, respectively, as confirmed by at least 1 family member of affected individual. All patients were divided into three groups by serum ferritin concentration: below 200 μg/l, 200–400 μg/l and above 400 μg/l. Statistical analysis was performed using statistical software SPSS version 21. ROC (Receiver operating characteristic) curve was used to assess serum ferritin specificity in predicting early mortality. If the area under the curve (AUC) is greater than 0.5, the test is specific.

Results: The first group consisted of 44 patients, the second group 13 patients, the third group 15 patients. The average age was 57.5 ± 11.7 years. Serum ferritin concentration in first group was 58.2 ± 45.9 μg/l, second 293.5 ± 63.5 μg/l, third –599.5 ± 221.1 μg/l. AST concentration in first group was 90.8 ± 70.2 IU/l, second –96.7 ± 53.1 IU/l, third –133.8 ± 95.1 IU/l. ALT concentration in first group was 64.5 ± 75.5 IU/l, second – 66.8 ± 111.9 IU/l. Significant correlation between RTN4 and AST (p < 0.0001), L/S ratio (r = 0.54), thrombocytes (r = 0.49), S1 (n = 21, p = 0.0001), second degree of portal hypertension (p < 0.01) was found.

Conclusion: Serum ferritin level above 400 μg/l, elevated liver enzymes and bilirubin concentration shows a poor outcome of patients with ALC (p < 0.0001). Serum ferritin level is a specific factor for predicting early mortality in ALC. Disclosure of Interest: All authors have declared no conflicts of interest.

P0026 PLASMA RETICULON 4 PROTEIN IS ASSOCIATED WITH Portal Hypertension in Patients With Liver Cirrhosis
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Introduction: Reticulon 4 (RTN4) protein was first described as a potent neurite growth inhibitor in the central nervous system1. However, according to recent research, the protein expression is not limited to the cells of nervous system as it is found in various other tissues, including endothelial cells, fibroblasts, muscle cells, hepatocytes2–5. The diverse location of the protein accounts for various functions such as vascular remodeling, inflammation, and oxidant stress6. The function and expression of the protein in liver disease is still not clear.

Aims & Methods: In this study we aimed to evaluate plasma levels of RTN4 protein in cirrhotic patients and associate them with clinical parameters and portal hypertension. The pilot study included 72 patients with hepatitis C or alcoholic liver cirrhosis and 22 healthy controls. Liver cirrhosis was diagnosed by laboratory tests, radiological imaging and/or liver biopsy. Portal pressure was assessed by hepatic venous pressure gradient (HVPG) measurement. Plasma levels of RTN4 were determined by enzyme-linked immunosorbent assay. Association of RTN4 with biochemical parameters, Child-Turcotte-Pugh and Model of End Stage liver disease (MELD) score, transient elastography values, and histological parameters was analyzed. ROC curve analysis was performed to determine a diagnostic cut-off value of RTN4 in cirrhotic patients and associate them with clinical parameters and portal hypertension.

Results: Plasma RTN4 levels were significantly lower in cirrhotic patients than in healthy controls (p < 0.0001). There was observed significant correlation between RTN4 and Child-Pugh score (r = -0.301; p = 0.015), MELD score (r = -0.311; p = 0.026), transient elastography values (r = -0.331; p = 0.006). There was significant correlation between RTN4 and AST (r = -0.307, p = 0.005), ALP (r = -0.396; p = 0.001). Total bilirubin (r = -0.426; p < 0.0001), thrombocytes (r = 0.534, p < 0.0001), INR (r = 0.357, p = 0.002) concentrations. RTN4 correlated with HVPG (r = -0.298; p = 0.011) and predicted CSIP (p < 0.001) as well as SPH (p < 0.001). Using a RTN 4 cut-off value of ≤1.7 ng/ml, the AUC for...
detection of CSPH was 0.71, with positive predictive value of 75% and negative predictive value of 55% not in SBP/PCA vs. specificity 71%. RTN4 value of \( \leq 1.1 \text{ng/ml} \) was associated with esophageal varices (odds ratio [OR] = 3, 63, \( p = 0.022 \)).

**Conclusion:** Low levels of RTN4 are associated with liver cirrhosis and portal hypertension, with RTN4 correlate with liver function. It may be a surrogate marker of CSPH and presence of esophageal varices.

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

**References**


**P0028**

**MICRORNAS IN ASCITES AS POTENTIAL BIOMARKERS FOR PERITONEAL CARCINOMATOSIS AND PERITONITIS**

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**Introduction:** Peritoneal carcinomatosis (PCA) has a prognostic role in patients with gastrointestinal cancers. Despite the low sensitivity, cytology remains the gold standard in differential diagnosis of PCA to peritonitis (for example spontaneous bacterial peritonitis, SBP) or uncomlicated ascites due to portal hypertension (no SBP/PCA). MicroRNAs (miRNAs) are considered as promising biomarkers and are commonly disregulated in cancer.

**Aims & Methods:** In this proof-of-principle study, we systematically evaluated preanalytical factors and potential of miRNAs as ascites biomarkers. We prospectively examined samples from patients with ascites with benign and malignant conditions including: PCA (n = 15), SBP (n = 15) and portal hypertension (no SBP/PCA, n = 15). Various extraction kits were used to compare the total RNA extraction. Furthermore, we systematically evaluated the influence of storage, stability and sample processing (uncentifuged, pelletted etc.) on miRNA expression in ascites. MiRNA expression profiling using Taqman Low Density Array (TLDA) and quantitative RT-PCR (TaqMan/SYBRgreen) were used to evaluate the expression.

**Results:** Systematic analysis of miRNAs stability confirms that miRNAs in ascites are well preserved from degradation with good short-0 (8h, 12h, 24h, and 48h) and long-term stability (30 C, –80 C for 2 years). Several miRNAs that were selected for the proof-of-principle analysis (miR-21 and miR-16) were reproducibly detectable in ascites samples. MiRNA expression profiling in patients with PCA compared to those with uncomlicated portal hypertension revealed miR-21, miR-16, miR-222 and miR-483-5p to be up-regulated and miR-26b to be down-regulated. MiRNA expression validation confirmed higher expression of miR-21 (mean delta CT \( \pm SD \) = ±11.11 ± 1.2 vs. -8.46 ± 3.46 vs. -9.65 ± 2.55 for no SBP/PCA, PCA and SBP, respectively. ANOVA, \( p = 0.026 \); posttest no SBP/PCA vs. PCA \( p = 0.05 \) and miR-16 in patients with PCA compared to no SBP/PCA groups, while miR-223 was significantly upregulated in SBP (mean \( \pm SD \) = ±12.16 ± 1.56 vs. -10.05 ± 3.19 vs. -6.93 ± 3.56 for no SBP/PCA, PCA and SBP, respectively, ANOVA, \( p < 0.001 \); posttest SBP vs no SBP/PCA and vs. PCA \( p < 0.05 \)).

**Conclusion:** Our data provide novel evidence for the differential expression of miRNAs in ascites in patients with PCA and SBP. Evaluation of ascites-miRNAs may offer an alternative approach for diagnosis of peritoneal carcinomatosis and create an avenue for therapeutic application as well.

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

**References**


**P0029**

**INHIBITION OF CYCLOOXYGENASE-2 AMELIORATES SPLENOMEGALY IN CIRRHOTIC RATS**


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**Introduction:** Splenomegaly is a common finding in liver cirrhosis. However, the precise underlying mechanisms behind this phenomenon have not been elucidated, and its effective therapies are limited.

**Aims & Methods:** We aimed to investigate whether cyclooxygenase-2 (COX-2) is involved as a contributing factor in the pathological process of splenomegaly in cirrhosis. Thirty-six male Sprague-Dawley rats were randomized into 3 groups with 12 rats in each group. The control group received intraperitoneal injection of normal saline (1 ml, twice a week); the TAA group received intraperitoneal injection of thioacetamide (TAA, 200 mg/kg, twice a week for 16 weeks); the TAA + celecoxib group received TAA intraperitoneally and celecoxib via gastric gavage (20 mg/kg/day). The portal pressure was measured by portal venous catheterization. Sections from paraffin-embedded spleens were stained with hematoxylin and eosin and Sirius Red, and immunostained with VEGF and CD31. The protein expressions of COX-2, VEGF, PI3K, p-AKT, and AKT in the spleen were assessed by Western blot. The enzyme-linked immunosorbent assay was performed to evaluate the expression of TNF-a and IL-1b in the spleen.

**Results:** The ratio of splenic weight to body weight increased by 73.9% in TAA group, while in rats treated with celecoxib, the ratio was significantly reduced. While determined by H&E staining, areas of splenic white pulp in the TAA group enlarged by 27.9%. Yet, compared with that in TAA group, celecoxib obviously decreased the area of splenic white pulp by 77.6%. Besides, the portal pressure elevated by 79.1% in the TAA group; while significant reduction of the portal pressure was observed in the TAA + celecoxib group (by 28.8%). In addition, a considerable amount of collagen was visualized with Sirius Red and immunostained with VEGF and CD31. The protein expressions of COX-2, VEGF, PI3K, p-AKT, and AKT in the spleen were assessed by Western blot. The enzyme-linked immunosorbent assay was performed to evaluate the expression of TNF-a and IL-1b in the spleen.

**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 involved in the development of pathological angiogenesis. However, the treatment with cexebxox 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 cexebxox 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 PS3 – A POSSIBLE BACTERIAL DEFENSE MECHANISM IN SPONTANEOUS BACTERIAL PERITONITIS?**

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**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 antibiosis.

**Aims & Methods:** With regard to the development of early recognition systems, pathomechanisms and signaling pathways of bacterial translocation in SBP were explored. These insights might lead to an initiation of antibiosis 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 to 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, E-cadherin and the p53 family including p53 and p73. These changes were dependent on incubation time and bacterial concentration. Following bacterial infection, marginal to no effects were detected on mRNA levels of cellular junctions and p53. Caco-2 cells displayed less reduction of Occludin and E-cadherin protein levels compared to p53-wildtype HCT-116 cells.

**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 mechanisms to protect bacteria from intestinal 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**

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**Introduction:** Pathological bacterial translocation (BPT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality several-fold. 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 (CCl4) - were used. Fuzzy evaluation and TNF-α, as well as excess synthesis in of ECM components such as COL-1, COL-3, COL-4, fibronectin and elastin, were assessed by using thevidual analysis were performed to analyze changes in mRNA and protein levels of Occludin, E-cadherin, p53 and p73. These changes were dependent on incubation time and bacterial concentration. Following bacterial infection, marginal to no effects were detected on mRNA levels of cellular junctions and p53. Caco-2 cells displayed less reduction of Occludin and E-cadherin protein levels compared to p53-wildtype HCT-116 cells.

**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 mechanisms to protect bacteria from intestinal immune responses and therefore to promote bacterial translocation in SBP.

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

**Results:** We have observed a significant reduction in mucus thickness in ileum and in the proximal colon (Control 54.38 μm ± 12.51 vs BDL 100.74 μm ± 0.6 in proximal colon) and goblet cell numbers in ileum (Control 0.47 GC/100 μm of villus ± 0.07 vs BDL 0.29 GC/100 μm of villus ± 0.04) of mice following BDL but not PPVL (Control 0.27 GC/100 μm of villus ± 0.11 vs BDL 1.5 μm ± 0.1 in ileum; control 154.38 μm ± 12.51 vs BDL 100.74 μm ± 0.6 in proximal colon) and goblet cell numbers in ileum (Control 0.47 GC/100 μm of villus ± 0.07 vs BDL 0.29 GC/100 μm of villus ± 0.04).

**Conclusion:** All these results suggest that a reduced bile production by the cirrhotic liver and not portal hypertension per se interfere in the goblet cell development and/or maturation. In addition, this effect can be, at least partially, be restored by the FXR agonist OCA. Our study opens the possibility to, so far, unknown effect of bile salts in the intestinal epithelium development in the context of liver cirrhosis being a clear candidate for mucus layer regulation and hence protective effect against bacterial translocation.

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

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**P0032 CAPSAINCIN AND SULFORAPHANE PREVENT THE ADVANCEMENT OF LIVER FIBROSIS IN AN EXPERIMENTAL MODEL OF LIVER CIRRHOSIS**


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**Introduction:** We have observed a significant reduction in mucus thickness in ileum and in the proximal colon (Control 54.38 μm ± 12.51 vs BDL 100.74 μm ± 0.6 in proximal colon) and goblet cell numbers in ileum (Control 0.47 GC/100 μm of villus ± 0.07 vs BDL 0.29 GC/100 μm of villus ± 0.04).

**Conclusion:** All these results suggest that a reduced bile production by the cirrhotic liver and not portal hypertension per se interfere in the goblet cell development and/or maturation. In addition, this effect can be, at least partially, be restored by the FXR agonist OCA. Our study opens the possibility to, so far, unknown effect of bile salts in the intestinal epithelium development in the context of liver cirrhosis being a clear candidate for mucus layer regulation and hence protective effect against bacterial translocation.

**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**

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**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 paragastric 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 elongated 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 of 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.

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**P0034 PORTAL HYPERTENSION: COLOPATHY BUT NOT ILEOPATHY IS COMMON IN EGYPTIANS WITH LIVER CIRRHOSIS**

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**Introduction:** Liver cirrhosis and portal hypertension are associated with esophageal varices, gastric varices, small and large intestinal entero- pathies.

**Aims & Methods:** We aimed to study the prevalence of colopathy and ileopathy in patients with portal hypertension secondary to liver cirrhosis. Chronic hepatitis C patients with portal hypertension secondary to liver cirrhosis were enrolled. The severity of cirrhosis was classified by the Child-Pugh score. All patients were evaluated by upper endoscopy and colonoscopy for screening of portal hypertension complications. Esophageal varices were graded as small, moderate and big varices. Portal hypertension gastropathy was classified as absent or present, and, if present, it was sub-classified as mild or severe. Colonoscopy was done up to the terminal ileum in all patients.

**Results:** Our study included sixty chronic hepatitis C patients with portal hypertension secondary to liver cirrhosis (53.33% females) their mean age (±SD) was 54.75 (±13.13) years. Child-Pugh class was A for 2 (3.3%), B for 33 (55.9%) and C for 24 (40.7%). 53 (88.3%) patients had esophageal varices (23 patients had small esophageal varices, 15 had moderate, and 8 had big varices, 2 post-band ligation and 5 obliterated varices). Gastric varices were present in 3 patients (5%). Portal hypertension gastropathy was noted in 43 patients (71.0 %) and was mild in 38 and severe in 5 patients. Colonoscopy finding up to the terminal ileum revealed that portal hypertensive colopathy was present in 16 patients (26.7%). portal hypertensive ileopathy was noted only in one case (1.7%). No colonic or ileal varices were noted.

**Conclusion:** Portal hypertensive colopathy but not ileopathy is common in Egyptians with liver cirrhosis. Ileal varices and ileopathy are not common in patients with cirrhosis and PHT.

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

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**P0035 PREDICTIVE FACTORS FOR THE DEVELOPMENT OF ACUTE-ON-CRCHRONIC LIVER FAILURE IN PATIENTS WITH GASTROINTESTINAL BLEEDING**

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**Introduction:** Acute-on-chronic liver failure (ACLF) is a specific clinical form of liver failure in patients with liver cirrhosis, referred as acute deterioration of liver function associated with an acute specific complication of liver cirrhosis. ACLF is defined by the presence of renal failure or 2 organ failures according to the European Association for the Study of the Liver-International Chronic Liver Failure consortium: 1) circulatory- need for vasopressor support; 2) renal- serum creatinine value ≥2 mg/dL; 3) cerebral- Grade III or IV hepatic encephalopathy; 4) respiratory- SpO₂/FIO₂ ≤ 214.

**Aims & Methods:** We aimed to identify predictive factors for ACLF development in cirrhotic patients admitted for variceal gastrointestinal bleeding. All patients admitted with variceal bleeding in the Institute of Gastroenterology and Hepatology Iasi (consisting of 8 secondary hepatology centers) between June and December 2016 were evaluated for ACLF (we excluded from the study the patients presenting ACLF diagnosis criteria on admission). We compared cirrho- tic patients who developed ACLF after 12 hours of admission with those who did not.

**Results:** 99 cirrhotic patients with gastrointestinal bleeding were evaluated. 45.5% of patients admitted with variceal bleeding developed ACLF. Demographic data were similar in patients with ACLF vs. no ACLF in age (54.2 ± 7.3 vs. 56.6 ± 9.5 years), male sex (54 vs. 45), and diabetes (56 vs. 43) and significant difference was found in alcohol consumption (72 vs. 27). In patients with ACLF, the grade 1 was the most frequent (56.3%); grade 2 (33.3%) and 3 (10.4%) of ACLF were more rare and no significant differences between the ACLF subgroups was observed. The patients with ACLF were more likely to be admitted with infections and alcohol consumption, when compared to patients without ACLF. Independent predictors for ACLF development included a high admission MELD (P < 0.05), presence of infection and alcohol abuse (p < 0.001), hospitalization in the last 6 months (p < 0.05). Inhospital and 30-day mortality were significantly higher in patients with ACLF (P < 0.0001).

**Conclusion:** Patients admitted with variceal bleeding, with alcohol consumption, high MELD on admission, previous admission in < 6 months are more likely to develop ACLF and need to be monitored closely for the development of ACLF. **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/CD65-E-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 RIFAXIMIN-A IS ASSOCIATED WITH REDUCTIONS IN EMERGENCY DEPARTMENT RESOURCE USE IN UK PATIENTS WITH HEPATIC ENCEPHALOPATHY: REAL-WORLD EVIDENCE FROM THE IMPRESS STUDY

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Introduction: In clinical trials rifaximin-A (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 admission, per- and post-RFX initiation

<table>
<thead>
<tr>
<th>Resource use parameter*</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 (264)</td>
<td>118</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances with or without admission/patient</td>
<td>81 (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 (118)</td>
<td>60</td>
<td>–</td>
</tr>
<tr>
<td>ED attendances without admission/patient</td>
<td>61 (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 (146)</td>
<td>58</td>
<td>–</td>
</tr>
<tr>
<td>Admissions via ED/patient</td>
<td>74 (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 (18.2) (2.6)</td>
<td>7.2 (2.0)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*pData 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

Number of patients with ≥1 ED attendance/admission in the observed periods *Paired t-test

References

P0038 PREDICTING FACTORS FOR HOSPITAL READMISSION AFTER THE FIRST EPISODE OF HEPATIC ENCEPHALOPATHY

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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: 8% 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
P0039 SAFETY, EFFICACY AND RISK OF COMPLICATIONS FOR CIRRHOTIC HCV PATIENTS WITH THROMBOCYTOPENIA AND HYPOALBUMINEMIA TREATED WITH OMBITASVIR/R–DASABUVIR/R–RIBAVIRIN – A REAL-LIFE COHORT
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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 hypoalbuminemia were markers for portal hypertension and hepatic synthetic dysfunction, respectively, have been shown to reduce the likelihood 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 thrombocytopenia and hypoalbuminemia on treatment outcome and disease complications. We included in this study 855 HCV-infected cirrhotic patients treated with ombitasvir/paritaprevir/þ-dasabuvir/þ-ribavirin for 12 weeks in 10 university hospitals in Romania. The following groups were studied: 151 patients (17.7%) with albumin <3.5 g/dl, 238 (28%) with thrombocytopenia (a cutoff of 100000/mm² was used) and 71 patients (8.3%) with both hypoalbuminemia and thrombocytopenia. The multivariate analysis showed significant association of hypoalbuminemia with mortality (odds ratio [OR] 1.7; 95% confidence interval [CI] 1.3 to 2.1; P=0.002) and at 30 days post-therapy and complication 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 60 (27–69), 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 hypoalbuminemia. 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 hypoalbuminemia. The multivariate analysis showed significant association of thrombocytopenia (<100000/mm²) with higher (≥1) degree of oesophageal varices (OR 9.5; 95% CI 0.7–135; P=0.011), and prior exposure to interferon based regimens (P=0.025). 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 the ombitasvir/paritaprevir/þ-dasabuvir/þ-ribavirin (as recommended by national regulations) was not different in cirrhotic patients with hypoalbuminemia and thrombocytopenia, but complications rate was higher so close follow-up and proffilactic measures should be recommended, especially if previously exposed to interferon containing regimens.

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

P0040 REAL-WORLD IMPACT OF RIFAXIMIN-A USE IN HEPATIC ENCEPHALOPATHY PATIENTS WITH ADVANCED LIVER DISEASE OR CONTINUED ALCOHOL MISUSE: A POST-HOC ANALYSIS OF THE IMPRESS STUDY
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Introduction: In the UK multicentre, retrospective, real-world study, IMPRESS, rifaximin-a (RFX) use in patients with hepatic encephalopathy (HE) significantly reduced hospitalisations and length of stay in the 6 and 12 months post-RFX initiation compared to the respective periods pre-RFX initiation. This post-hoc analysis of the IMPRESS data compared hospital resource use pre- and post-RFX initiation in 2 sub-groups of difficult-to-treat HE patients: those with advanced liver disease or continued alcohol misuse.

Aims & Methods: Medical records of patients from 11 UK hospitals who were prescribed RFX for HE between July-2008 and May-2014 were retrospectively reviewed; details of demographic and clinical characteristics, and all-cause hospitalisations were collected in the 6 and 12 months pre- and post-RFX initiation. Patients with baseline MELD score ≥15 or not abstinent at the end of the study period were included in this analysis. Statistical significance of the mean change (standard error of the mean, SEM) was calculated using paired t-test or Wilcoxon test.

Results: Only patients alive at the end of the 6 and 12 months RFX-treatment periods were included: 114 and 102, respectively. Amongst these, 33/114 (29%), for the 6 months) and 26/102 (25%, for the 12 months) had baseline MELD ≥15; mean age, 63 years; 70% were male; 66% had alcohol-related liver disease; mean MELD 24. The mean (SEM) number of bed days/patient decreased from 25 (6.0) in the 6 months pre-to 15 (5.5) in the 6 months post-RFX initiation, and from 36 (9.5) in the 12 months pre- to 20 (7.7) in the 12 months post-RFX initiation (p value not significant). At 6 months post-RFX initiation, 15/114 (13%) patients were still actively drinking. At RFX initiation, mean age was 56 years; 73% were male, mean MELD was 19. Despite this, the mean (SEM) number of bed days/patient decreased from 36 (7.9) in the 6 months pre-to 15 (5.4) in the 6 months post-RFX initiation (p=0.048), and the mean of hospitalisations/patient fell from 2.8 (0.5) to 1.2 (0.4) (t-test p=0.059; Wilcoxon test p=0.029). Too few patients with continued alcohol misuse were alive at 12 months to evaluate. Two patients reported adverse events, none serious.

Conclusion: In UK clinical practice, treatment with RFX for HE for 6 or 12 months suggested trends in reduced hospital length of stay in patients with advanced liver disease and in those with continued alcohol misuse. However, larger studies are needed to strengthen these findings.

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. Cipelić: 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

P0042 BACTERIAL INFECTION IN PATIENTS WITH DECOMPENESATED CIRRHOSIS - A PREDICTOR OF LONG-TERM MORTALITY INDEPENDENT OF DISEASE SEVERITY
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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 the 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.

Results: Forty-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 encephalopathy (37%). The incidence of bacterial infection was 25%: 43% 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 (ratio hazard at HR 1.073, p=0.012), age (HR 1.032, p=0.012). Bacterial infection remained an independent predictor of mortality, even when excluding patients with in-hospital mortality and all-cause deaths (HR 3.093, p=0.005).

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.
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P0043 A PROPORTIONALLY GREATER ELEVATION IN LIVER TRANSPLANT CANDIDACY IN PATIENTS WITH NAFLD AND PORTAL VEIN THROMBOSIS

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

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 from 2003 to 2014 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 endoscopically defined 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 endpoint 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 aimed to draw this conclusion 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 varices. 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, 23.2% of patients with other liver-related diseases (P < 0.001). 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 < 0.001). 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 = 0.04). Risk for mortality, measured by risk ratio (RR), did not change per gender (RR: male/ female = 44.8%/28.6%, P = 0.024 in favor of fundic varices development) and RR: 0.05). However, it changed with the existence of fundic varices (RR: 0.49 (95% CI 0.24-0.96)) and in favor of fundic varices development) and RR: 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. Oldest patients who were responding more cirrhotic HCC and high mortality rate. These findings should constitute a reliable guideline for evaluating patients at the transplant center and for health policy makers to develop better strategic preventive measures against liver diseases.

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

Reference

This was a retrospective Retrospective study of consecutively evaluated all bacterial infections with confirmed microbiological isolation in patients with decompensated liver cirrhosis admitted to the Gastroenterology ward between January 2009 and May 2016.

Results: There were 308 infections with confirmed microbiological isolates, corresponding to 218 hospitalizations, in a total of 161 patients. The median age of the patients was 63 years (IQR 55–71) and 67% of them were men. Alcoholic liver disease was the major cause of cirrhosis (72%). Among the infections evaluated, 87% were nosocomial and 13% community-acquired. Urinary tract infection was the most common infection (57%). In 27% of patients there were at least two concomitant bacterial infections. Multidrug resistant (MDR) bacteria were isolated in over half of patients. In the multicovariate analysis, prophylaxis for spontaneous bacterial peritonitis (OR 2.3, p = 0.009), MELD score greater than 19 at admission (OR 1.7, p = 0.043), hospitalization in an Intensive/Interimmediate Care in the previous month (OR 2.8, p = 0.001) and antibiotic therapy for infection in the last 6 months (OR 2.4; p = 0.001) were independently associated with MDR infection. 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 (AUROC 0.723; 95% CI 0.667–0.780). The occurrence of a MDR infection was associated with a longer duration of hospitalization (p = 0.007). In the multivariate analysis there was no independent association between MDR infection and in-hospital mortality and one month after discharge.

Conclusion: The prevalence of MDR bacterial 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

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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 3 months of treatment.

Results: Old chronic hepatitis C patients who were treated achieved primary virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment) with percentage 100% and sustained virological response (end of treatment)

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

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

Reference

P0044 RISK FACTORS AND PREDICTIVE MODEL FOR THE DEVELOPMENT OF MULTIDRUG RESISTANT BACTERIAL INFECTIONS AND THE IMPACT ON PROGNOSIS IN HOSPITALIZED DECOMPENSATED LIVER CIRRHOSIS PATIENTS

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Introduction: Bacterial infections are a leading cause of mortality in patients with decompensated cirrhosis. Aims & Methods: The objective of this study was to evaluate the prevalence of multidiscussion bacterial infections, associated risk factors and their impact on prognosis in hospitalized decompensated liver cirrhosis patients.

Reference
HEPATIC FIBROSIS PROGRESSION IN PATIENTS WITH CHRONIC HEPATITIS C

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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 extracellular 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 metalloproteinase-1 (TIMP-1) and collagen IV. According to fibroscan, patients were classified into those with non-significant fibrosis (F<2) and significant fibrosis (F2).

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 score named 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 (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 magnitude of correlation of each score to hepatic fibrosis progression.

Conclusion: Egypt 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 BRC, 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

P0047 EXTRACELLULAR MATRIX PROTEINS CIRCULATING LEVELS SUBSTANTIATE THE EFFECT OF IL-28B RS12979860 T ALLELE ON FIBROSIS STAGE OF CHRONIC HEPATITIS C TYPE 4

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Introduction: In patients with chronic hepatitis C, host genetics influence liver fibrosis, particularly modulators 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 stage scoring 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 allele 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 (P1P3) 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 the increase in the Fibroscan and extracellular matrix proteins serum levels and increased risk of worse clinical outcomes.

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 IL28B polymorphism. Similar to FibroScan, HA, laminin (r=0.3) and P1P3 (r=0.4) serum levels showed significant (P<0.0001) positive associations with IL28B 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 ± 2.28 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 P1P3 serum levels to differentiate CC from other IL-28B genotypes were 0.91, 0.85, 0.84, 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.

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>
<th>Odds ratio (95% CI)</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>
<td>16.18 (6.59–39.70)</td>
</tr>
<tr>
<td>BRC score *</td>
<td>0.83</td>
<td>&gt;7.2</td>
<td>97</td>
<td>70</td>
<td>76</td>
<td>12.86 (3.44–48.13)</td>
</tr>
<tr>
<td>FRT +</td>
<td>0.82</td>
<td>&gt;4.0</td>
<td>99</td>
<td>11</td>
<td>69</td>
<td>10.71 (1.21–94.60)</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>
<td>12.25 (4.39–34.19)</td>
</tr>
<tr>
<td>APRI +</td>
<td>0.80</td>
<td>&gt;1.5</td>
<td>29</td>
<td>94</td>
<td>50</td>
<td>6.13 (1.76–21.06)</td>
</tr>
<tr>
<td>Fibro-score (43)</td>
<td>0.73</td>
<td>&gt;1.28</td>
<td>95</td>
<td>19</td>
<td>72</td>
<td>4.54 (1.33–14.17)</td>
</tr>
<tr>
<td>FibroQ(44)</td>
<td>0.63</td>
<td>&gt;1.6</td>
<td>93</td>
<td>13</td>
<td>69</td>
<td>1.80 (0.53–6.04)</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 BRC, FRT, King’s score, APRI, Fibro-score and FibroQ in this group of Egyptian patients.
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). All regimens were given for 12 weeks except SOF/RBV which was given for 24 weeks. HCV RNA was tested at week 4 of treatment, and 12 weeks after treatment cessation to check for SVR 12.

Results: Our cohort 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/DAC/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%, 99.7%, 100%, 91.5% and 98% for (PEG/SOF/RBV), (SOF/DCV), (SOF/DAC/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.
PO050 GENETIC EPIDEMIOLOGY OF HCV INFECTION IN UPPER & LOWER EGYPT: A MULTICENTRE FAMILY-BASED STUDY

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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 (4.0%). Geographically, HCV is highly prevalent in the Nile delta (15.8%) than in Upper Egypt (9.0%). 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 individuals were recruited to the hospital 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 contacts 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 or disorders (first and second degree consanguinity, living and sharing usual life activity and having at least 15 years of exposure to the index case). The positive cases (either 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-Age of HCV related liver diseases. While cases were diagnosed as spontaneously cleared the virus (SVC) based on the following criteria: 1) spontaneous ALT normalisation; 2) 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 5’UTR of the HCV 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 2.49% & 1.55% 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%) 4o (0.2% & 2.9%) 4i (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>4o</td>
<td>0.2</td>
<td>2.9</td>
</tr>
<tr>
<td>4i</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>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


PO051 RED BLOOD CELL DISTRIBUTION WIDTH (RDW) AS NON INVASIVE PREDICTOR OF LIVER FIBROSIS IN CHRONIC HEPATITIS C PATIENTS: GENOTYPE 4

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Introduction: Red blood cell distribution width (RDW) is a numerical measure of the variability in size of red cell. It 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 outcome 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 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 laboratory & radiological investigations in addition to using KX-21 Sysmex automated hematology analyzer to measure RDW & RPR (RDW%=Platelet ratio index). Comparing with other parameters liver fibrosis like APRI (AST-to-Platelet ratio index) FIB-4 equation (using platelet count, AST, ALT, age) to perform this test. PCR HCV RNA, genotyping & liver biopsy (using METAVIR scoring system where cases were classified into early fibrosis (F1+F2): 68 patients & late fibrosis (F3+F4): 32 patients were done.

Results: RDW & RPR were significantly higher in patients with late fibrosis > early fibrosis (P < 0.0001) while platelets count was significantly lower in late fibrosis > early fibrosis (p < 0.0001). By applying ROC curve it was found that the cut off value of RDW was 16.5, with sensitivity 86.8% specificity 85.9% & accuracy 86% & the cut off value of the platelets was 196.5 with sensitivity 81.8%, specificity 62.8% accuracy 67%, while RPR cut off value was 0.0897 with sensitivity 90.9%, specificity 85.9% & accuracy 87%. As regard APRI it was found that the cut off value was 0.40 with sensitivity 72.7%, specificity 66.7% & accuracy 68% While FIB-4 equation showed cut off value 1.685 with sensitivity 77.3%, specificity 66.7% and accuracy 69%. In conclusion the area under the ROC curve for. RDW & RPR were excellent but for platelets, APRI & FIB-4 were fair. When applying regression analysis it was found that the RDW (OR:3.903, 95% CI: 1.538–9.904) & Platelets (OR:0.953, 95% CI: 0.913–0.995), so as the level of RDW increase by one unit the risk late fibrosis will increase by 3.9 fold & the other hand when the platelets increase by one unit the risk of late fibrosis will decrease by 0.953.

Conclusion: RDW & RPR may be used as simple, non-invasive predictors of advanced fibrosis in patients with chronic hepatitis C genotype-4.

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

Reference

39(3):862–3; author reply 863.

PO052 CANCER INCIDENCE IN VARIOUS ORGANS OTHER THAN THE LIVER FOLLOWING DIRECT-ACTING ANTIVIRAL (DAA) THERAPY FOR HEPATITIS C

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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 determined 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 and Cox regression analysis. 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 DAs (n = 324, median age: 70, male: 41%) and those treated with IFNs (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 most frequently 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:** Cox regression analysis for cancer incidence other than the liver in IPTW samples

<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>4.491</td>
<td>1.264–15.96</td>
</tr>
</tbody>
</table>

**Conclusion:** Because cancer detection in organs other than the liver can be challenging in management of hepatocellular carcinoma, some cancers 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 post-survey, 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**


**P0053 OPTIMIZATION OF DIRECT ANTI-VIRAL AGENT TREATMENT SCHEDULE: FOCUS ON HCV GENOTYPE 3**

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

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**Introduction:** The impact of the virological cure on the evolution of cirrhosis has been redefined with the introduction of direct-acting antiviral agents (DAA) for HCV. Recently, some papers reported an elevated incidence of recurrence of hepatocellular carcinoma (HCC)[5,6], others a possible rise on the de novo incidence of HCC in the first year after treatment with DAA[5,6,7], but not others[8].

**Aims & Methods:** This is a prospective study of cirrhotic patients treated with DAA between February/2015 and January/2017, under HCC screening with ultrasound and biopsy, according to international guidelines. The main endpoint of the study was to determine the incidence of “de novo” and recurrent HCC. The second endpoint was to search for possible predictive factors associated with the occurrence of HCC. Statistical analysis performed on SPSSv.24.

**Results:** Total 106 cirrhotics (73.5% mean; 34.5± 5.8 years, M/F 72/34, 60% with portal hypertension (n=64) and 22% with decompenesed cirrhosis (n=23, 22 Child-Pugh B)). Two patients with previous HCC, stage Barcelona Clinic Liver Classification (BCLC) A, invasive for 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±4 months of FU, we registered 0 HCC; 4 “de novo” and 1 recurrence, which corresponded to an incidence of 3.8% of “de novo” HCC (13% in decompenesed cirrhosis). The BCLC staging was: 2 stage A, 2 stage B 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=0.005) 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).
Conclusion: In this cohort the “de novo” incidence of 3.8% of HCC after the treatment of cirrhosis mainly in patients with decompensated cirrhosis, not eligible for treatment with interferon in the past, and in a short interval of time after treatment. These results alert for an eventual need to increase the frequency of screening in the post-treatment period and carefully evaluate the best timing for liver transplant evaluation. We could not conclude about recurrence due to the small number of patients.

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

References


P0055 MiRNA-506 PROMOTES PRIMARY BILIARY CHOLANGITIS-LIKE FEATURES IN CHOLANGIOCYTES AND IMMUNE ACTIVATION


Aim: miRNA-506 is expressed in cholangiocytes and promotes immune activation, representing a potential therapeutic target for PBC patients.

MATERIAL AND METHODS: Aims & Methods: The technical success was 92.4%. Sampling was considered adequate in 92.2% of the cases. Pericupular route included: coagulopathy/anticoagulation (32.2%), thrombophlebitis (31.7%), tumors (9.5%), other (2.5%). Retrograde procedure was used in 79.8%. Sampling was considered adequate in 96.5% of patients. SWE results were reported using three methods: (A) one measurement, (B) the mean of two measurements, (C) three, respectively. Overall, 200 consecutive patients were included. Fibrosis was assessed from 1 to 4 (F1–F4).

RESULTS: In this study, we sought to estimate the most appropriate reporting method for SWE results in practice. Overall, 200 consecutive patients were included. The technical success was 92.4%. Sampling was considered adequate in 96.5% of patients. SWE results were reported using three methods: (A) one measurement, (B) the mean of two measurements, (C) three.

All authors have declared no conflicts of interest.

P0056 CLINICAL EXPERIENCE IN THE USE OF TRANSJUGULAR LIVER BIOPSY WITH TRU-CUT NEEDLE: A RETROSPECTIVE EVALUATION OF 265 CASES


Aim: To evaluate the technical success, diagnostic accuracy, and the impact of the transjugular liver biopsy (TJLB) in patients with chronic hepatitis C infection.

MATERIAL AND METHODS: Aims & Methods: The technical success was 92.4%. Sampling was considered adequate in 96.5% of patients. SWE results were reported using three methods: (A) one measurement, (B) the mean of two measurements, (C) three, respectively. Overall, 200 consecutive patients were included. Fibrosis was assessed from 1 to 4 (F1–F4).

RESULTS: In this study, we sought to estimate the most appropriate reporting method for SWE results in practice. Overall, 200 consecutive patients were included. The technical success was 92.4%. Sampling was considered adequate in 96.5% of patients. SWE results were reported using three methods: (A) one measurement, (B) the mean of two measurements, (C) three.

All authors have declared no conflicts of interest.

P0057 OPTIMAL NUMBER OF MEASUREMENTS IN REAL-TIME SHEAR WAVE ELASTOGRAPHY TO ASSESS LIVER FIBROSIS IN PATIENTS WITH CHRONIC HEPATITIS C VIRUS INFECTION

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Aim: Evaluation of liver stiffness with high diagnostic accuracy, allowing a change in strategy in a high percentage of cases.

MATERIAL AND METHODS: In this study, we sought to estimate the most appropriate reporting method for SWE results in practice. Overall, 200 consecutive patients with hepatitis C virus infection underwent liver biopsy between June 2015 and March 2017 were enrolled. Ten SWE measurements (GE Healthcare, USA) and liver biopsies were performed on the same day. Fibrosis was staged from 1 to 4 (F1–F4).
Area under the curve and receiver operator characteristic (AUROC) compari-
son showed the diagnostic accuracy of the eight methods in the interquar-
tile range (IQR) and median of 10 SWE measurements using body mass
index (BMI) and age were analysed using the Mann-Whitney U test.

Results: The study population consisted of 106 men and 94 women with a mean age of 60.7 ± 13.9 years and a mean BMI of 28.7 ± 5.6 kg/m². F0 was F0/F1/F2/F3/F4 in 70/30/35/32/24 patients, respectively. The median of the 10 SWE (m/s) of 10 measurements in patients with 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 found a significant difference (BMI ≥ 25: 0.24, < 25: 0.20, p = 0.04) and older patients (age ≥ 65: 0.22, < 65: 0.20, p = 0.012) indicated significantly greater IQR/median.

There was no significant difference in the diagnostic accuracy between using the median or mean of three, five, and 10 measurements. The AUROCs to diagnose patients with severe fibrosis (≥F2) ranged from 0.775 (A) to 0.903 (H), respectively. Comparing the AUROC of one measurement to the median or mean of three, five, and 10 measurements using body mass index (BMI) and age were analysed using the Mann-Whitney U test.

No difference was found between reporting mean or median SWE values in each cohort. However, the AUROCs of ten measurements were similar in each cohort.

Conclusion: No differences were found between reporting mean or median SWE values in each cohort. However, the AUROCs of ten measurements were similar in each cohort.

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

P0059 NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) EFFECT ON RESULTS OF SHEAR WAVE ELASTOGRAPHY FOR HEPATIC FIBROSIS STAGING

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

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

Results: Based on the obtained morphological results, we have formed the fol-
lowing subgroups of patients: F0: F1–31 people, F2: 15 patients, F3–45 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 preserved in the form of quantitative variables. Median stiffness with interquar-
tile range (25%-75%) in groups: F0: F1–3, 4 (8, 7, 2) kPa, F2–8, 8 (5, 3, 8, 9)

Kpa, F3–13, 3 (10, 14, 8) kPa and F4–22, 0 (12, 28, 5) kPa. The parameters of liver stiffness (PS) were also significantly greater in patients with F3 and F4 grade fibrosis.

Conclusion: The obtained results of shear wave elastography in patients with chronic liver disease, the absence of correlation with elastometry data.

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

P0060 FEASIBILITY AND REPRODUCIBILITY OF NON-INVASIVE LIVER AND PANCREATIC STIFFNESS ASSESSMENT IN A COHORT OF PATIENTS WITH ALCOHOL-RELATED LIVER DISEASE

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Introduction: The estimation of liver stiffness (LS) has recently been evaluated by new elastographic techniques, such as Shear Wave Elastography (SWE), with a potential role in the evaluation of patients with alcoholic liver disease (ALD) by using the elastographic methods. Moreover, exploring the possibility to assess the elasticity of other tissues, few studies evaluated the pancreatic stiffness (PS) by using transabdominal elastographic devices. (2,3), observing that chronic pancreatitis and alcoholic etiology had higher PS values (2).

Aims & Methods: The present study aimed at assessing the feasibility and repro-
ducibility of SHEW at measuring LS and PS in a cohort of patients with alcohol
abuse and known ALD by using the possible correlation between LS and PS with some of the clinical and laboratory data. Over a 6-months period 86 patients undergoing LS and PS measurement by SWE were consecutively enrolled. 66 healthy volunteers (HV) were also examined. SWE was blindly performed by two interventional radiologists, and liver and pancreatic stiffness were performed by a single operator. The comparison of stiffness values between patients and HV was performed. Interobserver agreement for SWE was assessed by intraclass correlation coefficient (ICC). The effect of clinical and imaging data was assessed using linear regression models, with LS or PS as dependent variables.

Results: LS and PS by SWE were obtained in all the patients and HV. No failure was observed. LS and PS were significantly higher in patients than in HV: 22.1 ± 9.5 kPa (95% CI, 16.9–36.2) vs 7.5 ± 4.4 kPa (95% CI 3.1–12.0) for LS and 15.4 ± 7.0 kPa (95% CI 9.9–22.0) vs 12.4 ± 4.0 kPa (95% CI 7.9–16.4) for PS, p < 0.001. ICC for LS was good: 0.96 (95% CI, 0.85–0.99). ICC for PS was fair to good: 0.70 (95% CI, 0.52–0.85).
0.21–0.57). At univariate analysis LS was associated with liver cirrhosis (p < 0.01), while in the multivariate analysis after adjustment for liver cirrhosis, active alcoholic consume (p = 0.015), alcohol consumption/day (p = 0.0134), diabetes (p = 0.0223). At multivariate analysis cirrhosis (p < 0.0001) and steatosis (p = 0.0073) were independently associated with LS. At both univariate and multivariate analysis, PS was significantly correlated only with liver cirrhosis (p = 0.0058).

Conclusion: The present is the first series assessing LS and PS in ALD patients by using SWE. The feasibility of the technique was excellent. The reproducibility was good for LS and fair for PS. SWE was a good predictor of liver fibrosis in the ALD cohort. Liver cirrhosis was the only independent variable correlating with PS, whose estimation could be useful to detect alcohol-related pancreatic damage in patients with severe ALD.

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

References

P0061 EXOSOMIC MIR-224 REGULATED TUMOR INVASION AND MIGRATION THROUGH IL-6/STAT3 PATHWAY IN HEPATOCELLULAR CARCINOMA

Aims & Methods: The expression of miR-224, IL-6, and STAT3 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, RNA modifications, coding and non-coding RNA. Thus, study the roles of exosomic miRNA could be usefull for therapy and prognosis prediction of hepatocellular carcinomas (HCC).

Results: It was found miR-224, IL-6 and STAT3 were up regulated in the tumor tissues of HCC patients but the SMAD4 showed the down regulated when compared with adjacent tumor tissues. The expression of miR-224 correlated growth, proliferation, migration and invasion capability of HCC cells in vitro. Moreover, the supernatant exosome from HCC cells was isolated and the translocation roles of exosome was studied by confocal. Finally, the expression of miR-224 and genes in STAT3/SMAD4 pathway in the exosome isolated from the supernatant of HCC cells induced by IL-6 were detected.

Conclusion: This study provides the novel mechanism of regulatory roles of miR-224 in HCC, and from the study, exosomic miR-224 showed as the novel target and predictor for HCC prevention and treatment in future clinic.

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

References

P0062 EXPRESSION ANALYSIS OF LIVER-SPECIFIC CIRCULATING MICRONAS IN HCV-INDUCED HEPATOCELLULAR CARCINOMA IN EGYPTIAN PATIENTS

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.

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-212 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 (AFP) and des-g-carboxyprothrombin (DCP) were measured using commercial kits.

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

References

P0063 EPIGENETIC INACTIVATION OF METALLOTHIONEIN IEG IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

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 IEG (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.

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-212 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 (AFP) and des-g-carboxyprothrombin (DCP) were measured using commercial kits.

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

References

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regulated in cancer tissues compared with the adjacent non-tumor tissues (P < 0.05). 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 inhibited 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, MMP3 and Vimentin. The in vivo growth of HCC cells in nude mice was also markedly inhibited after a 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 methylated 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, invasion, and induction of cell apoptosis.

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

P0064 THE FXR RECEPTOR PATHWAY IN HEPATOCELLULAR ADENOMA AND FOCAL NODULAR HYPERPLASIA, A PRELIMINARY EXPERIENCE

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Introduction: Hepatocellular adenoma (HCA) and focal nodular hyperplasia (FNH) may be confused on medical imaging. Both tumours are not connected even though expression is not different, or downstream targets might be influenced. This seemed to account for NTCP (bile salt importer), OATP1B1, OATP1B3, BSEP, CYP7A1, CYP8B1, BAAT, SLC27A5, CYP3A4, CYP2A1 were very strong differently downregulated in HCA, but not in FNH. BAAT was significantly downregulated in HCA. FGFR 4 was heavily downregulated in HCA, but not in FNH. CYP3A4 and CYP2A1 were very strongly downregulated in HCA, but not in FNH. BAAT was significantly downregulated in HCA. MT1G overexpression in HCA cells induced the cell apoptosis (P < 0.01).

Conclusion: Our results demonstrate that MT1G promoter methylated 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, invasion, and induction of cell apoptosis.

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

P0065 CUX1 CONTROLS ENDOPLOMATIC RETICULUM STRESS AND AUTOPOIETIC-RELATED CELL DEATH

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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 panobinostat, SAHA and trichostatin A. Thapsigargin, an endoplasmic reticulum stress inducer, served as positive control.

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 CONFERRES RESISTANCE TO APOTOTIC CELL DEATH IN LIVER CANCER CELLS

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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 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 death receptors). The cell death events were 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 Fipl 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. Fipl decreased in favor of Fipl5 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.
Table 1: Results: calibration curve.

- Calibration curves are constructed for each calibrator. The SCC concentrations of patient samples are read from the 405 nm after addition of Stop Solution.

Determination of squamous cell carcinoma antigen (SCC-Ag) Sera from selected patients and controls were used for estimation of SCC-Ag using CanAg SCC EIA. The CanAg SCC EIA is a solid phase, non-competitive immunoassay based on the direct sandwich technique. Calibrators and patient samples are incubated with the target protease.

Recently much attention has been focused on the role of SCCA in HCV cirrhotic patients suggesting that high levels of SCCA can assess HCC development. [5] The aim of this study was to assess the serum level of squamous cell carcinoma antigen (SCCA) in cirrhotic chronic HCV patients with and without hepatocellular carcinoma in relation to alfa feto protein (AFP).

Aims & Methods: The aim of this study was to assess the serum level of squamous cell carcinoma antigen (SCCA) in cirrhotic chronic HCV patients with and without hepatocellular carcinoma in relation to alfa feto protein (AFP).

Table 3: Correlation Between AFP and SCCA

<table>
<thead>
<tr>
<th>Variable</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCA</td>
<td>0.620*</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 ≤ 0.05

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 4: AUC for AFP, SCCA and SCCA + AFP

<table>
<thead>
<tr>
<th>Group</th>
<th>AUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC without intervention</td>
<td>0.930*</td>
</tr>
<tr>
<td>HCC with intervention</td>
<td>0.890*</td>
</tr>
<tr>
<td>HCC + SCCA</td>
<td>0.820*</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 HCV and after 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 Trevissi 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


**Introduction:** Hepatocellular carcinoma (HCC) is the first most common primary malignant tumor of the liver, the fifth common cancer and the third most common cause of cancer-related death worldwide. (1) Early detection of HCC provides the best chance for a curative treatment which in turn improves patients survival. However, more than 60% of HCCs are diagnosed at a late stage (2). This could be explained by poor compliance of cirrhotic patients to the surveillance programs and lack of a sensitive and specific tumor marker. Serum AFP – commonly used for HCC diagnosis has a low sensitivity, and specificity for HCC detection (3).

**Aims & Methods:** The aim of this study was to develop Hepatocellular Multidisciplinary clinic – Cairo University (HMC-CU) score and test its accuracy in HCC detection in comparison to the widely used AFP.

In the current study, we reviewed the data of 2363 Egyptian patients with HCV genotype-4 related chronic liver disease CLD; 1291 patients were diagnosed to have HCC while 1072 patients were diagnosed to have HCV related liver cirrhosis with no HCC on top. All the patients were recruited from the HCC multidisciplinary clinic, Cairo University Focal hepatic lesions detected by abdominal ultrasound (US) and/or rising AFP assays were further evaluated by tri-phase multiphase computed tomography (CT) or contrast-enhanced magnetic resonance imaging (MRI). Lesions showing enhancement in the arterial phase were diagnosed as HCC. Diagnosis of HCV related liver cirrhosis was based on clinical, laboratory and imaging evidence of chronic liver disease in addition to detection of HCV antibodies and HCV RNA by PCR technique. Each patient signed an Informed consent and the study was carried out according to the ethical guidelines of 1975 Helsinki Declaration.

**Results:** On bivariate analysis, the HCC patients were significantly older, anemic and showed significant thrombocytopenia, hyper- bilirubinemia, elevated serum AST and AFP serum levels. Serum albumin was significantly lower in HCC patients, consequently, we entered these significant variables in a multivariate regression model that demonstrated that only age, gender, hemoglobin, albumin, AFP and INR were independently associated with HCC development.

**Table:** Multivariate analysis for calculation of the HMC-CU score.

<table>
<thead>
<tr>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender G</td>
<td>Hb INR</td>
<td>1.147</td>
<td>1.180</td>
</tr>
<tr>
<td>Age</td>
<td>2.650</td>
<td>5.965</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>0.866</td>
<td>0.819</td>
<td>0.959</td>
<td>&lt;.003</td>
</tr>
<tr>
<td>0.998</td>
<td>0.267</td>
<td>0.931</td>
<td>&lt;.029</td>
</tr>
<tr>
<td>4.347</td>
<td>2.664</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>1.022</td>
<td>1.016</td>
<td>1.028</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>0.080</td>
<td>0.010</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The best overall formula that could best predict HCC was then constructed: HMC-CU Score = 0.74 x Age + 0.78 x Gender + 0.69 x INR – 1.095 x Alb + 0.022 x AFP + 0.976 x Gender. The diagnostic performance of HMC-CU was then assessed by ROC curve. The area under the ROC curve was 0.997. The cutoff point of 0.56 HMC-CU enabled the discrimination of HCC with 90% sensitivity, 80.6% specificity. AUC was 0.93 and the 95% confidence interval was 0.917–0.94. On comparing the diagnostic performance of HMC-CU to the performance of serum AFP for early diagnosis of HCC, it was found that serum AFP was able to diagnose HCC at cutoff value of 11.9 ng/ml 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 early diagnosis of HCC patients with HCV-related CLD. The advantage of our score is on 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 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 prospective validation study is being planned 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:**

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

**References:**
1. 1. Bruix J, Sherman M, Practice Guidelines Committee AAftSoLD.

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1. 1. Bruix J, Sherman M, Practice Guidelines Committee AAftSoLD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: Hepatocellular adenomas (HCA) are rare, benign tumors of pre- sumable epithelial origin, that occur predominantly, but not exclusively, in young women taking oral contraceptives (OC) or using OC medications. The Parisian adenoma tumor markers are a promising method of identifying the high-risk HCA. The Parisian adenoma tumor markers are a promising method of identifying the high-risk HCA of malignant transformation into hepatocellular carcinoma (HCC).

Aims & Methods: Aims: The authors propose to evaluate the demographics, etiology, clinical manifestations and prognosis of HCA. We undertook retrospective analysis of patients with HCA, histologically confirmed by (guided biopsy or surgical resection), between 2008 and 2016, in a tertiary referral centre. When feasible, the subtype classification of HCA proposed by the Parisian group, was performed. Descriptive statistics, univariate and multivariate analysis were performed using IBM SPSS Statistics 22, with p < 0.05 deemed to be statistically significant.

Results: In this study 27 patients were included, 2 men and 25 women, with a median age of 38 ± 11 years, followed for a mean time of 78 ± 36 weeks (lost follow-up in 7 cases). Three cases of hepatic adenomatosis were included. Forty-one percent of the women used OC and 38% of the patients had dyslipidemia. The mean size of the HCA was 70 ± 42 mm; 65% of the patients had abnormal liver tests at diagnosis, 46% were symptomatic and 21% the diagnosis was performed due to ruptured HCA. Surgical resection was performed in 88% of the cases; complete resection was achieved in 75% of the cases. Of the 19 patients who performed abdominal-CT scan or abdominal-MRI before histological confirmation, only 50% had an imagiological diagnosis of HCA. In 12 (44%) cases, immunohistochemical analysis was performed. According to the Bordeaux classification of HCA, 8 (67%) cases were classified as inflammatory, 2 (17%) as HNF-1α-mutated, 1 (8%) as β-catenin mutated and 1 (8%) as unclassified. During follow-up, a hemorrhagic shock related with HCA rupture and in 2 (10%) was necessary surgical revision due to incomplete resection. There were no HCC cases diagnosed during the follow-up. The median size of the HCA that weren’t completely resected and also of those presenting with HCA rupture was significantly higher: (110 vs 55 mm [p = 0.035] and 105 vs 47 mm [p = 0.037]), respectively. The 2 male patients had inflammatory HCA (p = 0.011).

Conclusion: In this cohort, HCA were prevalent in female taking OC and the inflammatory type HCA was the most common. In many cases, abdominal imaging is insufficient for a correct diagnosis, and biopsy specimen or surgical resection should be performed for a correct diagnosis. Lesion size was associated with the risk of rupture and incomplete surgical resection.

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

References

PO071 LASER ABLATION IS SUPERIOR TO TACE IN LARGE SIZE HEPATOCELLULAR CARCINOMA: A CASE-CONTROL STUDY

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Introduction: The standard treatment using transarterial chemo-embolisation (TACE) for patients showing solitary large (>40 mm) hepatocellular carcinoma (HCC) is unsatisfactory with high rate of recurrence. Data from literature suggest the alternative use of thermal ablation.

Aims & Methods: We aimed to evaluate the efficacy and safety of Laser Ablation (LA) in comparison to TACE in patients with large tumor size HCC. Between January 2009 and December 2012, 41 cirrhotic patients (29/12 M/F; median age 72 yrs; range 54-88; Child-Pugh A/B: 18/23) were treated with LA and 24 patients (19/5 M/F; median age 66 yrs, range 40-75) were enrolled in this study. The patients were treated with multifiber technique of LA. The control group consisting of 24 patients (19/5 M/F; mean age 72 yrs, range 49-86; Child-Pugh A/B: 34/1) were treated with TACE. Inclusion criteria were staged according to the BCLC staging system. 11 patients in LA group and 9 patients in TACE group showed a complete response after treatment (p < 0.001). The superior efficacy of LA was confirmed in all categories, also after the stratification of the size of nodule (≥40 mm, ≤50 mm, 40-50 mm, >50 mm). Disease recurrence, during a mean±SD period of follow-up of 37.4±20.7 months, was observed in 13 (24%) LA-treated patients (24%) and in 24 (58.5%) TACE-treated patients (p = 0.00315). Overall survival probability rate at 3 and 5 years was 90.2% and 55.4% in LA group and 85.4 and 48.8. in TACE group.

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

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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 alone was limited. 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 proportions of patients in whom immunohistochemical (IHC) stain was possible, and (2) compared diagnostic yield of FNB according to the needle size, and (3) safety of EUS-FNB.

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 H&E staining (n = 108) was 92.6%. Three (7%) were non-diagnostic (1 was malignant; 2 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 endoscopic hemostasis with endoclips.

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


P0073 COMPARISON OF METHODS TO ESTIMATE LIVER FUNCTION IN NEWLY-DIAGNOSED HEPATOCELLULAR CARCINOMA PATIENTS WITH ASCITES

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Introduction: Liver function is a key element in determining outcome of patients with hepatocellular carcinoma (HCC). For HCC with ascites, estimation of liver function is particularly important, as they already have decreased liver function.

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: 0.1-60.8 months), mortality was observed in 79 (17.9%) patients. MELD-Na showed highest time-dependent area under receiver-operating characteristics curves (AUROCs) 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. 37.3 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 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: 2.2 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, independently from the stage. Among these patients, MELD-Na showed better performance than MELD, Child-Pugh score and ALBI grade for predicting overall survival.

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

P0074 DIAGNOSTIC AND PROGNOSTIC ROLE OF SQUAMOUS CELL CARCINOMA ANTIGEN IN HEPATOCELULAR CARCINOMA: SEROLOGICAL AND TISSUE DETERMINATION

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Introduction: The ideal serological marker in hepatocellular carcinoma (HCC) has not been identified yet since AlphaFetoprotein (AFP) has unsatisfactory characteristics. Squamous Cell Carcinoma Antigen (SCCA) is expressed in tissue and serum samples of HCC patients and when determined immunocomplexed with IgM (SCCA-IgM) has satisfactory diagnostic and prognostic performance.

Aims & Methods: Aim of our study was to evaluate, in HCC patients, the diagnostic and prognostic role of SCCA determination in tissue and in serum samples. SCCA-IgM levels were determined in 409 sera obtained from 196 HCC patients and 213 cirrhotics. SCCA tissue expression was analyzed in a subgroup of 62 patients with biopsy available at diagnosis. Sensitivity, specificity, correlation with clinical and tumor parameters, treatment to response and survival were evaluated.

Results: HCC patients had SCCA-IgM levels significantly higher than cirrhotics (P < 0.0001). Sensitivity, specificity, positive and negative predictive values were 76%, 52%, 60% and 76%, respectively. In comparison, sensitivity and specificity of Alpha-Fetoprotein (AFP), SCCA, SCCA-IgM and SCCA-IgM were 52%, 76%, 99%, and 76%, respectively. In cirrhotics, SCCA-IgM levels were significantly higher than those in HCC patients (p = 0.036 and p = 0.001, respectively). A drop in SCCA-IgM levels after TACE correlated with mRECIST response to treatment. Child-Pugh status was the only independent predictor of survival at Cox multivariate analysis. A better survival trend in HCC with low serum tissue expression was documented (31 vs 24 months, p = ns). No correlation was found between tissue and serum results.

Conclusion: In HCC patients, right before the diagnostic evaluation, SCCA-IgM levels were directly correlated with tumor size and BCLC stage in females and with etiology in males. Conclusion: SCCA-IgM is a sensitive marker of HCC but lacks in specificity. As SCCA-IgM levels were statistically identified as independent predictors of survival, SCCA-IgM levels were directly correlated with tumor size and BCLC stage in females and with etiology in males.

Disclosure: All authors have declared no conflicts of interest.

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


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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 Epatoalcinoma 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 according to BCLC algorithm, while 29.4% underwent different treatments. 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 >2 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 B-C, and to the presence of neoplastic thrombosis and metastases. The mean overall survival in patients treated according to BCLC indications was 35.5months, while in patients managed differently was 31.9 months (p < 0.0001).

Conclusion: Adherence to BCLC algorithm in field-practice was high in early and 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

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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, et al. 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...
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 includes 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 relation field (9.64 ± 2.497), environment field (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 depression score of liver cirrhosis group (47.86 ± 11.917) was significantly higher than 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>
<thead>
<tr>
<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 ± 7.406</td>
</tr>
<tr>
<td>Male(n)</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Female(n)</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>WHOQOL-BREF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physiological domain</td>
<td>22.23 ± 3.312</td>
<td>22.96 ± 3.275</td>
</tr>
<tr>
<td>psychological domain</td>
<td>19.59 ± 3.925</td>
<td>19.87 ± 3.152</td>
</tr>
<tr>
<td>social relationship domain</td>
<td>9.64 ± 2.497</td>
<td>10.58 ± 2.061</td>
</tr>
<tr>
<td>environment domain</td>
<td>26.23 ± 7.534</td>
<td>28.36 ± 5.091</td>
</tr>
<tr>
<td>Self-rating Depression Scale(SDS)</td>
<td>47.86 ± 10.782</td>
<td>42.61 ± 11.564</td>
</tr>
<tr>
<td>Self-rating Anxiety Scale(SAS)</td>
<td>38.46 ± 11.917</td>
<td>37.00 ± 12.521</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**


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

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**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 nutritions, as additional risk factors for the development of non-alcoholic fatty liver disease. While eating disorders are a modifiable risk factor.

**Aims & Methods:** We aimed to study the dynamics of metabolic parameters in patients with non-alcoholic fatty liver disease (NAFLD) as a result of individual correction of eating behavior (EB).

52 patients (22 men and 30 women) with NAFLD and visceral obesity were examined. All patients studied EB (questionnaire DEBO), physical activity (PHa), were determined: waist circumference (WC), lipid and carbohydrate metabolism studies were performed, a visceral obesity index (VOI) was calculated, the body composition was monitored (determination of visceral adipose tissue (VAT)) and computed tomography of the abdominal cavity (CT AC) with measurement of the area (S, cm2) of VAT and panniculbutton tissue (PAT). Patients were divided into two groups. The control group (n = 40) and experimental group (n = 52) were selected. The patients’ body mass index (BMI) was not different in the two groups, but the depression score was higher in the experimental group (P < 0.05) decrease in VAT/PAT (VAT/PAT = 0.05) was noted to adhere to the recommendations. The percentage of patients improved (p < 0.05) decrease in VAT/PAT (VAT/PAT = 0.05) was noted to adhere to the recommendations. The percentage of patients improved (p < 0.05) decrease in VAT/PAT (VAT/PAT = 0.05) was noted to adhere to the recommendations.

**Conclusion:** Thus, the appointment of an individual correction of eating behavior can increase the adherence of patients to treatment and achieve a reliable positive dynamics of metabolic indicators.

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

**References**

Introduction: Non-alcoholic fatty liver disease (NAFLD) is liver disease with histological signs of accumulation of cholest erin 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 stages, potentially reversible stages of development is relevant. The purpose of the work was frequency estimation of the prevalence steatosis according to elastometry with controlled attenuation parameter (CAP®) among young people and associated with them specific body composition.

Aims & Methods: 90 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 body composition and steatosis and the stage of liver fibrosis 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 dB/m was used for the severity of steatosis. Moreover, there was the biological 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 founded in 12 (20.3%) people. The signs of liver fibrosis were detected in 7 (11.9%) people (E≥5, 5 kPa). 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%); wherein fat body composition above normal values in 19 (33, 4%). Results of binary regression analysis showed that the chance of development of hepatic steatosis in case of excess body weight increase 215 dB/m). The signs of liver fibrosis were detected in 11 patients (19.3%) and unknown CBD stenosis in 31 patients (8.8%).

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 healthy young people was reliably 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.
Conclusion: In this systematic review with meta-analysis, alcohol consumption has a dose-dependent negative co-relation with the risk of gallstone disease development.

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

References

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 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: A total 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, 84.7% (188/215) underwent successful duct clearance at index or subsequent ERCP. Of these, 47.3% (89/188) underwent CCX (n = 2/188) patients are currently awaiting CCX and 51.6% (97/188) did not undergo CCX. The outcomes in remaining 13.4% (n = 27) patients 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 0–287 days). In this group, 11 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 = 97)</th>
<th>Non-CCX group (n = 90)</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.

Conclusions: 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 institute 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
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 (MedCoat-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 (tecofellic, tecothane, Tecoflex and pellethane). The gemcitabine was used as antitumor drug, and coated to membrane by mixed form with polyurethane (gemcitabine, 250ug/ml; polyurethane, 500ug/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 100 ug/cm², and the amount was constant in all tested area (Standard deviation, 5 ug/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 ug, 836 ug in tecofellic coating, tecothane coating, tecoflex coating, and pellethane coating. The total of released drug amount depended on polyurethane was described in table 1.

<table>
<thead>
<tr>
<th>Coating Polymer</th>
<th>24 hrs</th>
<th>48 hrs</th>
<th>72 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tecoflex</td>
<td>919</td>
<td>927</td>
<td>933</td>
</tr>
<tr>
<td>Tecothane</td>
<td>859</td>
<td>868</td>
<td></td>
</tr>
<tr>
<td>Tecoflex</td>
<td>681</td>
<td>690</td>
<td>698</td>
</tr>
<tr>
<td>Pellethane</td>
<td>580</td>
<td>604</td>
<td>622</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.

Table 1: The total of releasing drug amount in 72 hours

<table>
<thead>
<tr>
<th>Drug release amount</th>
<th>Gemicitabine (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating Polymer</td>
<td>24 hrs</td>
</tr>
<tr>
<td>Tecoflex</td>
<td>919</td>
</tr>
<tr>
<td>Tecothane</td>
<td>859</td>
</tr>
<tr>
<td>Tecoflex</td>
<td>681</td>
</tr>
<tr>
<td>Pellethane</td>
<td>580</td>
</tr>
</tbody>
</table>

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

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Introduction: Liquid-based sample preparations for cytology have improved the cellular yield in pancreatobiliary (PB) malignancy. The SurePath (SP) methodology produces a pellet of concentrated cellular material which enables additional slides for immunohistochemical (IHC) staining for tumour markers Ki67, p53 and C3DX2. The presence of the mitosis-related marker, Ki67, in high concentration in PB tumours 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 immediately into a SurePath vial and shaken vigorously to fix and suspend the cells. In the cytopathology laboratory, the vial (with brush included) was agitated on a platform 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 malignant 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 structures. Advantages include ease of collection, 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 cholangiopancreatography (ERCP). Gastroenterology, Vol 150, Issue 4, S516, 2016

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

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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 antitumor 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, 100ug/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.

Results: Tumor volumes on day 22 of membrane treatment were decreased in all drugs, that were significantly different compared to those of control (paclitaxel, gemcitabine, and mitomycin C, 119.02 mm³, P value ¼ 0.0001; mitomycin C, 119.02 mm³, P value ¼ 0.4116; gemcitabine, 63.38mm³, P value ¼ 0.0001). 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.

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.

Table 1: The total of releasing gemcitabine amount in 72 hours

<table>
<thead>
<tr>
<th>Membrane only</th>
<th>Paclitaxel</th>
<th>Gemicitabine</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 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.

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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

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Introduction: Palliative biliary drainage was used to improving obstructive jaundice, 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 stents were different which are different in cost on survival rate, nutritional status and efficacy of biliary drainage in DMBST 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 to 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 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
P0088 PROGNOSTIC VALUE OF EARLY CA19-9 RESPONSE DURING CHEMOTHERAPY IN PATIENTS WITH ADVANCED OR RECURRENT BILIARY TRACT CANCER

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 bile duct, 43 (23%) in extrahepatic bile duct, 64 (35%) in gallbladder and 10 (5%) in ampulla. As for chemotherapeutic regimen, single-agent or combination therapy was given in 49 (26%) or 136 (74%), 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 CA 19-9 levels at baseline and after two cycles were 264 IU/mL and 112 (60%), giving response rate of 16% and disease control rate of 76%. The time to treatment failure (TTF) and OS were analyzed for CA19-9 response, and a higher rate of TTF and OS were observed in the decrease group compared to the increase group (p < 0.001). The median OS was 15.2 months in the decrease group and 10.6 months in the increase group (p = 0.01).

Conclusion: CA19-9 response after two cycles of chemotherapy is an independent predictor of 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


Cost of total procedure (bath) 28,917 (10,018) 55,471 (14,398) 69,262 (12,135)

P0089 BILIARY DRAINAGE IN PATIENTS WITH UNRESECTABLE PERIHILAR CHOLANGIOCARCINOMA: A VERY HIGH COMPLICATION AND FAILURE RATE

P0089 PROGNOSTIC VALUE OF EARLY CA19-9 RESPONSE DURING CHEMOTHERAPY IN PATIENTS WITH ADVANCED OR RECURRENT BILIARY TRACT CANCER

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.

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Conclusion: CA19-9 response after two cycles of chemotherapy is an independent predictor of 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


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 (61.3%) 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 from 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 PSC 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.

P0091 BRUSH CYTOLOGY GUIDED BY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY OF BILIARY STRICTURES


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Introduction: Endoscopic retrograde cholangiopancreatography (ERC) guided brush cytology has become the most widely used method, although with limitations, in the initial diagnostic evaluation of patients with biliary strictures. Aims & Methods: The objective of the study was to evaluate if the systematic use of 10 brush passes improves the diagnostic yield of brush cytology guided by ERCP of bile strictures. ERCPs between 2012 and 2015 involving brush cytology of bile strictures for suspected malignancy were included in the study. Cytologies were obtained using the Brush Master V (Olympus Medical System). Histological evaluation was performed by two experienced cytopathologists.

Results: In total, 62 patients underwent cytology of biliary strictures, with a median age of 69 years (IQ: 55-81). The cytological analysis was compatible with adenocarcinoma in 30.6% of the cases, low grade dysplasia in 3.2%, high grade dysplasia in 1.6% and adenoma in 1.6%. In 26 patients the cytology was negative (41.9%) and in 13 cases it was considered inconclusive (21%). Fifteen patients were subsequently submitted to surgery (24.2%). In 34 cases (54.8%) there was a correlation between the cytology and the final diagnosis. In the univariate analysis, previous history of cholecystectomy (73.7% vs. 26.3%, p = 0.047), cytology suggestive of malignancy/adenocarcinoma (89.5% vs. 10.5%, p < 0.001) and final non-equivocal diagnosis (14.3% vs. 85.7%, p = 0.002) were associated with positive correlation. If the cytology and final diagnosis are coded as "malignant," "benign," or "inconclusive," the correlation increases to 67.7%. In this situation, the univariate analysis showed that the presence of malignancy in cytology (87.5% vs. 10.5%, p = 0.009) and final non-equivocal diagnosis (35.7% vs. 64.3%, p = 0.012) were associated with a positive correlation. If the cases identified as undetermined cytology were excluded, there was no increase in correlation with the final diagnosis (56.5%).

Conclusion: The systematic use of 10 passes in the cytology of the biliary tract modestly increases the accuracy of the detection of malignant versus benign situations.

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

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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, clinical feasibility and safety are sometimes complicated. Aims & Methods: The aim of this study was to evaluate differences in technical feasibility and clinical efficacy between unilateral and bilateral stent-in-stent (SIS) placement of metal stents for MHBO. 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 unilateral SEMS. In the Bi group, we placed cross-wired metal stents with the SIS 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 SIS 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

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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 plastic stent (BBS), which can treat biliary obstruction without the need to undergo a repeat endoscopic procedure to remove the stents. 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.
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 procedures, 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 necessary for inserting single biodegradable stent, 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 m mol/L prior to stenting to 26.2 μmol/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, track-ability over guide-wire, and pushability with push catheter. There was minimal force required to implant it and it has good visibility by fluorescence. 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 stenosis.

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 ACTIVATION OF LIVER AND PANCREATIC STELLATE CELLS
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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 mechanisms.

Aims & Methods: This study aimed to clarify the involvement of Toll-like receptor 5 (TLR5) in the activation of human stellate cells. LX2 liver stellate cells and HPSC (human pancreatic stellate cells) were treated for 48 hours with 2.5 ng/ml TGF-beta 1 and TLR5 deficient PDEC 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 TLR5-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⁺) levels decreased ΔΨm and induced cytotoxic α release in CFPAC 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.

Disclose of Interest: All authors have declared no conflicts of interest.
changes in more detail and genome wide expression profiling helped us to under-
stand the role of Eppin 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 human
pancreas upon orthotopic transplantation and allow disease modelling.
Hohwieler M, Illing A, Herrmann PC, Mayer T, Stockmann M, Perkhofer L,
Eiseler T, Antony JS, Müller M, Renz S, Kuo CC, Lin Q, Sendler M, Breunig M,
Kleiderman SM, Schell A, Zenker M, Leichsenring M, Rosendahl J, Zenke M,
Sainz B Jr, Malyer E, Costa IG, Seufferlein T, Kornmann M, Wagner M, Liebau

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

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Introduction: N-acetyl-N2-formyl-5-methoxykynuramine (AFMK), melatonin
metabolite, was demonstrated recently as a potent pancreatic secretagogue for
against acute inflammation. AFMK significantly attenuated acute pancreatitis;
however, 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 pancreatic-biliary juice were collected to measure the amylase outputs. The blood samples were taken for determination of CCK by ELISA kit. For in vitro study acinar cells AR42J 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 outputs both; unstimulated, as well as that induced by DPBJ. The rises of pancreatic amylase outputs were accompanied by significant increase of CCK plasma levels. Administration of lorglumide, a CCK1 receptor blocker, comple-
tely abolished the stimulation of pancreatic exocrine function induced by
AFMK. This melatonin metabolite failed to affects protein signal for CCK recep-
tor in AR42J cells.

Conclusion: The stimulatory effect of AFMK on pancreatic enzyme secretion in
the rats is indirect and dependent on the release of CCK by this melatonin
metabolite.

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

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

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Introduction: Pancreatic ductal fluid and HCO3- secretion are crucially impor-
tant in the physiology and pathophysiology of the exocrine pancreas. However,
the role 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 medium. 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 NH4Cl in standard HEPES or
CO2/HCO3- buffered solution resulted in rapid intracellular alkalization,
highly dependent on the Na+/H+ exchange. Removal of NH4Cl induced rapid
carbonic acidification followed by regeneration to the resting pH levels. The regeneration
phase was inhibited by the removal of extracellular Na+. The administration of
10 mM CFTRinh172, 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 H2DIDS decreased the intracel-
ular pH suggesting the activity of Na+/H+ exchanger and Na+/HCO3- cotran-
sporter 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 ORAI1 MEDIATED CA2+ ENTRY
IN MOUSE PANCREATIC DUCTAL CELLS

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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 Ca2+ 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 Ca2+ 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 Ca2+ 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 Ca2+ influx during
the carbachol induced Ca2+ signal in PDC. Inhibition was complete at a con-
centration of 10 μM (CM-B: 99.87%, CM-C: 95.29%). Next, endoplasmic reti-
culum Ca2+ stores were depleted with cyclopiazonic acid and the inhibition of
store-operated Ca2+ entry (SOCE) was investigated after the re-addition of
extracellular Ca2+. Under these conditions CM-B and CM-C significantly, but not
different, completely decreased SOCE in PDC (55.96% and 55.03% respectively).
The removal of extracellular Na+ to abolish activity of the Na+/Ca2+ 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 HCO3- by
PDC, which is the main physiological function of these cells.

Conclusion: We showed that Orai1 has a significant role in the Ca2+ signaling of
PDC. In the next step we will evaluate the pathophysiologic 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

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Acute pancreatitis (AP) is among the most difficult diseases faced by gastroenterologists and surgeons. In some cases it is difficult to understand etiology of AP. Hereditary pancreatitis (HP) is an autosomal dominant genetic disorder characterized by recurrent attacks of acute pancreatitis.

**Aims & Methods:** We analyzed medical records of patients who were diagnosed with juvenile pancreatitis and pancreatitis of unknown etiology (PUE) 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 24–75. 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 mutations. 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 pancreatic and bile duct stenosis and one patient, female, age 28, CFFTR heterozygous mutation) a pancreatic tumor (mucinous cystadenoma with high dysplasia that was successfully surgically treated with R0 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 PUE. In patients in whom pancreatitis remains unexplained after including of the most often etiologies and presence of genetic alteration, hereditary pancreatitis seems as reasonable explanation even in patients with mutations other than PRSS1. Routine follow-up of patients with regular testing on pancreatic exocrine insufficiency and diabetes mellitus and pancreatic cancer surveillance is necessary.

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

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

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**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 because 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 which associated with mortality in previous study.

**Results:** The mortality was 12.7% (142/1114 patients). All ten factors were associated with mortality in univariable 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 acute intravenous fluid volume expansion)" and "lactate dehydrogenase ≥2 times upper limit of the normal range" were associated with mortality. The other factors, namely "base excess ≤-3.5 meQ/L", "platelet count ≤100,000/mm³", "serum calcium ≤3.5 mg/dL", "c-reactive protein ≥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. In patients with these factors require transport to a hospital with intensive care unit.

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

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**References**


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

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**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 and pain during cholecystectomy requiring ERC (23.3% vs. 10.7%, P=0.30). There was no difference in pain measure between the groups at randomization and follow-up.

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

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

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**P0105 COMPARISON OF PREDICTIVE SYSTEMS TO PREDICT MORTALITY IN SEVERE AND MILD ACUTE PANCREATITIS: ACCORDING TO THE REVISED ATLANTA CLASSIFICATION**


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**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 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 (BISP, SIRS, APACHE II and HAPs) and the following predictors: C reactive protein (CRP) at 24 h, hemocrit or BUN at admission.
and their evolution after 24 h were evaluated. Accuracy was measured using discriminative operating characteristic (ROC) 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 (32.8%), hypertension (36.6%) 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 8.7% and pseudocyst in 16.1%. There were 42 (6.6%) severe and 196 (28%) moderately severe cases. Overall mortality was 2.4% (1.5–3.9%), 35.7% (23–50.8%) among severe cases. BUN at admission AUC: 0.88 [0.85–0.90], BISAP score (AUC: 0.88 [0.85–0.90]) and APACHE II (AUC: 0.87 [0.83–0.90]) were the two other most powerful predictors of mortality. 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 [0.86–0.91]) and the BISAP score (AUC: 0.87 [0.84–0.89]) also presented the best predictive power with a Youden index of 0.91. The BISAP score identified the highest risk of death with a sensitivity of 94.2% (92.2–95.8%), although with a low PPV, 32.1% (21.4–45.2%). On the other hand, diagnostic accuracy for mild AP was poor, as all predictors presented an AUC < 0.7. The HAPS score reached the highest specificity, 87.8% (83.9–91.4%), but presented a very poor sensitivity (28.9% [24.3–33.9%]).

Conclusion: 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.

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

References:

P0106 PANCREATIC DUCT ASCARIASIS

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Introduction: Although uncommon in the West, Ascaris lumbricoides is a common cause of acute pancreatitis in developing countries. The mechanism of acute pancreatitis in ascariasis may be due to obstruction of papilla of Vater, invasion of common bile duct (CBD), or pancreatic duct (PD) leading to ductal obstruction. Our aim is to review pancreatic ascariasis.

Methods: A retrospective study of last 10 years of 15 cases of pancreatic ascariasis. The probable reasons are excellent imaging of pancreas by EUS, which can aid in early diagnosis due to its high sensitivity and specificity.

Results: We present our retrospective data of last 10 years of 15 cases of pancreatic ascariasis.

Conclusion: EUS should be used early in the work-up of IAP after the first episode. We consider EUS a standard for diagnosis of biliary ascariasis, should be reserved for therapeutic rather than diagnostic use as papillotomy can lead to reentry of the worm into the common bile duct. EUS should be used early in the work-up of IAP after the first episode. We present our retrospective data of last 10 years of 15 cases of pancreatic ascariasis. 2 patients were managed conservatively with repeat USG showing slow resolution of symptoms.

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

References:

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United European Gastroenterology Journal 5(5S)

P0107 LARGE-VOLUME FLUID RESUSCITATION IN PATIENTS WITH SEVERE ACUTE Pancreatitis IS ASSOCIATED WITH REDUCED MORTALITY: A MULTI-CENTRE RETROSPECTIVE STUDY

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Introduction: The severity of acute pancreatitis varies widely, from a mild self-limited disease to one with a severe clinical course complicated by multiple organ dysfunction syndrome. 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 important. Fluid resuscitation maintains adequate intravascular volume by compensating for fluid shifts to the third space. However, there is 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 resuscitation.

Aims & Methods: The aim of this study is to evaluate the association between the type and volume of fluid administration and the occurrence of severe acute pancreatitis. We conducted a secondary analysis of data from a multi-centre retrospective study of patients with severe acute pancreatitis in Japan, which was registered with the University Hospital Medical Information Network Clinical Trials Registry (Registry number 00012220) and approved by the Institutional Review Board or the Medical Ethics Committee at each institution. The diagnosis of severe acute pancreatitis was based on criteria of the Japanese Ministry of Health, Labour and Welfare (Japanese Severity Score). Patients were stratified into two groups according to whether they received >6000 ml or ≤6000 ml in the first 24 hours. We evaluated the association between the two groups and clinical outcomes using multivariable logistic regression analysis. The primary outcome was in-hospital mortality. As a sensitivity analysis, we conducted an identical analysis for subgroup patients with severe acute pancreatitis diagnosed according to the revised Atlanta classification.

Results: We analysed 1097 patients, and the mean fluid volume administered was 5619±3018 ml (mean±standard deviation), with 708 and 389 patients stratified into the fluid >6000 ml and fluid ≤6000 ml groups, respectively. Overall in-hospital mortality was 12.3%. The fluid ≥6000 ml group had significantly higher mortality than the fluid <6000 ml group (15.9% vs. 10.3%, p<0.05). However, 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 hundred and seven 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 regard to in-hospital mortality (fluid <6000 ml: 35.3% vs. fluid ≥6000 ml: 28.4%, p=0.18). In multivariable logistic regression analysis, administration of fluid ≥6000 ml within the first 24 hours was associated with significantly less mortality (OR 0.56, 95%CI 0.32–0.98).

Conclusion: In patients with severe acute pancreatitis, administration of fluid ≥6000 ml within the first 24 hours is associated with decreased mortality.

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. (AP: acute pancreatitis, AUC: Area under the curve, PPV: positive predictive value, NPV: Negative predictive value).

<table>
<thead>
<tr>
<th>SAP</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</td>
<td>≥3</td>
<td>0.9 (0.83–0.97)</td>
<td>70.6% (46.9–86.7%)</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>
</tr>
<tr>
<td>RANSON</td>
<td>≥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>
</tr>
</tbody>
</table>

Table 1b: AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Mortality. (AP: acute pancreatitis, 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</td>
<td>≥3</td>
<td>0.97 (0.9–0.99)</td>
<td>100% (67.6%–100%)</td>
<td>92% (88%–94.7%)</td>
<td>27.6% (14.7%–45.7%)</td>
<td>100% (98.4%–100%)</td>
</tr>
<tr>
<td>RANSON</td>
<td>≥4</td>
<td>0.94 (0.89–0.99)</td>
<td>100% (67.6–100%)</td>
<td>77% (71.5–81.7%)</td>
<td>11.8% (6.1–21.5%)</td>
<td>100% (98.1%–100%)</td>
</tr>
</tbody>
</table>

References
**Table 1a.** AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Severe Acute Pancreatitis (SAP).

<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>Lactate</td>
<td>0.79 (0.71–0.88)</td>
<td>88.8% (36%-78.4%)</td>
<td>83.3% (73.8%-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% (14.6%-39.4%)</td>
<td>97.3% (94.3%-98.8%)</td>
</tr>
<tr>
<td>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.

<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>Lactate</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>Creatinine</td>
<td>0.85 (0.70–0.99)</td>
<td>75% (40.9%-92.9%)</td>
<td>84.7% (79.8%-88.5%)</td>
<td>13% (6.1%-25.7%)</td>
<td>99.1% (96.8%-99.8%)</td>
</tr>
<tr>
<td>BUN</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</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% (2.5%-12.6%)</td>
<td>98.5% (95.2%-99.4%)</td>
</tr>
</tbody>
</table>

**References**

Severities of PEP according to Cotton and Atlanta

<table>
<thead>
<tr>
<th>Severity</th>
<th>Cotton</th>
<th>Atlanta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild-moderate</td>
<td>37 (62%)</td>
<td>2 (50%)</td>
</tr>
<tr>
<td>Severe</td>
<td>23 (38%)</td>
<td>2 (50%)</td>
</tr>
<tr>
<td>Total</td>
<td>60 (94%)</td>
<td>4 (6%)</td>
</tr>
</tbody>
</table>

All 3 patients that died had severe PEP according to Atlanta due to persistent organ failure. Cotton classified them as mild, moderate and severe based on hospitalization. Two patients died within 10 days of early multiple organ failure. No other Cotton criterion for severity was met. Thus, the Cotton criteria did not capture early deaths due to multiple organ failure. The sensitivity and specificity of Cotton and Atlanta for mortality were 100%, 98.4%, 33.6% and 60.7% respectively.

Conclusion: The Cotton criteria for PEP overestimate disease severity, but underestimate mortality. Therefore, the Atlanta criteria should be used for defining PEP severity.

Disclosure of Interest: All authors have declared no conflicts of interest.
according to the revised Atlanta classification. Univariate and multivariate analysis were performed.

**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 with increased fluid sequestration (Table). Body mass index, APACHE II score, and those with necrosis, and 7.5 l (4.4–12) L in those with persistent organ failure. Among reported prophylactic procedures for PEP, placement of prophylactic pancreatic guidewire during ERCP can be a good candidate for prophylactic pancreatic stent to prevent post-ERCP pancreatitis: a matched propensity analysis. Aim was to investigate clinical features, risk of other organ involvement, risk of relapse and long-term outcomes of AIP type NOS patients. Patients classified by International Consensus Diagnostic Criteria (ICDC) as AIP type 1 and 2, (3, 4) no studies have been focused on AIP type NOS and therefore very little is known about clinical features and long-term outcomes of these patients. Aims & Methods: Aim was to investigate clinical features, risk of other organ involvement, risk of relapse and long-term outcomes of AIP type NOS patients. Patients classified by International Consensus Diagnostic Criteria (ICDC) as AIP type 1 and 2, (3, 4) no studies have been focused on AIP type NOS and therefore very little is known about clinical features and long-term outcomes of these patients.
P0117 698 CASES OF PANCREATIC DISEASES TREATED BY EPDBD (ENDOSCOPIC PANCREATIC DUCT BALLOON DILATION) – ITS USEFULNESS AND SAFETY

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Introduction: We started our original EPDBD (endoscopic pancreatic duct balloon dilation) therapy for pancreatic diseases in 1996. In these 22 years, 698 cases were treated by this method. We would like to show its usefulness and safety.

Aims & Methods: The balloon (6 mm diameter, 15 mm long -Boston Scientific) was inflated in the stenotic portion of the pancreas duct at 6 atm. pressure for 1 minute several times. Then stone removal or EPS (endoscopic pancreatic stent- ing) was evaluated: Head duct stone: rate and stone relapse rate in 568 pancreatic stone cases treated by EPDBD 2. The proffs of 114 EPS-successful pseudocyst cases treated by EPDBD 3. The prob of 16 EPS-successful divisum cases (complete type 6, incomplete type 10) treated by EPDBD 4. The purpose of making a diagnosis of ampullary/papillary stones and biliary obstruction which can be treated endoscopically.

Results: The purpose of EPDBD therapy for pancreatic stone was to ease endoscopic procedures in the pancreatic duct and stone removal, and to reduce stone relapse rates. 508 cases of pancreatic stone were treated by EPDBD. They consisted of 90 cases treated by endoscopic method alone, 90 cases treated by endoscopic method and stone extraction (via major papilla 38), and 478 cases treated by ESWL+ endoscopic method (via major papilla 381, minor papilla 97). 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 ESWL, 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, the stone was easily removed. This is only one case and we think it is a success. 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. Case B; 29 y/o female. alcoholic chronic pancreatitis, pancreatic stone: ERP via minor papilla revealed the duct rupture in the body portion and contrast medium flowed out into thoracic and abdominal cavity. After dilation of the stenotic duct in the body, EPS placement was done and she recovered quickly.

Conclusion: By EPDBD therapy, the relase rate of pancreatic stone decreased, and the success rate of endoscopic drainage and stenting in pseudocyst and divisum cases increased with minor 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.

P0118 ENDOSCOPIC ULTRASOUND AS A PREDICTOR AND GUIDE TO SUCCESSFUL ENDOTHERAPY IN CHRONIC PANCREATITIS

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Introduction: Pancreatic calculi (PC) are a sequela of chronic pancreatitis (CP) and occur due to chronic ductal hypertension leading to pain, cystic/nodular feature of CP. The rationale for endoscopic treatment of obstructing PC is based on the observation that pain subsides when the stone(s) is removed and drainage of pancreatic secretion is restored. Indications for endotherapy include stones >5 mm size, stones in head of pancreas which are not impacted and absence of downstream strictures. The assessment prior to the procedure is done by MRCP or CT. However, problems are encountered during ERCP clearance which are not anticipated despite MRCP/CT. The problems are, possible impacted stones, head duct stricture, and change in ductal configuration during ERCP. Hence, controversy exists. EUS can help by providing concordance or discordance with MRCP images and may help in further clarification.

Aims & Methods: We aimed to evaluate the role, feasibility and management challenges of EUS-guided ERCP in patients planned for endotherapy in CP. Another objective was to evaluate whether EUS features of pancreatic duct (PD) stones can serve as a predictor of successful removal during ERCP. The data of 412 patients during the study period (2009-2016) with CP was retrospectively analyzed. PD stones were associated with stones in head/papillary region of pancreas. Out of these, 75 were excluded and remaining 68 were evaluated by EUS using a linear/radial echo endoscope prior to ERCP.

Results: Out of 68 cases, 48 were associated with hard stones with acoustic shadowing and 20 were associated with soft stones without acoustic shadowing. In 20 soft stones cases, ERP was successful in 18 patients. In 48 patients with hard stones, there was failure of endotherapy in 40 patients which required ESWL/surgery. The remaining 8 patients required multiple sessions of ERP for successful removal. Three patients had ampullary/papillary stones which were removed with precut sphincterotomy with immediate relief of pain. Four patients had ventral duct obstruction by calculi and hence underwent ERCP through minor papilla with successful removal of stones in 3 patients. In three patients, there were calculus in pancreatic parenchyma and pancreatic duct simultaneously (ducto-parenchymal stones) and hence endotherapy was avoided. Three patients had pancreas divisum diagnosed on EUS and hence underwent minor papillotomy with stone removal. Three patients also had biliary obstruction with CBD stone/slugde and underwent biliary endotherapy. Four patients had pancreatic mass in head and underwent EUS-FNA with two patients diagnosed with pancreatic cancer who were referred for surgery. The remaining two were also referred for surgery. Four patients were found to have strictures on EUS and hence were referred for surgery. The presence of large (>5 mm), hard, incompressible stones were negative predictors of successful endotherapy. Small (<5 mm), ampullary/papillary stones were positive predictors.

Conclusion: Present study suggests that EUS can differentiate "soft PD stones" (without an acoustic shadow) from "hard PD stones"(with an acoustic shadow). A more accurate predicting success rate of endotherapy and hence improves overall prognosis. Hence, EUS is an important tool in the management of pancreatic stones.

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

Reference
Mera K, et al Serum levels of apoptosis inhibitor of macrophage for differentiating IgG4-related disease from malignant disease.

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Introduction: IgG4-related disease (IgG4-RD) is characterized by the infiltration of inflammatory cells, such as plasma cells and macrophages, and fibrosis in tissues. We previously reported that apoptosis inhibitor of macrophage (AIM), which is secreted by macrophages, is related to the progression of hepatic fibrosis in chronic hepatitis C. Some studies have observed a relationship between IgG4-RD and malignancy. IgG4-RD is considered to represent a premalignant state or paraneoplastic condition.

Aims & Methods: To clarify the significance of the serum AIM levels in patients with IgG4-RD, we measured these levels in 22 healthy controls, 32 patients with IgG4-RD, and 36 patients with other pancreatic diseases (chronic pancreatitis [CP], intraductal papillary mucinous neoplasm [IPMN], pancreatic cancer [PC]). We also analyzed the prevalence of malignancy, the relationship between the appearance of malignancy and the diagnosis of 42 IgG4-RD, the type of cancer, and related factors, and we compared the age, gender, laboratory data, and AIM level.

Results: Fifteen malignancies were seen in 12 of 42 patients (28.6%). These diagnoses were made before the diagnosis of IgG4-RD for 10 malignancies in 8 patients (mean 4.8 years earlier, range 1-16 years), and after the diagnosis of IgG4-RD for 3 malignancies in 2 patients (mean 2 years later, range 1-3 years). The prevalence in 2 patients were diagnosed at the same time as the diagnosis of IgG4-RD. The AIM level in IgG4-RD group had significantly higher serum AIM levels than the healthy control or IPMN groups, and the levels tended to be higher than in the PC group.

Conclusion: Macrophages are reportedly related to IgG4 class switching in B cells associated with IgG4-RD. The serum level of AIM in IgG4-RD patients, therefore, is used as a paraneoplastic condition. AIM is considered a useful biomarker for evaluating the pathology and differentiating IgG4-RD and malignant diseases.

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

negative, repeated EUS after 2–3 months may be useful for detecting an occult pancreatic neoplasm because of cross sectional imaging results, idiopathic acute pancreatitis, weight loss, pancreas hyperenzymemia, painless jaundice and elevated Ca 19-9 values. Cystic pancreatic lesions, pseudocysts and cystic pancreatic cancer 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 ± 2.73 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 pancreatitis (n = 5, 8.9%), chronic pancreatitis (n = 13, 21.3%), necrosis (n = 3, 4.9%), autoimmune pancreatitis (AIP) (n = 3, 4.9%), microcystic serous neoplasm (n = 2), and 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, a rapid increase in 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 88% for AIP, where one false elevation was seen in a diastel cholangiocarcinoma.

Conclusion: Diagnostic accuracy of EUS is lower in the presence of pancreatitis. Focal autoimmune pancreatitis and paraoduodenal pancreatitis are still confused with each other in the setting of normal inflamed pancreatic parenchyma. EUS in the setting of a normal pancreas 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. In a clinical and imaging follow-up of more than one modality (usually EUS with CT) were necessary for achieving a definitive diagnosis. If there is a high clinical suspicion of pancreatic neoplasm in a patient that does not undergo surgery and if EUS or other available imaging modalities are not repeated EUS after 2–3 months may be useful for detecting an occult pancreatic neoplasm.

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

References:


PO121 GALECTIN-1 EXPRESSED IN Pancreatic StE LLATE Cells P romotes Tumor Progression in Pancreatic Can cer Via upregulation of SDF-1 and activation of NF-κB

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Introduction: Pancreatic cancer is characterized by a high density of stroma. Interactions between tumor and stromal cells play a critical role in tumor progression and there is increasing evidence that pancreatic stellate cells (PSC), a main component of the stroma, may participate in the development of pancreatic cancer[1]. However, details of the mechanism underlying the interaction between PSCs and pancreatic cancer cells (PCC) are poorly understood. Stomal cell phenotypic changes (SDF-1 or CXCL12) and their receptor CXCR4 belong to the CXC chemokine family and is the ligand of CXCR4 [2]. It has been implicated in promoting the metastatic potential of breast, gastric, ovarian, prostate, lung and pancreatic cancer cells. Although SDF-1 reports of SDF-1 in pancreatic cancer cell lines are rare [3], it is known that carcinoma that metastasizes has homing properties to stromal SDF-1 produced in activated PSCs may be an integral factor in tumor-stromal interactions. Galectin-1 mediates communication between cells by binding to glycol-conjugated proteins on the cell surface. Studies have shown that it is involved in multiple cancer-related processes, including immunosuppression, angiogenesis and metastasis [4]. We previously reported that Galectin-1 was highly expressed in pancreatic cancer tissues; furthermore, the primary source of Galectin-1 was in activated PSCs within the stroma of cancer cells [5]. It has previously been hypothesized that Galectin-1 may also induce activation of PSCs and stimulate secretion of chemokines [6]; however, the biological mechanism and its activities in PCCs are unclear.

Aims & Methods: The purpose of this study was to identify the effect and elucidate the molecular mechanisms of Galectin-1 in PSCs and its role in tumor progression in pancreatic cancer.

Results: By conducting a chemokine antibody array assay and transwell invasion and migration assays we were able to show that Galectin-1 induced secretion of SDF-1 in PSCs that was increased in the presence of NF-κB. Galectin-1 induced SDF-1 activity assay indicated that the mechanism involved activation of NF-κB. These observations were confirmed by qRT-PCR, ELISA and immunofluorescent assays, and were further verified by knockdown of Galectin-1 through lentiviral transfection and by employing inhibitors to block SDF-1, its ligand CXCR4 and NF-κB. In the in vitro findings were supported in an in vivo mouse model. In combination, our results demonstrated that Galectin-1 stimulated production of SDF-1 in PSCs through activation of NF-κB, and that SDF-1 promoted invasion and migration of PCCs.

Conclusion: This study suggested that enhanced expression of Galectin-1 in stromal PSCs promotes metastasis in PDAC, thereby offering a potential target in the treatment of pancreatic cancer.

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

References

Results: In mutant Kras G12D driven genetically engineered murine models (GEMM) of non-small cell lung cancer, CRISPR/Cas9 mediated gene knockout in vitro, such as pancreatic and lung cancer are lacking. SHP2 has been proven to be required for proper wild-type RAS activation, yet more recently demonstrated tumor suppressive properties as well. In our study, we performed whole-genome sequencing of samples obtained from IPMN or PDA using EUS-FNA. Consequently, genetic analysis by NGS may be effective in addition to pathological diagnosis when deciding the management of pancreatic tumors.

Conclusion: In this study, we performed whole-genome sequencing of samples obtained from IPMN or PDA using EUS-FNA. Consequently, genetic analysis by NGS may be effective in addition to pathological diagnosis when deciding the management of pancreatic tumors. All authors have declared no conflicts of interest.

References

P0123 PTPN11 DRIVES TUMOR DEVELOPMENT AND DEFINES A NOVEL THERAPEUTIC TARGET IN KRAST-MUTANT CANCERS

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Introduction: The ubiquitously expressed non-receptor protein tyrosine phosphatase SHP2, encoded by *PTPN11*, is involved in the regulation of multiple signaling cascades. SHP2 was the first reported oncogenic tyrosine phosphatase, although more recently demonstrated tumor suppressive properties as well. SHP2 has been proven to be required for proper wild-type RAS activation, yet more recently demonstrated tumor suppressive properties as well. In this study, we performed whole-genome sequencing of samples obtained from IPMN or PDA using EUS-FNA. Consequently, genetic analysis by NGS may be effective in addition to pathological diagnosis when deciding the management of pancreatic tumors. All authors have declared no conflicts of interest.

References
Aims & Methods: Twenty concomitant PDAs and IPMNs (39 samples, including concurrent 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 pathology mapping. Target amplicon sequencing that covers 18 PDA-associated genes, including RNF43, GNAS, TRPS1, SMAD4, CDKN2A/p16, ATM, PTEN, CTNNB1 and RNFRF4, was performed using Ion PGM™ system (Thermo Fisher Scientific). Protein expression of TP53, SMAD4, p6, b-catenin, and RNF43 was also analyzed immunohistochemically.

Results: KRAS mutations were identified 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, tended to harbor identical KRAS mutations as the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%). Among cases of contiguous neoplastic lesions via the main pancreatic duct between PDA and IPMNs had identical KRAS mutations. In contrast, 7 of 9 “distant” concomitant PDAs, defined as those further than 5 mm away from the IPMN (n = 11), possessed distinct KRAS mutations from the index IPMNs (74%) and 29 out of 39 (74%) of all IPMNs, 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; n = 16, 35.5 mm, vs. 74.7 mm, P < 0.00397). The KRAS identical group had a better prognosis than the KRAS different group (disease-free survival p < 0.0025, overall survival p < 0.05). Curiously, the molecular signature of 18 PDA-associated genes was not significantly different between two groups.

Conclusion: Multiple clones with distinct KRAS mutations were identified in pancreata during initiation and progression of IPMNs, and a subset of PDAs arising within the field defect share the same KRAS mutation with index IPMN lesions. Interestingly, PDAs adjacent to IPMN tend to have identical KRAS mutations, suggesting PDAs and index IPMNs may arise from a common founder. The KRAS identical group appears to have better prognosis relative to the KRAS different group, implying distinct molecular programs may govern their biological behavior.

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

Reference


P0126 POLYMORPHISM OF TP53 GENE, LEVELS OF INSULIN AND INFLAMMATORY CYTOKINES IN PATIENTS WITH PANCREATIC CANCER

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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 of apoptosis in patients 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 and alleles of the TP53 gene by exon (exon 4, Arg72Pro) polymorphism.

Results: The deduced Arg/Arg genotype of the TP53 gene was 65% in patients with PCa, 49% in the control group. In patients with PCa there was no homoyzogotic genotype Pro/Pro, in the comparison group - 13%, p < 0.05. The frequency of Arg/Pro genotype 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 – 11.9 ± 2.12 μU/ml, Pro/Pro – 18.0 ± 3.05. 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 in patients with CP than in patients with PCa (5.1 ± 1.7, 2.0 ± 0.3 and 1.3 ± 0.2 pg/ml, respectively), p < 0.05. The level of TNF-α in the serum of patients with OP was 3.5 ± 0.5 pg/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 pg/ml, respectively. In patients with PCa, the level of TNF-α was significantly lower in patients with CP, p < 0.05. The levels of IL-1β in the serum of patients with PCa with different genotypes of the TP53 gene did not differ significantly and amounted to 1.1 ± 0.2 pg/ml in patients with the Arg/Arg genotype, with Arg/Pro genotypes of 1.2 ± 0.3 pg/ml, p > 0.05. The level of TNF-α in the serum of patients with the Arg/Arg genotype was 1.2 ± 0.2 pg/ml, and did not significantly differ from the level in the serum of patients with the Arg/Pro genotype – 1.3 ± 0.1 pg/ml.

Conclusion: The Pro/Pro genotype of the TP53 gene was significantly more common than in the comparison group in patients with PCa. 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 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/MS

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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 some metabolic biomarkers 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 metabolic biomarkers in blood of PC patients. Blood samples from PC patients (n = 11), healthy volunteers (n = 11), and patients with OP (n = 11) were collected by 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.

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

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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.
P0129 VERIFICATION OF INTERNATIONAL CONSENSUS GUIDELINES FOR BRANCH DUCT INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS OF THE PANCREAS (BD-IPMN) WITH WORRISOME FEATURES

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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 (MDP), and cyst size of branch pancreatic duct (BDP). In the selected cases, histological examination, endoscopic ultrasound (EUS) and computed tomography (CT) were considered to be essential. For 8 factors of MN, EUS measurements were used in all cases. For diameter of MDP and cyst size of BDP, the CT measurement value was used. In this study, BD-IPMN was defined as cases with cystic dilatation of BPD and the MDP diameter was considered <5 mm (International Consensus Guidelines 2012). According to the WHO histological classification of IPMN (2000), pathological diagnosis is classified as adenoma (IPMAd), borderline (IPMAB), and noninvasive and invasive carcinoma (IPMCA).

Results: Pathological diagnosis was benign IPMN in 91cases (58%) and malignant in 65 (42%). In univariate analysis CA19-9, MDP diameter, the sizes of MN and BPD cysts were significant factors. In multivariate analyses, size of MN (p <0.0001) and cyst size of BPDs (p=0.004) were independent predictors of malignancy. In the multivariate analysis, the rate of malignancy was significantly higher than that of patients without WF(26%)<p<0.0001). Among 78 WF patients, 54 cases had WF (70%). Among patients with MN was significantly higher than that of WF patients without MN (69% vs 33%). With 7 mm taken as the cutoff value for the size of MN, the diagnosis of malignant IPMN had sensitivity of 76%, specificity of 73% and accuracy of 74%. Cyst size of BPD without MN was present in 8 patients (8/45 = 17%) among 78 WF patients. Pathological findings of these patients were noninvasive carcinoma in 6, invasive carcinoma 2.

Conclusion: Algorithm for the management of BD-IPMN of International Consensus Guidelines 2012 was acceptable. Mural nodules observed with EUS showed high predictive ability in BD-IPMN patients with WF. However, about 15% of carcinoma patients did not have nodules, and the handling of the diag-

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

Reference


P0131 Pancreatic Ductal Cytopathology: An Underused Diagnostic Tool

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Introduction: The diagnosis of pancreatic malignancy can be performed by brush cytology of the common bile duct or main pancreatic duct (MPD) during endoscopic retrograde cholangiopancreatography (ERCP). However, 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.

Aims & Methods: In this work we report our experience in the execution of MPD brush cytology. ERCPs between 2014 and 2015 that involved brush cytology of pancreatic strictures were included. Cytologies were obtained using the Brush Master V (Olympus Medical System). Histological evaluation was performed by two experienced cytopathologists.

Results: Of the 18 patients evaluated, 16 were men and 2 women, with a median age of 62 years (range: 43–89). All patients underwent abdominal computed tomography and 3 patients had magnetic resonance imaging. In addition to pancreatic strictures, abdominal cystic and non-cystic lesions suggestive of chronic pancreatitis in 28%, cancers, or inflammatory features in 6%. The diagnosis of the strictures was: head - 16, head and body - 1, tail - 1. The pancreatic duct was dilated in 16 patients (a median of 6.5 mm). The diagnosis of MPD brush cytology for pancreatic cancer were: sensitivity - 81.8%, specificity - 100%, positive predictive value - 100%, negative predictive value - 77.8%, accuracy - 88.9%. Sixty-one percent (n =11) of the patients had a final diagnosis of pancreatic adenocarcinoma, 5.6% (n =1) of neuroendocrine tumor and 33.3% (n =6) inflammatory stricture. All the adenocarcinomas lead to strictures in the head of the pancreas. The diagnosis of neuroendocrine tumor was made by...
endoscopic ultrasonography fine needle aspiration. One patient developed mild pancreatitis (6.4%).

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.


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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), seroma (6.3%, n = 10), breast cancer (6.3%, n = 10), and other cancers (n = 31). 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%). Additional therapies were chemotherapy (n = 69), chemoradiation (n = 4), radiation therapy (n = 3), palliative care, and unclear (n = 2). Eight patients were lost during follow-up and 151 patients were included in the statistical analysis. All patients with PM had a median overall survival of 43.0 months, with 3- and 5-year survival rates of 52.5% and 42.6%, respectively. Among the five frequent primary sites of PM, prognoses of RCC, breast cancer, and colorectal were better than those of lung cancer and seroma. Univariate Cox proportional regression analysis identified four prognostic factors: pancreatic resection (hazard ratio [HR] 0.31, 95% confidence interval [CI] 0.18–0.57, p = 0.001), extra-pancreatic metastases (HR 3.07, 95%CI 1.71–5.51, p = 0.001), tumor-related symptoms at PM diagnosis (HR 3.88, 95%CI 2.29–6.56, p < 0.001), and pathologic diagnosis of primary tumors (p < 0.001). Multivariate Cox proportional regression analysis identified three independent prognostic factors: extra-pancreatic metastases (HR 2.13, 95%CI 1.11–4.07, p = 0.02), tumor-related symptoms at diagnosis (HR 5.39, 95%CI 2.92–9.91, p < 0.001), and pathologic diagnosis of primary tumors (p < 0.001).

Conclusion: Treatment strategies and prognoses for PM completely differ according to the primary tumor type. A definitive pathologic diagnosis of PM is essential for selecting the appropriate treatment.

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

References


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Introduction: National Comprehensive Cancer Network (NCCN) guidelines recommend chest x-ray or chest computed tomography (CT) for the staging of potential resectable pancreatic adenocarcinoma (PDA). 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 metastasis 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 center (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 (83.3%) patients had metastatic PDA lesions, and 1 (16.7%) 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 (2.5%) 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 unrespectable/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 (N = 265)</th>
<th>Patients with Lung Metastasis (N = 13)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs, mean (S.D))</td>
<td>68.6</td>
<td>64.8</td>
<td>0.22</td>
</tr>
<tr>
<td>Male (%)</td>
<td>48.4</td>
<td>69.2</td>
<td>0.14</td>
</tr>
<tr>
<td>Race, Caucasian (%)</td>
<td>90.2</td>
<td>100</td>
<td>0.36</td>
</tr>
<tr>
<td>Mass size (mm, mean (S.D))</td>
<td>26.9</td>
<td>31.1</td>
<td>0.16</td>
</tr>
<tr>
<td>Mass Location</td>
<td>Head (%)</td>
<td>76.7</td>
<td>46.2</td>
</tr>
<tr>
<td></td>
<td>Body/Tail (%)</td>
<td>23.3</td>
<td>53.8</td>
</tr>
<tr>
<td></td>
<td>CA 19-9, mean (S.D)</td>
<td>899 (1528)</td>
<td>961 (482)</td>
</tr>
</tbody>
</table>

Conclusion: Our study showed that the prevalence of pulmonary metastasis in PDA was clinically relevant to 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

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Introduction: New lesions (metachronous pancreatic cancer) and recurrence may develop in pancreas after initial resection for pancreatic cancer 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 the 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 enrollment. The definition of observation under the EUS for remnant pancreas was as follows, total observation for remnant pancreas observed from liner 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 JA Onomichi General Hospital between December 2002 and March 2016, the enrolled patients were 44 who underwent EUS for remnant pancreas. In the surgical procedure, pancreatectoduodenectomy (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 2 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 were IPMN. EUS was 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). Second pancreatectomy was performed in 4 out of 7 cases. The remnant pancreas in all cases. Pathological results were positive in 5 cases. One of the other 2 cases was strongly suspected to recurrence by surgery. 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.

P0135 PATIENTS WITH INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS OF PANCREAS (IPMNS) ARE AT INCREASED RISK OF RENAL CELL CARCINOMA, PROSTATE, COLORECTAL AND BREAST CANCER: A SINGLE CENTER INNAKAN EPIRUS STUDY

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Introduction: Number of studies reported that patients with intraductal papillary mucinous neoplasms of pancreas (IPMNs) are at the increased risk for occurrence of extrapancreatic malignancies (EPMs). We have conducted a study in the aim to evaluate the prevalence and incidence of EPM in Italian patients with IPMN. In the remnant pancreas after pancreatectomy for PDAC, we have evaluated the presence of new and recurrent cancers.

Methods: A hospital based single-centre study was conducted in hospital Santa Maria della Misericordia, Udine, Italy. Hospital records were screened in the presence of extrapancreatic malignancies (EPMs). We have conducted a study in the presence of extrapancreatic malignancies (EPMs) in 60 patients with intraductal papillary mucinous neoplasms (IPMNs) treated at the University of Udine between December 31st 2015, as well as those seen during the follow-up. Data were collected from the medical records

Results: Among the 60 patients with IPMN, 31 (51.7%) were male and 29 (48.3%) were female. The mean age at diagnosis was 67.4 years (range 26-93). IPMNs were predominantly female (59.1%) and age 70–79 (47.2%). IPMNs were predominantly female (59.1%) and age 70–79 (47.2%). IPMNs were predominantly female (59.1%) and age 70–79 (47.2%). IPMNs were predominantly female (59.1%) and age 70–79 (47.2%). IPMNs were predominantly female (59.1%) and age 70–79 (47.2%).

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

<table>
<thead>
<tr>
<th>Expected</th>
<th>Observed</th>
<th>O/E</th>
<th>CI 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>7.6</td>
<td>7</td>
<td>0.98–9.19</td>
</tr>
<tr>
<td>prostate cancer</td>
<td>1.7</td>
<td>2</td>
<td>1.03–7.37</td>
</tr>
<tr>
<td>colorectal cancer</td>
<td>4</td>
<td>1</td>
<td>0.98–9.19</td>
</tr>
<tr>
<td>breast cancer</td>
<td>2</td>
<td>1</td>
<td>1.03–7.37</td>
</tr>
<tr>
<td>renal cell cancer</td>
<td>2</td>
<td>2</td>
<td>1.03–7.37</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.

P0136 CLINICAL CHARACTERISTICS OF SECOND PRIMARY PANCREATIC CANCER


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Introduction: Pancreatic ductal adenocarcinoma (PDAC) is known to have an extremely poor prognosis. Several studies reported the increased risk of second primary pancreatic ductal adenocarcinoma (2nd PDAC) in cancer survivors. However, data on the characteristics of 2nd PDAC are insufficient. Studies of PDAC in the setting of second primary cancer can provide etiologic clues to understand PDAC.

Aims & Methods: The aim of this study was to investigate the clinical characteristics of the patients with second primary PDAC compared to patients with first primary PDAC. This retrospective cohort study included 1759 patients with PDAC. They were classified as having 2nd PDAC or first primary PDAC (1st PDAC) according to a prior diagnosed cancer that originated from different organ and diagnosed at least 6 months before the diagnosis of PDAC. Comparative analysis and multivariated survival analysis were used to evaluate the characteristics of the 2nd PDAC.

Results: A total of 1759 patients with PDAC were included in the cohort. Forty-three patients were classified as having synchronous 2nd PDAC and excluded from the analysis. There were 110 patients (6.4%) with 2nd PDAC and 1606 (93.6%) patients with 1st PDAC. The median interval between the diagnosis of the 2nd PDAC and the diagnosis of the prior cancer was 8.4 years (range 0.7–31.4 years). The 2nd PDAC group. In the comparison of baseline characteristics between the 1st PDAC and 2nd PDAC groups, patients with 2nd PDAC presented significantly older age at diagnosis (66.5 vs. 62.2 years, p < 0.001), lower rate of alcohol consumption (25.5 vs. 36.8%, p = 0.017), higher rate of resectability of PDAC (26.4 vs. 15.9%, p = 0.004), and higher rate of receiving surgery as initial treatment (26.4 vs. 15.9%, p = 0.018) than patients with 1st PDAC. The most common origin of prior cancers was the stomach (22 of 110, 19.1%), breast (19 of 110, 17.3%), colon (12 of 110, 10.9%), and others. The overall survival (OS) was slightly longer in patients with 2nd PDAC; however, the difference was not significant (11.8 vs. 12.3 months, p = 0.068). Multivariate analysis without resectable status showed that 2nd PDAC (HR 0.73, 95% CI 0.56-0.94, p = 0.016), age at diagnosis (HR 1.02, 95% CI 1.01-1.02, p = 0.001), alcohol consumption (HR 1.25, 95% CI 1.11-1.42, p = 0.001), and resectable status at diagnosis (HR 0.30, 95% CI 0.25-0.36, p < 0.001) were significantly associated with OS. However, 2nd PDAC (HR 0.85, 95% CI 0.66-1.19, p = 0.198) was no longer significantly associated with OS after adjusting for resectable status. This analysis suggested that the association between 2nd PDAC and survival was owing to the higher resectability rate. When subgroups were separately analyzed according to initial treatment modality, the effectiveness of surgery and chemotherapy were similar between 2nd and 1st PDAC. In the subgroup of patients who received curative surgery, the median OS was 28.5 months (95% CI, 23.0-34.1) in the 1st PDAC group compared to 28.5 months (95% CI, 22.3-34.8) in the 2nd PDAC group.
pared with 33.1 months (95% CI, 9.0–27.2) in the 2nd PDAC group (N: 259 vs. 215; p = 0.046). The subgroup of patients who received chemotherapy, 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>SD</td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>Second PDAC</td>
<td>0.81 (0.63–1.04)</td>
<td>0.093</td>
</tr>
<tr>
<td>Age, mean</td>
<td>1.02 (1.01–1.02)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Male sex</td>
<td>1.12 (0.99–1.27)</td>
<td>0.056</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1.23 (1.08–1.39)</td>
<td>0.001</td>
</tr>
<tr>
<td>Resectable</td>
<td>0.30 (0.25–0.35)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Aim & Methods: This retrospective study was conducted at New Tokyo Hospital. A total of 597 gastric 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 antitape platelet therapy excluding single-LDA and DAPT; and 26 lesions in patients who underwent ESD for more than four operations at the same time. Thus, a total of 495 patients were enrolled in this study. The patients were categorized according to antitape platelet 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.

Results: The patients were categorized into two groups: no APT (n = 370) and APT (n = 125). APT included single-LDA (n = 74) and DAPT (LDA plus clopidogrel; n = 51). 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 univariate analysis among continuous LDA users, continuous single-LDA and continuous LDA on DAPT were not related to postoperative bleeding. Multivariate analysis for postoperative bleeding after ESD.

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 THE TREATMENT OF ESOPHAGEAL ACHALASIA WITH A MEDIAN FOLLOW-UP OF 4 YEARS
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Chronic gastrointestinal ischemia (CGI) results of insufficient blood supply to the gastrointestinal tract. The majority of CGI patients have systemic cardiovascular risk factors. Studies in patients with acute gastrointestinal ischemia have shown that microvascular flow disturbances are associated with organ damage. Sublingual microcirculation visualization may offer a fast non-invasive diagnostic method to assess the risk of gastrointestinal cancer on the basis of several biopsy samples taken from the antrum and corpus.

Aims & Methods: In this study we attempted to evaluate whether gastritis staging 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 were enrolled. The 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 compared 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 58.7±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 staging 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 histological 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 a degree. More studies and long-term follow-up will further improve the performance of our suggested new staging method.

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

Reference

P0142 SAFETY ADVANTAGE OF THE NEW DEVICE (SPASH-M KNIFE®) FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY GASTRIC CANCER

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Introduction: Endoscopic submucosal dissection (ESD) is a standard treatment for early gastric cancer. Development of the ESD device has been conducted rapidly. Spash-M-Knife® is the only new multifunctional endoscopic device to achieve complete ESD with a simple device. It achieves clear marking, better hemostasis and smoother operation during a procedure without replacing the knife.

Aims & Methods: The aim of this study was to investigate clinical outcome of ESD for early gastric cancer with a new device (Spash-M-knife®). In total, early gastric cancer treated by ESD with a needle-type knife between January 2012 and August 2016 at Kitakyushu Municipal Medical Center were retrospectively reviewed. Lesions treated by ESD with a conventional 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 (≥75 years vs <75 years), sex (male vs female), underlying disease (none vs with cardiovascular or cirrhosis), antithrombotic drugs (not receiving or discontinuation vs continuation), tumor size (≥21 mm vs <21 mm), lesion location (in the upper or middle third of the stomach vs in the lower stomach), lesion position (in the lesser curvature of the stomach vs others), macroscopic type (flat or depressed vs elevated), prevalence of ulceration (presence vs absence) and operator level (experience of ≥50 vs experience <50). As primary endpoint, the rates of the lesions that need hemostatic forceps was compared
among two groups. As sub-analyses, the cutting time, rate of on-block/complete reversal 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 in ESD-C (4.35% vs 84.8%, p < 0.001), and significantly lower rates of adverse events (on-block reversal rate: 100% vs 1; complete reversal rate: 97.8% vs 100%, p = 1; cutting time: 84.6 min vs 63.0 min, p = 0.89; perforation during ESD: 0% in both groups).

**Conclusion:** Splash M-Knife® achieved better hemostasis and safer ESD for early gastric cancer compared to Merocel, contributing to reduce cost for ESD by reducing usage of hemostatic forceps during ESD procedure.

**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**

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**Introduction:** Intubation failure (IF) when a trained endoscopist is unable to progress into the upper oesophagus via the oropharynx. The incidence is unknown, but estimated at 1–2%.[1] 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% (28/2963). 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 comprising of Oropharyngeal Hypertrophy (CPH) (49%), Zenker’s diverticulum (ZD) (14.6%), pharyngeal web (12.2%), ZD with CPH (9.8%), 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 65/70 (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 radiology, CT and repeat gastroscopy were 69.0%, 54.0% and 64.3% respectively. The concordance of endoscopic indication and pathology on further investigation for IF was 110/192 (57.3%). In patients undergoing barium radiology and repeat gastroscopy, the false negative rate for endoscopy was 17/30 (56.7%), consisting of pharyngeal barium radiology included: dysphagia (OR 5.5, 95% CI: 2.5–11.8, p < 0.001). The Kyoto classification is useful for diagnosis of HP infection: Multicenter prospective trial. Digestive Endoscopy 2013; 25: 264–273

**Conclusion:** The Kyoto classification is useful for diagnosis of HP infection: Multicenter prospective trial. Digestive Endoscopy 2013; 25: 508–515

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

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**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 in 2015 for this study after providing informed consent in writing. HP infection status was determined by the presence of HP-IGb antibody (E-plate 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 “uninfected” if an HP antibody titer of less than 3 U/ml, “eradicated” for an HP antibody titer of 3–10 U/ml and “infected” for an 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 were recorded according to the Kyoto gastritis classification: diffuse redness, regular arrangement of collecting venules (RAC), fundic gland polyph (FGP), atrophy, xanthoma, hyperplastic polyph, 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 (UMIN000016674) and was conducted with the approval of the ethics committee in our institution.

**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 Gastroenterological 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 uninfected 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 99.9%, respectively for uninfected status, 78.8%, 90.0%, 88.9%, 87.3% and 94.2%, respectively, for eradicated status, and 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, 12.0 for erosive 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: Multicenter prospective trial. Digestive Endoscopy 2013; 25: 508–515

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**P0145 A RETROSPECTIVE AUDIT OF OUTCOMES AND CURRENT CLINICAL PRACTICE POST-BALLOON TAMPODATE FOR ACUTE VARICEAL BLEEDING: HAVE THINGS IMPROVED OVER TIME?**

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**Introduction:** Balloon tamponade has traditionally been the mainstay of management for severe variceal bleeding, but has not been without complications. Data on the current practice surrounding balloon tamponade is needed. A multi-centre and multi-disciplinary survey of balloon tamponade was undertaken to determine balloon tamponade as initial therapy in treating endoscopically uncontrollable variceal bleeding, specialists and trainees feel uncomfortable with SBT insertion [4] given the perceived difficulties and complications [5].

**Aims & Methods:** We aimed to determine the current practice surrounding SBT insertion [4] given the perceived difficulties and complications [5]. 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 in 2015 for this study after providing informed consent in writing. HP infection status was determined by the presence of HP-IGb antibody (E-plate 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 “uninfected” if an HP antibody titer of less than 3 U/ml, “eradicated” for an HP antibody titer of 3–10 U/ml and “infected” for an 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 were recorded according to the Kyoto gastritis classification: diffuse redness, regular arrangement of collecting venules (RAC), fundic gland polyph (FGP), atrophy, xanthoma, hyperplastic polyph, map-like redness, intestinal metaplasia, nodular-
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 30%</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 relook endoscopy after SBT (median hours)</td>
<td>39.3 (11.5–348.2)</td>
</tr>
</tbody>
</table>

Rebleeding occurred in 45% patients during the admission despite SBT insertion, of which 79% did not survive. Seven other patients subsequently underwent a therapeutic procedure for these still died. The median time of discharge after 7 days was 50% and 41% respectively. The median duration of hospitalisation, intensive care and mechanical ventilation was 13 days (1–56), 6.2 days (0.3–36.2) and 120 hours (1–708) respectively.

Conclusion: Primary haemostasis was achieved in 93% of patients; however, rebleeding 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 for SBT insertion vary worldwide 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

P0147 DIAGNOSTIC ACCURACY OF BLUE LASER IMAGING WITH MAGNIFYING ENDOCOPY FOR INVASION DEPTH OF SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA


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Introduction: Preoperative diagnosis of invasion depth of superficial esophageal squamous cell carcinoma (SESCC) is very important to select appropriate therapeutic procedure. The Japan Esophageal Society (JES) classification using narrow-band imaging with magnification (M-NBI) was effective for predicting invasion depth of SESCC. 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 vascular and surface structure. In previous study, BLI with magnification (M-BLI) was useful for evaluating gastrointestinal neoplasms such as predicting invasion depth or tumor detection.

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 SESCCs were recorded by both M-BLI and M-NBI prior to ESD. SESCCs were pathologically diagnosed by ESD specimens. Three endoscopists with no information of the lesions evaluated invasion depth of SESCCs using M-BLI and M-NBI images according to JES classification. The diagnostic value of each procedure was evaluated.

Results: 124 SESCCs 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 UM/LM/LT was 13.7/30.17/73%, respectively. The proportion of macroscopic type for 0-IIa, 0-IIb, 0-IIc, and 0-IIId was 4.5/12.6/16.9/68.9 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 intrareader variability of three endoscopists with 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 SESCC according to JES classification, similar to M-NBI.

Disclosure of Interest: O. Handa: I received lecture fee from AstraZeneca Co., Dui-ichi sanyo Co.

Y. Itoh: I am affiliated with a department that was partially funded by Fujifilm Medical Co., Ltd. All other authors have declared no conflicts of interest.
1. Spinelli K, Fromwiller T, Daniel R, Kiely J, Nakeeb A, Komorowski R, et al. Clustering of worrisome factors predicts pathology, however, a larger cohort is needed to confirm this. We concluded that specificity and NPV of EUS predicting PCN are high, although sensitivity and PPV are lower.

References


P0148 IMPACT OF NEEDLE-BASED CONFOCAL LASER ENDOMICROSCOPY (NCLE) IN IMPROVING DIAGNOSIS OF PANCREATIC CYSTIC NEOPLASMS: SINGLE CENTER EXPERIENCE

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Introduction: Endoscopic Ultrasound (EUS) has been found to be an effective tool in diagnosing pancreatic cystic neoplasms (PCN). Celiac neuroendocrine tumor (CET) 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 combined with CEA and NCLE to determine which combination of modalities is a better predictor of PCN.

Aims & Methods: In this retrospective chart review, 22 patients with pancreatic cysts were evaluated. Specificity and Predictive Value (NPV) of EUS alone were compared to EUS with CEA and NCLE combined. Results were evaluated and diagnostic accuracy was compared with pathology using McNemer's test. Worrisome features were defined (increased cyst size, wall thickness, main pancreatic duct size, and presence of nonenhanced 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 diagnostic modalities.

Results: Diagnosis of PCN using EUS alone had a specificity of 0.73 and a NPV of 0.88. EUS and CEA and NCLE combined 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 P0150 PREDICTIVE FACTORS OF PROCEDURAL DIFFICULTIES IN ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY-STAGE GASTRIC CANCER

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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, 8.5; group S, 6.8, P = 0.0231), biopsy diagnosis (group L, 806.7mm2; group S, 995.8mm2, P = 0.0266), biopsy visualization of SCJ was successful at 92% (0.0086). Based on these factors and odds ratio, we prioritized sensitivity to avoid missing important cases with removal difficulties during ESD and suggested predictive factors for procedural difficulties during ESD. These parameters were: the size of the resected specimen 800mm2, 3 points, difficult location: 2 points, the number of biopsies >7 pieces: 1 point, Group L on biopsy diagnosis: 1 point. Cases of 6 points or more was regarded as difficult to remove that takes over 70 minutes. When examining 43 patients who underwent ESD for gastric 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, deep biopsy location are predictive factors for difficulties in ESD.

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

Aims & Methods: We retrospectively reviewed the medical records of patients with EGC treated by ESD between November 2008 and August 2016. We retrospectively investigated and analyzed 647 EGC lesions.

Results: The patients’ mean age was 66.7±10.8 years. The patient population was predominantly male (77.1%, 499/647). A well to moderately differentiated carcinoma was observed in 97.2% of patients. The common site was the lower part of the stomach (89.6%, 580/647). The highest percentage of EGC was found in the lower part of the stomach (89.6%, 580/647).
in the lesser curvature (43.9%, 284/647). Posterior EGC was more frequent in the middle third stomach than the anterior part (20.4%, 31/157 vs. 16.4%, 11/67, respectively). For EGCG characteristics compared between the lower and mid-to-upper parts, submucosal invasive EGC was found to be significantly different (odds ratio, 1.919; confidence interval, 1.014–3.623; p = 0.045).

Conclusion: Most of the EGCs resectable with ESD were found in the lower part of the stomach and lesser curvature of the stomach. The incidence of the posterior part in the mid-to-upper part of the stomach was higher than that of anterior part. The EGCG located in the mid-to-upper part of the stomach was found to have a higher incidence of invasive cancer.

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

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

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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 undefined.

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 Dense 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 GB (n = 38), 61.5% in GA (n = 39), 52.8% in GF (n = 36), 65.6% in DB (n = 32) and 71.4% in DD (n = 42). The average percentage of correct answers of humans was 19.5% 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.

Conclusion: The possibility of the recognition of endoscopic images by ML with CNN and DL is undefined. 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.

P0153 CONVENTIONAL VERSUS TRACTION-ASSISTED ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASMS (CONNECT-G): A MULTICENTER, RANDOMIZED CONTROLLED TRIAL

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Introduction: The vessel plus surface (VS) classification system proposed by Yao is widely used for endoscopic diagnosis of early gastric cancer1. However, this diagnosis is performed by visual observation and no quantitative index exists.

Aims & Methods: In this study, a method for automatically detecting early gastric cancer lesions by narrow-band imaging (NBI) using a magnifying endoscopic image in the stomach is proposed to support diagnosis. The proposed system quantitatively shows the demarcation line (DL) of lesions in narrow-band images. Machine learning is introduced into the VS classification and image processing is performed. In addition, the narrow-band image contains 200 superpixels, and each superpixel contains texture and color features; a superpixel is a collection of pixels with similar features. Finally, lesions were identified by a support vector machine, which is a model for machine learning, and DL was detected.

In this computational experiment, the demarcation of the system was verified by identifying 25 early-stage gastric cancer lesions (50 endoscopic images) using NBI-magnified observation at the Department of Gastroenterology, Murakami Memorial Hospital, Asahi University, Gifu.

Results: The average detection rate of the lesion area greatly improved to 63.0% with the proposed method compared with 28.8% with the conventional method. In addition, the obtained DL was similar to that indicated by an experienced medical physician. Based on these results, the proposed system enabled the automatic detection of early gastric cancer DL in narrow-band images, suggesting that the proposed system is useful for the determination of DL.

Conclusion: In this study, a method to assess features of gastric lesions combined with the use of superpixels was proposed. The average detection rate of the lesion range using the proposed method greatly improved compared with that using the existing method, enabling the detection of DL without depending on a physician’s experience.

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

References
PO155 ENDOSCOPIC TREATMENT OF FISTULAS AFTER SLEEVE GASTRECTOMY: ASSESSMENT FOR SWITCHING TOWARDS INTERNAL DRAINAGE IN A REFERENCE CENTER

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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 endoclips. ID management was defined as: initial treatment using naso-cystic 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 ±45 days. Overall success of endoscopic treatment was 86% within 6 ±2.7months. 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). Success of initial management was significantly higher for ID (p < 0.05).

Factors associated with failure of closure management were in multivariate analysis: tumor location (p = 0.013, OR = 3.89; CI[1.3–10.9]) and tumor size (p = 0.044, OR = 3.89; CI[1.0–14.9]) and purulent flowing at endoscopy (p = 0.043, OR = 4.69; CI[1.0–20.4]). Factors associated with post-2013 management were in multivariate analysis: first endoscopy within 6 months (p = 0.016), Clavien-Dindo-type 4 and 5 (p = 0.016), and absence of glue sealing (p = 0.027).

Conclusion: Endoscopic management of PSGF healed in 86% of cases. In case of collection greater than 5 cm, an internal drainage should be proposed first. A success rate before endoscopy management was associated with long-care. Management in our center has changed over time with earlier first endoscopy management and 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

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Introduction: Endoscopic full-thickness resection (EFTR) 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 EFTR is a challenge for endoscopists. In this study, we introduced EFTR with fistula closure using the over-the-scope clip (OTSC) system for gastrointestinal subepithelial tumors originating from the muscularis propria.

Aims & Methods: We aimed to evaluate the feasibility and safety of fistula closure with OTSC by a retrospective analysis on the cases of EFTR with defect closure using OTSC for gastrointestinal subepithelial tumors in our hospital. The patients were selected who underwent EFTR 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 7.3 min (range: 3–27 min). 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 EFTR with defect closure for gastrointestinal tumors in the muscularis propria (tumor diameter ≤3 cm). 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 HYROCORTISONE SODIUM SUCINNATE AND ALUMINUM PHOSPHATE GEL FOR THE PREVENTION OF STRICTURE AFTER ≥2/3 CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR ESOPHAGEAL CANCER—A SINGLE CENTER PILOT STUDY FROM CHINA

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Introduction: ESD has been performed on many patients with early stage esophageal cancer in China. However, post-ESD stricture is the most important issues for quality of life in patients which is drastically decreased and repeat, periodic esophageal balloon dilatation (EBD) is usually required over long periods. It is well known that hormone for external use is more easily absorbed in broken skin. Accordingly, We explore a novel strategy with oral mixture of hydrocortisone sodium succinate and Aluminum phosphate gel for prevention of the stricture.

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 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 (triamicinolone acetonide 80mg) injection accompanied with systemic steroid treatment (IT+ST group), six patients received oral mixture of hydrocortisone sodium succinate and Aluminum phosphate gel (OHA group). We compared the two groups in terms of stricture rate and total number of esophageal 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 2 weeks and continued with a gradually tapering OHA dose on the second day post-ESD. Esophagastroduodenoscopy (EGD) was performed on demand whenever patients complained of dysphagia. Among those cases, EBD was performed when patients experienced persistent dysphagia. If the patient had no complaint of dysphagia, EGD was performed 8 weeks after ESD to evaluate any possible stricture. The primary end point in this study was the stricture rate after ESD followed by oral EBD. The secondary end point was the number of EBD sessions required to resolve the stricture. A stricture was defined as a difficulty in swallowing solids or an inability to pass an EGD (9.2 mm diameter endoscope).

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 OHA group. 12 cases were resented on bloc with tumor free lateral and basal margins. No complications were seen after this procedure. The stricture rates of ST, IT + ST, OHA group after ESD were 100% (4 of 4 patients), 33.3% (one of three patients), 0% (none of six patients), respectively. One patient with stricture after ESD had lateral recurrence at the margin of ulcer. One EBD was performed in three patients in ST group and one patient in IT + ST group with esophageal stricture. One patient in ST group underwent oral endoscopy, 4 in IT + ST, 3 in OHA group. All patients were alive at the time of this report.

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
Introduction: Endoscopic resection for superficial non-ampullary duodenal epithelial neoplasms (SNADETs) 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 (CPC) 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 ≤6 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 35 patients were removed using cold polypectomy in 20 patients with sporadic SNADETs. 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 was 5, 16, and 3 (21%, 67%, and 8%) by EMR location (1st, 2nd, and 3rd portion), respectively, and 2, 3, 13, and 4 (2%, 18%, 54%, 17%) for macroscopic appearance (ISp, Is, Il, Ia + IIc, and Ilc), 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, 9 lesions (36%) were high-grade adenomas. The mean size of the adenomas 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 R1 resections using CFP and CSP, respectively. Delayed bleeding and intraprocedural delayed perforation were not observed in any case. The use of R (versus non-R) agents at the 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.

References

Resolution White Light Endoscopy (HR-WLE) followed by HR-NBI. A careful evaluation of the antrum and corpus mucosa was performed and each 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 by the diagnostic pathologist. 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. Using 6 patients with positive results 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%).

## References


P0165 COMPREHENSIVE EVALUATION OF THE LEARNING CURVE FOR PERORAL ENDOSCOPIC MYOTOMY: LESSONS FROM 1346 PATIENTS
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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 published in the 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 representive 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 curve. The 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.

P0166 CLINICAL CURATIVE EFFECT ANALYSIS OF 162 GASTRIC STROMAL TUMORS RESECTED BY ENDOSCOPIC TREATMENTS
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Introduction: Gastrointestinal 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 (EFTR) 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 1st 2010 to July 31st 2015 were analyzed. 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 aborted under the monitor of laparoscopic surgery.

Results: Complications were observed in 8 patients (4.9%): bleeding during operation (0 cases), 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

P0167 GASTROENTEROLOGY REGISTRAR OF THE WEEK: A SOLUTION FOR AUGIB ENDOSCOPY TRAINING?
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Introduction: Much concern surrounds Gastroenterology Specialist Registrar (StR) endoscopy training, especially in regards to endoscopic management of Acute Upper Gastrointestinal Bleeding (AUGIB). Recent evidence suggests there has been a decline in exposure and experience in AUGIB endoscopy. In July 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 endoscopy during the period of 1st of March 2015 to 31st August 2015 were retrieved using the endoscopy reporting tool Unisoft and analysed. Reports where StRs 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 StRs (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 Gastric Stomal Bleeding, EGD was performed on an average 13.6 EGDs per month. One case was able to perform one case of oesophageal variceal banding and one case where Haemostpip 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 for 2.6 EGDs were performed by each StR. 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 StRs to be trained in endoscopic haemostasis and augmentation to AUGC endoscopy. As per this study each StR on an average performed endoscopy on 24 AUGIB patients. If this is extrapolated, each StR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of EI, average a StR can perform around 4 interventions over 6 months, which comes to 8 per year and 40 in 5 years program. The results are significantly better than in the previous cohort and other centres. 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.

Reference

P0168 HIGH PERCENTAGE OF VISIBLE LESIONS IN PATIENTS WITH BARRETT’S ESOPHAGUS REFERRED WITH DYSPLASIA IN RANDOM BIOPSYs
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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 we want 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 acetic 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 (80.5% male, age 42–81 years (median (68)) did not show a visible lesion and were finally confirmed by endoscopy. In three of 32 patients (9.4%) 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 43 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 upgraded 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 final 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.

TABLE 1: - Demographics & Results

<table>
<thead>
<tr>
<th>Clinical failure</th>
<th>Clinical success</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients n = 22</td>
<td>n = 12</td>
<td>n = 10</td>
</tr>
<tr>
<td>Gender</td>
<td>Male:Female</td>
<td>6/6</td>
</tr>
<tr>
<td>Etiology</td>
<td>Post-surgery</td>
<td>7</td>
</tr>
<tr>
<td>Post-dilatation</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Post-radiation</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Post-invasive ventilation</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Pulmonary location</td>
<td>Trachea</td>
<td>10</td>
</tr>
<tr>
<td>Right bronchus</td>
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<td>1</td>
</tr>
<tr>
<td>Left bronchus</td>
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<td>2</td>
</tr>
<tr>
<td>Orifice size</td>
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</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td>Resolution at 6 months</td>
<td>0</td>
<td>&lt;10^-3</td>
</tr>
<tr>
<td>No resolution at 6 months</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Endoscopic treatment Mean number of esophageal stents</td>
<td>3.6 (±3.9)</td>
<td>2.3 (±2.7)</td>
</tr>
<tr>
<td>Mean number of OTSc</td>
<td>1.2 (±1.8)</td>
<td>0.4 (±0.7)</td>
</tr>
<tr>
<td>At least one esophageal stent</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<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 etiologies 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 number of endoscopies 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; 95% CI: 3.38–573, p = 0.004 multivariate analysis). The rate of lymph node metastasis increased in proportion to 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.
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 GCIS score; 2) gastric emptying evolution and 3) safety. In Nov 2015, a total of 7 patients underwent POEP. The efficacy 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 GCIS score and delayed gastric emptying scintigraphy. Four patients reached 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 GCIS decreased from 3.0±1.2 to 0.8±0.7 (3±months) and 0.9±0.8 (6±months). One woman followed up 12-months follow maintaining excellent outcome. Treatment success was reached in 6/8 (76%) patients, one female patient with diabetic gastroparesis did not show a major symptomatic improvement despite normalisation of gastric emptying study. Gastric scintigraphy normalized in all patients, mean half emptying time was reduced from 108±30 min to 62±25 min; and mean bolus retention at 4 hours decreased from 17±9.2% to 2±0.2%. 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.

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Introduction: Neoplasia in Barrett’s can be subtle and difficult to identify. Blue light imaging (BLI) by Fujifilm is a novel advanced endoscopic technology that provides high-intensity contrast imaging for superior visualisation of mucosal surface and vessel patterns. This can improve the identification of Barrett’s neoplasia. To date there is no formal classification system that enables the characterisation of neoplastic and non-neoplastic Barrett’s for BLI.

Aims & Methods: The aim of our study was to develop and validate a classification to identify Barrett’s neoplasia using BLI. 3 expert endoscopists formed a working group to identify criteria characterising neoplastic and non-neoplastic Barrett’s on BLI using a modified Delphi method. A simple classification system utilising pit, vessel pattern and colour was developed using a database of 40 videos. Six experienced endoscopists then assessed a library containing 45 images of neoplastic and non-neoplastic Barrett’s using the proposed criteria. Sensitivity, specificity, positive (PPV) and negative predictive values (NPV) were calculated to assess its performance. The same parameters were then evaluated for each component criteria.

Results: The BLINC classification descriptors are as follows: Non Neoplastic Barrett’s: Pit pattern: circular, tubular or branching with normal density; Vessel pattern: regular, pericryptal non dilated vessels with normal vessel density; Colour: pale Non Neoplastic Barrett’s: Pit pattern: irregular, crowded with increased density; Vessel pattern: irregular, non cryptal, dilated vessels with increased density; Colour: focal darkness The overall sensitivity and specificity, negative and positive predictive values with corresponding 95% confidence intervals are as follows: 96.7 (92.4–98.9%), 96.7 (91.2–99.1%), 97.3 (93.3–99.0%) and 95.9 (90.7–98.2%) respectively in the classification of Barrett’s neoplasia. When positive predictive values with corresponding 95% confidence intervals are as follows: 93.8 (89.5–98.1%), 95.2 (90.1–97.2%), 95.2 (89.9–97.7%) and 82.5 (75.6–87.8%) respectively in the classification of Barrett’s neoplasia. To date there is no formal classification system that enables the characterisation of neoplastic and non-neoplastic Barrett’s for BLI.

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

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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 metastasis.

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 1.3–8.8 cm). Six patients had periorbital 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 safe 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

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Introduction: LCI is a new imaging technique based on 4 independently activating LEDs that is enhancing the mucosal vascular pattern and surface pattern morphology. To date, chromoendoscopy with acetic acid is considered the gold standard for diagnosis of Barrett’s esophagus. Therefore, consecutive patients with Barrett’s esophagus were 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 biopsy protocol did not add additional information compared to the one already obtained by using LCI.

Conclusion: The newly introduced LCI technique is superior to high-definition white light endoscopy (P<0.001). The random four-quadrant biopsy protocol did not add additional information compared to the one already obtained by using LCI. (100% concordance). The newly introduced LCI technique is superior to high-definition white light endoscopy for diagnosis of Barrett’s esophagus and equally effective.

P0176 PREDICTORS OF ADENOMA DETECTION AT COLONOSCOPY AFTER BOWEL SCOPE SURVEILLANCE: RESULTS FROM A UK PILOT SCREENING CENTRE

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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 fully roll out the programme. The correlation between 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 for 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 15% (all detected at BS). The adenoma miss rate at BS was 5.2%. On univariate analysis (Table 1), polyp ≥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 ≥10 mm adenoma. 57 (14.8%) underwent colonoscopy outside protocol, which reduced ADR (OR 0.29, p=0.03). After excluding patients with 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), [i] and likelihood 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>
</tr>
</thead>
<tbody>
<tr>
<td>At least 3 polyps</td>
<td>78</td>
<td>45 (57.7%)</td>
<td>1.46 (0.88-2.43)</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>
</tr>
<tr>
<td>High grade dysplasia</td>
<td>16</td>
<td>5 (31.3%)</td>
<td>0.82 (0.28-2.41)</td>
</tr>
<tr>
<td>Any villous component</td>
<td>190</td>
<td>69 (36.3%)</td>
<td>1.09 (0.72-1.67)</td>
</tr>
<tr>
<td>&gt;20 hyperplastic polyps</td>
<td>3</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>None of the above</td>
<td>57</td>
<td>9 (15.8%)</td>
<td>0.29 (0.04-0.62)</td>
</tr>
<tr>
<td>Villous only histology</td>
<td>10</td>
<td>7 (70.0%)</td>
<td>4.41 (1.12-17.36)</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 Snares Polypectomy with Submucosal Injection versus Endoscopic Mucosal Resection for 6–10mm Colorectal Polyps: A Randomized Non-Inferiority Trial

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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 nonpedunculated 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 (CSPPB; any episode requiring emergency department presentation, hospitalization, or reinvention 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, −4.15 to 11.56), showing noninferiority of SL-CSP to EMR. The SL-CSP technique was noninferior to EMR E5 box forceps 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 = 0.06) and Parts 0–Ia 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 CSPPB or perforation occurred in either group.

Conclusion: Cold snare polypectomy with submucosal injection is 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.

Table 1: The techniques used for the excision of colorectal polyps smaller than 20 mm

<table>
<thead>
<tr>
<th>Resection Method</th>
<th>1–3 mm</th>
<th>4–5 mm</th>
<th>6–9 mm</th>
<th>10–19 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard cold biopsy forceps</td>
<td>70.5%</td>
<td>32.7%</td>
<td>3.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Jumbo biopsy forceps</td>
<td>7.3%</td>
<td>6.8%</td>
<td>19.0%</td>
<td>0%</td>
</tr>
<tr>
<td>Hot biopsy forceps</td>
<td>1%</td>
<td>1.9%</td>
<td>2.5%</td>
<td>2%</td>
</tr>
<tr>
<td>Cold snare</td>
<td>16.2%</td>
<td>34.8%</td>
<td>21.2%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Hot snare</td>
<td>4.1%</td>
<td>19.6%</td>
<td>50.4%</td>
<td>38.9%</td>
</tr>
<tr>
<td>Endoscopic mucosal resection</td>
<td>0.6%</td>
<td>3.9%</td>
<td>19.7%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Conclusion: There is a remarkable heterogeneity in the techniques used for removal of polyps <20 mm among Spanish endoscopists. Cold snare, hot snare, and EMR are the preferred techniques for removal of polyps smaller than 20 mm, small polyps and polyps measuring 10 to 19 mm, respectively. The use of cold snare for removing small and diminutive polyps is most frequent among gastroenterologists with a greater dedication to endoscopy (colorectal volume per week and performing advanced endoscopy) and among endoscopists with less than 10 years in practice.

Disclosure of Interest: All authors have declared no conflicts of interest.
Cancer and SM-m cancer (p = 0.727, chi-square test). The frequency of irregular WOS in M or SM-s cancer and SM-m cancer was 67.8% (21/31) and 75% (19/24), respectively. There was no significant difference in the prevalence between irregular WOS in M or SM-s cancer and SM-m cancer (p = 0.727, chi-square test).

Conclusion: These findings suggest that in colorectal epithelial neoplasms in which WOS can be visualized by magnification endoscopy, the morphologi- 
y of the WOS may be a useful marker in the differential diagnosis of adenoma and carcinoma using magnifying endoscopy.

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

References
Yao K, Isawashita A, Tanabe H, et al. White opaque substance within superficial elevated gastric neoplasia as visualized by narrow-band imaging: a new optical sign for differentiating between adenoma and carcino-

P0180 WHITE OPAQUE SUBSTANCE, A NEW OPTICAL MARKER OF MAGNIFYING ENDOSCOPY: USEFULNESS IN DIAGNOSING COLORECTAL EPITHELIAL NEOPLASMS
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Introduction: Yao et al. observed gastric epithelial neoplasms and chronic gas-
troenteritis using magnifying endoscopy with narrow-band imaging (NBI), and reported a phenomenon in which a white opaque substance (WOS) present in the epithelium did not allow passage of the projected light and obscured the subepithelial microvasculature (1). Furthermore, the morphology of the WOS is a useful marker for differentiating between adenoma and carcinoma in gastric epithelial neoplasms (1). Recently, we reported for the first time that WOS is also detected in colorectal epithelial neoplasms (2). However, it is unclear whether the morphology of the WOS in colorectal epithelial neoplasms is useful in the differ-
eNT diagnosis of adenoma and carcinoma (3). Therefore, we performed a prospec-
tive observational study to determine whether it is possible to differentiate between carcinoma and adenoma based on the morphology of the WOS in colorectal epithelial neoplasms (UMIN000021531).

Aims & Methods: The subjects were consecutive patients with colorectal epithelial neoplasms (adenoma, early colorectal cancer) who underwent endoscopic or surgical resection at Fukuoka University Chikushu Hospital from December 2015 to November 2016. Prior to treatment, the entire lesion was observed using M-NBI, and endoscopic images were taken and recorded in a filing system. After the endoscopy was completed, a determination was made regarding the presence or absence of WOS on the endoscopic images. The morphology of the WOS was determined for cases in which WOS was present and in whom WOS was seen in more than half of the region before the results of histopathological examination of the lesions were known. The morphological characteristics of the WOS were classified as regular WOS or irregular WOS according to our previous report (1). The primary endpoint was the diagnostic performance of morphologi-

cal analysis of the WOS (accuracy, sensitivity, specificity) for early colorectal cancer taking irregular WOS as an indicator. The secondary endpoint was the difference in the prevalence of irregular WOS between mucosal (M) or SM-s cancers vs. SM-m cancers (estimated 1000 micrometers) and SM-m (the depth of submucosal invasion is over 1000 micrometers).

Results: Fifty-two ninety-two-nine lesions in 296 patients were included in this study. Of these lesions, 404 were excluded, according to the following conditions: 286 negative for WOS, 72 in which WOS was seen in less than half of the region 34 that were diagnosed histologically as hyperplastic polyp, and 30 that could not be investigated because of rich mucus. The analysis was conducted using 125 that most operators felt that the role of the novel test would be likely to be a diagnostic procedure in an out of hospital setting. Expert operators felt that training in the device was easier but also provided less ability to torque stream due to automated sequences.

Conclusion: This is the first step in identifying specific training needs and pursuing an early diagnosis of cancer. This study also had the potential to reduce the length of time for skills acquisition associated with stan-
card colonoscopy training through the use of semi-automated robotic devices.

Disclosur...
P0183: HIGH CLEANSING EFFICACY OF NER1006 ALSO IN THE ELDERLY: POST-HOC SUBGROUP ANALYSIS OF RANDOMISED PHASE 3 TRIALS

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2Clinical Development, Norgine Ltd., Harefield/United Kingdom
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Introduction: Effective colonscopy requires effective bowel cleansing. Inadequate cleansing may decrease diagnostic sensitivity, necessitate repeat procedures and delay appropriate treatment. Successful colon cleansing is harder to achieve in patients aged over 65 than in younger patients. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel preparation, a patented combination optimised for effective bowel cleansing. Here, the efficacy of NER1006 at cleansing the colon in preparation for colonoscopy is compared to three active comparators, with attention to their efficacies in patients aged ≤65 years and >65 years who had a readable colonoscopy.

Aims & Methods: Colon cleansing efficacy of NER1006 was compared to three currently used bowel preparations in patients aged ≤65 years and in patients aged >65 years. NER1006 was compared to sodium picosulfate + magnesium citrate (NaPic + MgCit), trisulfate and 2L PEG with ascorbate (2L PEG + Asc), in three multicentre randomised Phase 3 clinical trials: DAYB1, NOCT2 and MORA3, respectively. 2L PEG + Asc was administered over 2 days and in the MORA trial, the doses of NER1006 were administered either in 1 day morning-only (N1D) or, as with 2L PEG + Asc, split over 2 days (N2D). In the DAYB study, NER1006 was administered evening-only the day before colonoscopy (NDB). Treatment-blinded central readers rated colon cleansing according to the Harefield Cleansing Scale. Following segmental scoring, overall colon cleansing was graded from A to D. Grades A and B were judged as successful cleansing; grades C and D were judged as failed cleansing.

Results: Pooling the data from the three trials to assess colon cleansing in the two age groups showed successful cleansing in 80.5% (1158/1438) of patients aged ≤65 years and 79.6% (277/348) of patients aged >65 years (difference of 0.9%, P = 0.698; 95% CI: −3.7% to 5.6%). Within each trial the difference in colon cleansing in the age groups indicated that the effect of increased age on cleansing efficacy was lesser in the NER1006-treated patients than in patients treated with the active comparators (Table 1). For example, in patients treated with NER1006 the rate of successful colon cleansing in patients aged >65 was 5.2% higher than in patients aged ≤65, whereas in patients treated with NaPic + MgCit, there was a 3.5% lower successful cleansing rate in patients aged >65 than in patients aged ≤65.

Conclusion: NER1006 was efficacious in successful colon cleansing in patients aged >65 (in whom successful colon cleansing is harder to achieve) as well as in patients aged ≤65. Statistical significance was not reached in these comparisons.

Disclosure of Interest: R. Jover: Received grants support from MSD; Advisory board participation for Norgine
R. Ng Kwet Shing: Employee of Norgine
All other authors have declared no conflicts of interest.

References

Abstract No: P0183

Patients with successful cleansing, n (%)

<table>
<thead>
<tr>
<th></th>
<th>NER1006 (NDB)</th>
<th>NaPic + MgCit</th>
<th>Trisulfate</th>
<th>NER1006 (N1D)</th>
<th>NER1006 (N2D)</th>
<th>2L PEG + Asc</th>
</tr>
</thead>
<tbody>
<tr>
<td>NER1006</td>
<td>127/196 (64.8)</td>
<td>115/205 (56.1)</td>
<td>192/208 (92.3)</td>
<td>197/213 (92.5)</td>
<td>191/210 (90.9)</td>
<td>184/192 (95.8)</td>
</tr>
<tr>
<td>NaPic + MgCit</td>
<td>28/40 (70.0)</td>
<td>20/38 (52.6)</td>
<td>43/47 (91.4)</td>
<td>41/47 (87.2)</td>
<td>54/60 (90.0)</td>
<td>69/70 (98.6)</td>
</tr>
<tr>
<td>P-value</td>
<td>0.522</td>
<td>0.699</td>
<td>0.856</td>
<td>0.320</td>
<td>0.828</td>
<td>0.179</td>
</tr>
<tr>
<td>95% CI (%)</td>
<td>−21.4–11</td>
<td>−14.4–21.3</td>
<td>−8.1–9.8</td>
<td>−5.2–15.7</td>
<td>−7.7–9.6</td>
<td>−6.7–1.2</td>
</tr>
</tbody>
</table>

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)
Introduction: The European Colonoscopy Quality Investigation (ECQI) Group comprises expert colonoscopists and investigators from Europe and aims to raise awareness of the need for improvement in colonoscopy standards across Europe. Recently, the European Society of Gastrointestinal Endoscopy (ESGE) has developed key performance measures for lower gastrointestinal colonoscopy.1

Aims & Methods: To assess the quality of colonoscopy in current clinical practice, through the use of online questionnaires, compared with recently published ESGE performance indicators. The development of the online practitioner and procedure questionnaires has been previously described.2, 3 Data collection is an ongoing process. We analysed data collected between 2/6/16 and 17/4/17 and compared with the ESGE performance measures.

Results: 40 of 50 practitioners completed the practitioner questionnaire. 2094 colonoscopies were documented across 8 European countries by 47 practitioners. The ESGE sets a minimum standard of ≥90% of patients with adequate bowel cleansing. Our findings indicate that some important performance measures at screening or diagnostic colonoscopy in patients aged 50 years or more. ADR was routinely recorded by only 18% of practitioners. Polyp removal rate is recommended by ESGE are not currently being achieved in practice. By providing a self-assessment tool and as a next step, by individual consultations with national Group members, ECQI hopes to improve clinical practice standards.

Conclusion: Gastrointestinal endoscopy is performed with the use of sedation by the majority of Greek gastroenterologists. Propofol-based regimens are seldom used in everyday clinical practice, despite a vast number of Greek gastroenterologists who underwent endoscopy. Compared to a past survey, Greek gastroenterologists are more likely to use sedation (p = 0.005). Among those using sedation, midazolam was the most frequently used agent in EGD (50%) and the combination of midazolam/fentanyl was the most frequently used in colonoscopy (24.6%), followed by midazolam (21.9%). Out of 137 physicians using benzodiazepines (midazolam, diazepam) as part of their endoscopic sedation regimen, 91 (66.4%) routinely used flumazenil to facilitate pharmacological antagonism after the completion of the endoscopy. In total, 45 physicians, 23.1% of the participants and 30.8% of those using sedation, used propofol or a combination of propofol and other agents. 30 gastroenterologists routinely administered propofol without the aid of an anesthesiologist (66.6%). Medical/legal issues (33%), inadequate training in the use of propofol (26.4%) and risk of cardiopulmonary complications (23.6%) were cited as the main reasons for not using propofol. As far as monitoring practices go, the majority of gastroenterologists observed heart rate and oxygen saturation (96% and 97% respectively). Regarding the safety equipment available to the gastroenterologists, 160 (82%) reported having access to regimens of pharmacological resuscitation, 145 (74%) to oropharyngeal airway devices or laryngeal airway masks, 92 (47%) to endotracheal intubation equipment and 86 (44%) to a defibrillator. When asked to rate their level of satisfaction with their preferred sedation regimen (or with not using sedation) in a scale of 1 to 10, 72 physicians rated their satisfaction level as 9 or 10 (36.9%) and 92 as 7 or 8 (47.1%). While there was no significant difference in terms of satisfaction between the doctors that used sedation and those who did not, there was a statistically significant difference between the gastroenterologists that used propofol (alone or in combination with other agents) and those who used other sedative agents (p = 0.003). When asked on their preferred method of sedation, if they were themselves subjected to gastrointestinal endoscopy, 104 physicians opted for propofol-based sedation regimens (53.3%).

Conclusion: Sedation in gastrointestinal endoscopy: Current practices of Greek gastroenterologists. A. Protopapas, E. Stournaras, G. Neokosmidis, A. Protopapas. 1st Department Of Propaedeutic Internal Medicine, Ahepa Hospital, Thessaloniki, Greece

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

References

Abstract No: P0186

Sedation in Gastrointestinal Endoscopy: Current Practices of Greek Gastroenterologists

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Introduction: When it comes to gastrointestinal endoscopy, considerable heterogeneity is observed between gastroenterologists regarding the use of sedation and the preferred sedative agents. The sedation protocol used by a gastroenterologist may have a significant effect on endoscopic quality, patient cooperation and both the doctor’s and the patient’s satisfaction with the procedure.

Aims & Methods: The aim of this study was to document current endoscopic practices of Greek gastroenterologists and investigate whether they use sedation to perform gastrointestinal endoscopy and which pharmaceutical agents are usually involved. A 39-item online questionnaire was devised, addressing demographic data, use of sedation in endoscopy and monitoring practices. It was subsequently made available to 509 Greek gastroenterologists by e-mail.

Results: A total of 195 questionnaires were successfully completed (38.3%). 49 gastroenterologists did not use sedation to perform esophagogastroduodenoscopy (EGD) or colonoscopy (25.1%). The younger gastroenterologists were more likely to use sedation (p = 0.005). Among those using sedation, midazolam was the most frequently used agent in EGD (50%) and the combination of midazolam/fentanyl was the most frequently used in colonoscopy (24.6%), followed by midazolam (21.9%). Out of 137 physicians using benzodiazepines (midazolam, diazepam) as part of their endoscopic sedation regimen, 91 (66.4%) routinely used flumazenil to facilitate pharmacological antagonism after the completion of the endoscopy. In total, 45 physicians, 23.1% of the participants and 30.8% of those using sedation, used propofol or a combination of propofol and other agents. 30 gastroenterologists routinely administered propofol without the aid of an anesthesiologist (66.6%). Medical/legal issues (33%), inadequate training in the use of propofol (26.4%) and risk of cardiopulmonary complications (23.6%) were cited as the main reasons for not using propofol. As far as monitoring practices go, the majority of gastroenterologists observed heart rate and oxygen saturation (96% and 97% respectively). Regarding the safety equipment available to the gastroenterologists, 160 (82%) reported having access to regimens of pharmacological resuscitation, 145 (74%) to oropharyngeal airway devices or laryngeal airway masks, 92 (47%) to endotracheal intubation equipment and 86 (44%) to a defibrillator. When asked to rate their level of satisfaction with their preferred sedation regimen (or with not using sedation) in a scale of 1 to 10, 72 physicians rated their satisfaction level as 9 or 10 (36.9%) and 92 as 7 or 8 (47.1%). While there was no significant difference in terms of satisfaction between the doctors that used sedation and those who did not, there was a statistically significant difference between the gastroenterologists that used propofol (alone or in combination with other agents) and those who used other sedative agents (p = 0.003). When asked on their preferred method of sedation, if they were themselves subjected to gastrointestinal endoscopy, 104 physicians opted for propofol-based sedation regimens (53.3%).

Conclusion: Gastrointestinal endoscopy is performed with the use of sedation by the majority of Greek gastroenterologists. Propofol-based regimens are seldom used in everyday clinical practice, despite a vast number of Greek gastroenterologists who underwent endoscopy. Compared to a past survey, Greek gastroenterologists are still hesitant about using propofol. However, an increasing tendency towards administering propofol without the aid of an anesthesiologist is observed. Also, physicians using propofol seem to be more satisfied with their sedation practices than the doctors using other sedation regimens. Absence of a distinct legal framework, inadequate training and fear of cardiopulmonary complications are identified as the main reasons preventing Greek gastroenterologists from using propofol.

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 QI recording was evaluated across 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 ± 0.17 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.

Conclusion: This study illustrates that quality indicators for colonoscopy assessment in a Belgian tertiary hospital endoscopy unit could be easily implemented with limited human resources by adapting a company reporting system and link it to a separate database. New participatory filling of QI may be used as a tool for system implementation success. Our results were consistent with goals required by international guidelines. This system allows giving feedback to individual endoscopists for self-performance assessment and might be easily adapted in the future following guidelines updates.

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

References

Aims & Methods: This systematic review compares the benefits of CTC and OC for CRC screening. This systematic review includes all available randomized clinical trials available comparing CTC and OC for CRC screening in asymptomatic patients. We assessed study quality using the revised version of the quality Assessment of Diagnostic Accuracy Studies. In this meta-analysis, we compared, in the form of Forest Plots, patient participation rate and the detection rates for advanced colorectal neoplasia (ACN) between the two methods. 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.

Results: A total of 386 articles were identified in the initial search. Of these, three studies were included in the systematic review and submitted for meta-analysis. A total of 16,592 patients were invited to undergo screening programs, but only 3881 underwent the procedures. In the analysis of participation rates, only 2333 of 8104 patients invited underwent CTC and only 1486 of the 7310 patients invited underwent OC. The absolute risk difference in participation rate in the two procedures was 0.1% (95% CI, 0.05-0.14) in favor of CTC. In the analysis of ACN detection rates, 2357 patients undergoing CTC and 1524 patients undergoing OC were included. Of these, 135 patients who underwent a CTC and 130 patients who underwent an OC were diagnosed with ACN. The absolute risk difference in ACN detection rate in the two procedure types was −0.02 (with a 95% CI between −0.04 and −0.00) in favor of OC.

Conclusion: CTC is an option for the exercise of CRC screening in asymptomatic patients. However, as a CTC has proved inferior in detecting advanced colorectal neoplasia, the method should not replace a OC, which remains as gold standard.

Disclosure 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-H290i (Olympus Corp., Tokyo, Japan). The current study, two endoscopists (M.M, Y.M.) manually annotated 43 colonoscopy videos with 238 min of 17,993,676 frames. These videos included 75 polyps (48 neoplasms, 27 non-neoplasms), and annotations were made on the presence or absence of polyps in every frame. Forty-three 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) were used to validate the CAD algorithm. A modified version of Caffe with 3-Dimensional Convolutional Networks (a kind of deep learning) was used for 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. Video-interrater 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 was 0.887 for 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 JP25292097.

Disclosure of Interest: K. Mori: Kensaku Mori received research founding from Cybernet System Company and Olympus Company. All other authors have declared no conflicts of interest.

References

P0192 TREATMENT OUTCOMES OF CORE FCOPE POLYPECTOMY FOR PATIENTS WITH DIMINUITE POLYPS: A PROSPECTIVE FOLLOW-UP STUDY
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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 with CFP from June 1st to March 2017. Most CFP were the first colonoscopy of these patients. CFP 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: CFP was performed for total 515 polyps from 277 patients. The size of the polyps was <3 mm/4-5 mm/5 mm was 379/101/35. The rate of one-bite polypectomy for adenoma was <3 mm/4-5 mm/5 mm was 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 antplatelet 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 suspecting residual or recurrent lesions. 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 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/10 years or 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-bite polypectomy was significantly higher for diminutive polyps especially less than 5 mm. Importantly there are no polyps suspecting residual or recurrent lesions. Cold forceps polypectomy is safe and effective option for diminutive polyps (5 mm). Although the rate of one-bite polypectomy was not related to the endoscopists’ experience, adenoma detection rate is deemed to be low in young endoscopists. Since achievement of “clean colon” is one of the key to reduce colorectal cancer, multiple colorectal examination are necessary to achieve “clean colon” especially if the patients have more than two polyps at the first examination.

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
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Introduction: Colonoscopy is the most effective method for preventing colorectal cancer, as it offers easy detection and resection of polyps. Cimetropium bromide...
P0194 ADHERENCE TO EUROPEAN SOCIETY OF GASTROENTEROLOGY ENDOSCOPY (ESGE) POLYPECTOMY GUIDELINES: AN IRISH EXPERIENCE

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Introduction: Colorectal cancer (CRC) accounts for up to 11% of all cancers in women and 14% of men in Ireland, and is the second most common cancer across sexes. The adenoma-carcinoma sequence of colorectal carcinogenesis lends itself to screening with the aim of complete excision of polyps. It has been estimated that incomplete resections of polyps are involved in 19–31% of interval cancers. ESGE guidelines state that polyps 5 mm or greater should be removed by snare resection. Non-adherence to guidelines was observed in 17.56% and 17.3% of procedures completed by medical and surgical trainees respectively. Medical (12.3%) and surgical (12.1%) consultants had a lower adherence rate.

Aims & Methods: The study included all patients who underwent colonoscopy in Tallaght Hospital (Dublin, Ireland) between January 2012 and December 2015 for any indication. From this, a list of patients with colonic polyps was compiled. Demographics and other information including number and site of polyps, resection and retrieval rates, method of resection and specialty of endoscopist were included.

Results: 11,400 colonoscopies were performed during the study period. To date, the records of approximately 7000 (61%) procedures have been reviewed. 2337 (22.5%) patients were identified with polyps, with 1027 females (43.4%), 1310 patients were identified with polyps, with 1027 females (43.4%), 1310 males (49.4%) and 120 patients (4.3%) with both female and male patients. The majority of polyps were left-sided, 873 (37.7%) were total dose of propofol, sedation associated complications (bradycardia, hypotension, hypoxia, apnoea), patient cooperation and patient satisfaction. Multivariate analysis was performed to correct confounding factors such as age and BMI.

Conclusion: Women awaken significantly faster compared to men with a time to eye opening of 23.1 ± 1.03 min. (p = 0.005) and time to complete orientation 9.14 ± 3.88 vs. 10.4 ± 3.17 min (p = 0.008) propofol dosage was not significantly different, with some trend towards more propofol per kg body weight in women (3.98 ± 1.81 mg versus 3.72 ± 1.75 mg, p = 0.232, n.s.).

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

References


P0195 WOMEN AWFAR FASTER THAN MEN AFTER EGG MONITORED PROPOFOL SEDATION - FIRST PROSPECTIVE OBSERVATIONAL STUDY OF GENDER DIFFERENCES IN PROPOFOL DOSES AND RECOVERY Times FOR COLONOSCOPY

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Introduction: Sedation for colonoscopy by using intravenous propofol has become standard in many Western countries. While gender-specific differences have been shown for general anaesthesia used in dentistry, no such data exist as yet for gastrointestinal endoscopy. In a prospective observational study at an Academic teaching hospital of Hannover Medical School 219 patients (108 women and 111 men) scheduled for colonoscopy were included. Sedation was performed using EEG monitoring during a constant level of sedation depth (D0 to D2) performed by trained nurses or physicians after bodyweight adjusted loading-dose.

Main outcome measures: Primary endpoint was the presence of gender-specific differences in wake-up time (time from end of sedation to eye - opening and the complete orientation of the patient); secondary outcome parameters analysed were total dose of propofol, sedation associated complications (bradycardia, hypotension, hypoxia, apnoea), patient cooperation and patient satisfaction.

Conclusion: Women awaken significantly faster compared to men with a time to eye opening of 23.1 ± 1.03 min. (p = 0.005) and time to complete orientation 9.14 ± 3.88 vs. 10.4 ± 3.17 min (p = 0.008) propofol dosage was not significantly different, with some trend towards more propofol per kg body weight in women (3.98 ± 1.81 mg versus 3.72 ± 1.75 mg, p = 0.232, n.s.).

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

References


P0196 EFFECT OF PREOPERATIVE COLONOSCOPIC TATTOOING USING BOTH SIDE INJECTION OF INDOCYANINE GREEN FOR IMPROVEMENT OF LYMPH NODE HARVEST IN COLORECTAL CANCER


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Introduction: Consensus guidelines suggest to assess at least 12 lymph nodes for adequate staging of colorectal cancer and the correlation between number of lymph nodes retrieved and the patient survival has been formerly reported. To facilitate the retrieval of lymph nodes, preoperative endoscopic tattooing to mark the site of the tumor has been proposed. In this study, we aimed to evaluate the effect of preoperative colonoscopic tattooing (PCT) using indocyanine green (ICG) for lymph node harvest in colorectal cancer. Additionally, we evaluated the effect of both side injection of ICG for improving the rate of adequate lymph node harvest.

Aims & Methods: 1023 patients who underwent curative resection for colorectal cancer between Jan 2012 and Aug 2016 at the Pusan National University Yangsan Hospital in Korea were retrospectively divided into the tattooing group and the non-tattooing group depending on whether PCT using ICG was done. Pathological findings and lymph node harvest were compared between the two groups.

Results: The rate of adequate lymph node harvest (retrieval of more than 12 lymph nodes) was similar in tattooing group and non-tattooing group (91.9% vs. 91.4%). However, when comparing the both side injection group and
nontattooing group, both side injection group was better result (96.2% vs. 91.1%, p = 0.029). 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 2.435, p = 0.047)

Conclusion: PRP 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.

P0197 THE EFFICACY OF COLD SNARE POLYPECTOMY IN ACHIEVING COMPLETE RESECTION OF SUBCENTIMETRE RECTAL POLYPS: A MULTICENTRE RANDOMISED CONTROLLED TRIAL (CRESCENT STUDY)

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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 electrocautery, thereby eliminating its burning effect. European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline suggests CSP for subcentimetre sessile polyps because of the absence of evidence despite lack of evidence for coagulation 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-inferiority trial conducted 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 agent undergoing hemodialysis were excluded, as well as those with inflammatory bowel diseases, polyps, 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 complete resection 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% C.I. of −0.5.2.7; p < 0.0001). Resection time, overall, was significantly shorter with CSP than with HSP (60 versus 83 s, respectively; p < 0.0001). Postoperative bleeding rate, defined as hemostasis occurring within 24 h after the HSP group (5.5%, 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.

References

P0198 EFFICACY OF PLATELET-RICH PLASMA (PRP) ON ENDOSCOPIC RESECTION TECHNIQUES: CLINICAL STUDY IN 15 PATIENTS

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Introduction: Prevention of complications secondary to endoscopic resection techniques (EMR or ESD) requires avoiding deep thermal damage and increase mucosal healing. Platelet-rich plasma (PRP) has demonstrated efficacy in pre-clinical endoscopic resection models [1]. The EndoPRP study was a prospective single-center study to assess the efficacy of PRP on endoscopic resection of large sessile lesions (larger than 35 mm). (Study registered at ClinicalTrials.gov: NCT02931149)

Aims & Methods: In the EndoPRP study 15 patients (males and females, aged 52–80) were assigned to receive PRP (6–15 mL): i) Endoscopic Shielding Technique (EST, n = 4), applying PRP as a shield after standard resection technique, or ii) Submucosal injection (SMI, n = 11), performing a submucosal injection of PRP prior to EMR or ESD. Patients were informed and accepted to participate with a written consent. PRP was obtained from a sample of patient’s blood (18–36 mL) drawn at the time of endoscopy. Patients underwent endoscopic follow-up for 4 weeks. The efficacy of PRP was assessed by the incidence of adverse events (delayed bleeding or perforation). Mucosal healing rate (MHR) was defined as a percentage of mucosal restoration after 4 weeks.

Results: Shielding technique with PRP was performed in 4 lesions at rectum (Æ 53.7 ± 20.6 mm, range 35–80 mm). Submucosal injection of PRP was used in 11 lesions (2 at antrum, 3 at rectum, and 8 at colon) (Æ 41.6 ± 9.6 mm, range 35–70 mm). Delayed bleeding occurred after EMR of 1 lesion (no required blood transfusion or endoscopic treatment; 6.6% of all lesions: 1 patient at EST group, 0 patients at SMI group). MHR was significantly higher in patients treated with SMI than EST (Æ 78.6%; p < 0.05).

Conclusion: PRP applied as a shield over the scar or as submucosal fluid cushion proved clinical efficacy in endoscopic resection of large lesions. Submucosal injection of PRP has showed better mucosal healing rate as comparison with shielding technique.

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

Reference
with a defined AE. Treatment options, including none required, were taken from SIVAs- defined lists and responses examined globally. Over 62% of providers were gastroenterologists and anesthesiologists. Local guidelines determined practice in most cases, and propofol and midazolam were the main sedation agents employed. The most common AEs reported were hypotension and bradycardia, with 9% and 4% of respondents, respectively, estimating each to occur during >10% of procedures. Mean provider time required to treat AEs ranged from 1.7 minutes for mild desaturation in Germany to 3.1 minutes for cardiac arrest in the USA. Accounting for interventions and provider time, the mean direct cost per range from EUR 12 for bradycardia in Germany to USD 3, 877 for cardiac arrest in the USA (Table). When costs were “fully loaded” these became EUR 39 and USD 19, 722, respectively. Although of low direct cost, bradycardia in Germany was reported to cause procedure termination or substantial delay in 3.8% of cases. In Euro countries, the median of mean direct costs for an AE was EUR 40 (IQR: 29–67). When costs of outcomes of AEs were included the median “fully loaded” cost reached EUR 301 (IQR: 115–738).

Table: Costs of select adverse events by country. FL: Fully-loaded (costs including hospital administration, time, inpatient stays, delays, and cancellations, but excluding legal costs)

<table>
<thead>
<tr>
<th>Country, currency</th>
<th>Hypotension</th>
<th>Bradycardia</th>
<th>Severe desaturation</th>
<th>Prolonged apnoea</th>
<th>Bradycardia apnoea</th>
<th>Cardiac arrest</th>
</tr>
</thead>
<tbody>
<tr>
<td>France, EUR</td>
<td>32; 173</td>
<td>23; 471</td>
<td>79; 1994</td>
<td>17; 131</td>
<td>53; 490</td>
<td>137; 11,936</td>
</tr>
<tr>
<td>Germany</td>
<td>25; 193</td>
<td>18; 212</td>
<td>92; 1268</td>
<td>12; 39</td>
<td>118; 307</td>
<td>274; 4765</td>
</tr>
<tr>
<td>Italy, EUR</td>
<td>41; 111</td>
<td>32; 98</td>
<td>59; 201</td>
<td>33; 93</td>
<td>43; 99</td>
<td>101; 1195</td>
</tr>
<tr>
<td>UK, GBP</td>
<td>69; 537</td>
<td>34; 606</td>
<td>93; 128</td>
<td>35; 362</td>
<td>80; 613</td>
<td>638; 894</td>
</tr>
<tr>
<td>US, USD</td>
<td>247; 841</td>
<td>465; 1459</td>
<td>529; 1715</td>
<td>85; 358</td>
<td>394; 1262</td>
<td>3877; 19,722</td>
</tr>
</tbody>
</table>

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. J. Davis: Jason Davis is an employee of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research. R. Weissbrod: Rachel Weissbrod is an employee of Medtronic D. Whitaker: David Whitaker 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: Jenifer Lightdale did not receive any remuneration for work on this research project. She has previously consulted for Medtronic Inc.

Reference

P0200 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD), KNIFE-ASSISTED SNARE RESSECTION (KAR) AND SPREAD TREATMENT: A WESTERN EUROPEAN EXPERIENCE IN SPAIN
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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 the impact of LM involvement on local recurrence when neoplasms without risk factors for lymph node metastasis are resected en bloc. We prospectively included 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 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 linfovascular 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 (58.7%); 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%: 2.8–23.3; 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/T1b (sm1); (c); (+); pV0M0 lesions (n = 44) were analysed separately, the LM distribution between LM0 (52.3%), 18 LM1 and 3 LMx (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: ER R0 resections were 9 times greater than that of KAR on an ESD “intention-to-treat” basis. R0 resections were associated with lower recurrence rates in comparison with R1/Rx resections. LM involvement increased the recurrence rate but without a statistical significance when it was the only pathological risk factor for recurrence and the specimen was resected en bloc.

References

P0201 ASSOCIATION BETWEEN SIZE, LOCATION AND HISTOLOGICAL CHARACTERISTICS OF COLORECTAL LATERALLY SPREADING TUMORS (LSTs)
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Introduction: LATERALLY SPREADING TUMORS (LSTs) 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 out1, 4.

Aims & Methods: To determine the association between size, location and the histological characteristics of colorectal LSTs by reviewing of 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 lesions4, and the World Health Organization (WHO) classification for the “sessile serrated adenomas” (SSAs)5. The regions of the colon were referred to
as either “proximal” or “distal” colon. Thereafter the division into six anatomical segments was considered (cecum, ascending, transversal, descending, sigmoid, and rectum).

**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 1.66 cm (range: 0.53-4.0 cm). The most common proximal colon was the most common segment (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 adenomas and adenocarcinomas 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 LSTs. Adenomas with high grade dysplasia were found to be larger than the other classifications. This association, however, is not observed between SSAs lesions. There is a 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:**

**P0202 SAFE AND SUCCESSFUL RESECTION OF DIFFICULT GI LESIONS USING A NOVEL SINGLE-STEP FULL-THICKNESS RESECTION DEVICE (FTRD)**

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**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 (eTFR) 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, Tubingen, Germany, is fused 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®, eTFR is performed using the hemoplastic 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:** eTFR 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. Diverticulum (n = 2.3%). 4. Polyps the cecal appendix (4.6%). 5. Submucosal lesions (n = 5.8%). 6. Early carcinoma (n = 7.1%). 7. Follow-up resection of a malignant polyp (n = 1.0%) had. 8. EFTR over endolip preparation (n = 2.3%). In 97% (58/60) of the interventions, the FTRD®-mounted endoscope reached the previously marked lesion and eTFR 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: Appendicectomy of the residual cecal appendix after eTFR of an appendicular adenoma (1/58.2%). Minor bleeding at the eFTR site (2/58.3%). eTFR performed accidently without proper prior deployment of the OTSC® (1/58.2%). There was no secondary perforation or eTFR-associated mortality.

**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, eTFR 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**

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**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 an 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 colonic 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 colo-rectal 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.

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P0208 SAFETY OF COLD SNARE COLON POLYPECTOMY IN PATIENTS ON ANTIITHROMBOTIC MEDICATION
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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 & Method: 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 submucosal invasion and suspected of being cancerous 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 polyps that had been taken out without interruption or discontinuation of antithrombotic medication before CSP (antithrombotic group), and 1917 (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 antplatelet therapy (DAPT) in 13 patients with 18 polyps, antplatelet agents other than clopidogrel in 17 patients with 68 polyps, anticoagulant agents in 20 patients with 56 polyps, and antplatelet 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 0.54% (3/549) of the interventions in the antithrombotic group and in 0.10% (2/1917) of those in the non-antithrombotic group, showing no significant difference (p = 0.08). Endoscopic hemostasis was successful in all cases of bleeding, without requiring blood transfusion. As for the 3 cases of post-CSP bleeding in the antithrombotic group, the specific antithrombotic medication being used was aspirin in 1 patient with 1 polyp (0.88%, 1/113), and aspirin and clopidogrel a patient with 2 polyps (11.1%, 2/18). No post-CSP bleeding occurred in patients on other antplatelet 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% with clipping vs. 0.34% without clipping; p = 0.55).
Conclusion: CSP is a safe procedure even in patients on antithrombotic medication, provided the rate of bleeding after CSP was not high compared with that after biopsy 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 management.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0207 OPTICAL ENHANCEMENT FOR THE IN VIVO PREDICTION OF POLYP HISTOLOGY IN PATIENTS ON ANTIITHROMBOTIC MEDICATION
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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 PIVI 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 PIVI criteria. In this study we aimed to assess whether OE can accurately predict the histology of diminutive colorectal polyps according to the ASGE PIVI criteria.
Methods: In this study we aimed to assess whether OE can accurately predict the histology of diminutive colorectal polyps according to the ASGE PIVI criteria.
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 98.5%. 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 PIVI thresholds for expanded training 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.

References
1. Morelli MS et al. Yield of the second surveillance colonoscopy based on the results of the index and first surveillance colonoscopies. Endoscopy 2016; 48: 114–121
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.

**Aims & 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 in all three dimensions. We evaluated loop formation such as N loop, alpha loop, reverse alpha loop, with the 3D imaging monitor. In the second part of the study, 5 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 adequately rotated with the colonoscope configuration. The average tip deviation 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 a good 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 FBG sensor would be a novel technique for identification of colonoscopy shape.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
permeability process after IRE by providing the real-time images. Additionally, Morphology assessment for apoptosis assessment method, included Annexin V FITC and PI staining. This MP probe 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
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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 2008-2016 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 vs. flat 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 advanced adenoma or carcinoma. Of the EMR success group, 4/95 were 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 <.05. *Increase in OR for each increase in year. **p-value < 0.05 considered statistically significant.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>1.41*</td>
<td>1.04–1.98</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>0.04–110</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 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
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Introduction: Though numerous research has enabled decreased of the bowel preparation solution volume, it is still a major complaint of patients preparing

colonscopy. There have been studied that additional administration of laxatives could lessen the amount ofavenous 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 prucalopride while prepe for quality of bowel cleansing while controlled for colonscopy and patient compliance. Two hundred patients were prospectively enrolled. Patients referred for colonscopy were divided into group A (the split dose 2-L PEG-Asc) and group B (1-L PEG-Asc+prucalopride) randomly. During colonscopy, each patient’s bowel preparation quality was evaluated with The Boston Bowl Preparation Scale (BBPS) and Aronchick 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 prucalopride. 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 (7.65 ± 1.27 vs 7.52 ± 1.40, p = 0.586) and APS scales (93.8 ± 15.9% 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.

P0213 IMPROVING SURVEILLANCE FOLLOW UP RATES AFTER COLONOSCOPY ENDOSCOPIC MUCOSAL RESECTION: A QUALITY IMPROVEMENT PROJECT
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Introduction: Endoscopic mucosal resection (EMR) is an effective and safe treatment for large (>20mm) laterally spreading colorectal lesions. Although colon EMR has been established as a minimally invasive technique for treatment of large colorectal lesions, risk of adenoma recurrence is the main limitation. Current guidelines recommend first follow-up at 3–6 months; however, there are no well-designed prospective-studies published establishing an optimal follow-up. The aim of this study was to conduct a quality improvement initiative aimed at increasing compliance in SC1 by understanding the current screening process and developing strategies to standardize our endoscopy center practices.

Aims & Methods: Single tertiary referral center quality improvement project started in January 2017 and currently still in progress. We present here the interim data. Consecutive patients who had undergone or would have EMR of lesion ≥20mm were eligible for inclusion. The process of following-up patients after EMR was divided at two levels: A dedicated team member generated a monthly report identifying patients who underwent colon EMR using our endoscopy procedure documentation program. The appropriate timeline for SC1 for each patient who underwent colon EMR was identified and orders and scheduling for the colonoscopy follow-up were carried out. Evaluation of follow-up: A dedicated team member reviewed the status of patients who underwent colon EMR six months prior to the start of the QI study. If patient did not show up on their scheduled follow-up, phone calls were placed to contact the patients. Patients who had followed-up with their local gastroenterologists were recorded. All the data in intervention group was compared retrospectively with nonintervention group who were not tracked through quality improvement process. Mean follow-up time and follow-up rate (%) at 6–9 months at SC1 after index EMR was compared between the two groups.

Results: Per-project 25 patients included in intervention group were compared to 60 patients in the nonintervention group. Mean age was 62 years in intervention group and 66 years in non-intervention group (p = 0.04). There were no differences in distribution in size of lesion, gender, EMR site, and polyp histology between two groups (Table 1). The mean follow-up time in intervention group was 8.2 months (IQR 2.6) and nonintervention group was 10.4 months (IQR 9.1). There was increase in rate of 6–9 months follow-up in intervention group when compared to the nonintervention group (88%, 95% CI [0.80%-0.94%] vs 64%, 95% CI [0.54%-0.73%]) (Table 1).

Table 1: Demographic, clinical characteristics, follow up rates

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 25)</th>
<th>Non-intervention group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Mean (SD)</td>
<td>62 (8.7)</td>
<td>66 (10.5)</td>
</tr>
<tr>
<td>Sex, Male (%)</td>
<td>38% (10)</td>
<td>58% (35)</td>
</tr>
<tr>
<td>Size of polyp(mm)</td>
<td>35 (18)</td>
<td>30 (12)</td>
</tr>
</tbody>
</table>

(continued)
Colon EMR follow-up rate

Mean (±SD) 7.3 months (±1.4) 7.3 months (±1.6)

Follow-up rates

Median(range) 7.3 months (6–15 months) 7.3 months (6–16 months)

Mean (±SD) 8.2 months (2.6) 10.4 (9.1)

Colon EMR follow-up rate of 6–9 months, % (n)

CI [0.58–0.84%] CI [0.54–0.73%]

Variables Intervention group (n = 25) Non-intervention group (n = 60)

Site of polyp resection

Rectum 8% (2) 5% (3)
Sigmoid 4% (1) 7% (4)
Recto-sigmoid 0% 2% (1)
Descending colon 0% 3% (2)
Transverse colon 15% (4) 12% (7)
Hepatic flexure 15% (4) 8% (5)
Ascending colon 25% (6) 37% (22)
Mid ascending colon 0% 5% (3)
Cecum 23% (6) 13% (8)
Cecum with appendicle orifice 8% (2) 0% (0)
Ileocecal valve 4% (1) 8% (5)

Polyp histology

Sessile serrated adenoma 23% (6) 30% (18)
Tubular adenoma 35% (9) 35% (21)
Tubular adenoma with HGD 8% (2) 2% (1)
Tubulovillous adenoma 31% (8) 32% (19)
Tubulovillous adenoma with HGD 4% (1) 0% (0)
Adenocarcinoma 0% 2% (1)

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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.
Abstract No: P0215

Table 1: T1 early rectal cancer features, indications to endoscopic full-thickness resection, and follow-up.

<table>
<thead>
<tr>
<th>#</th>
<th>Rectal site</th>
<th>Endoscopic features</th>
<th>Positive Ume's criteria after en bloc EMR</th>
<th>Indication to EFTR</th>
<th>Pre-EFTR staging</th>
<th>Histology following EFTR</th>
<th>Follow-up after EFTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Distal</td>
<td>30 mm, Is, Kudo V, negative lifting sign</td>
<td>Tumor budding, excision margin, width of submucosal invasion</td>
<td>unfit for surgery (ASA IV)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS, and CT negative at 3 and 12 months; Endoscopy and EUS negative at 18 months.</td>
</tr>
<tr>
<td>2</td>
<td>Distal</td>
<td>20 mm, Isp, Kudo III, negative lifting sign</td>
<td>Tumor budding, Haggitt's level, excision margin, depth and width of submucosal invasion</td>
<td>refusing surgery (ASA II)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
<tr>
<td>3</td>
<td>Distal</td>
<td>18 mm, Is, Kudo III, negative lifting sign</td>
<td>Haggitt's level, excision margin, depth and width of submucosal invasion</td>
<td>refusing surgery (ASA III)</td>
<td>T0, N0</td>
<td>R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
<tr>
<td>4</td>
<td>Proximal</td>
<td>0.6 mm, Is, Kudo V, negative lifting sign</td>
<td>Haggitt's level, excision margin</td>
<td>unfit for surgery (ASA IV)</td>
<td>T1, N0</td>
<td>R0, full-thickness resection; histology positive for adenocarcinoma</td>
<td>Endoscopy, EUS and CT negative at 6 months. Patient died for severe cardiac disease at 8 follow-up month.</td>
</tr>
<tr>
<td>5</td>
<td>Distal</td>
<td>0.7 mm, Is, Kudo IV, negative lifting sign</td>
<td>Low tumor differentiation grade, excision margin</td>
<td>unfit for surgery (ASA IV)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
<tr>
<td>6</td>
<td>Distal</td>
<td>18 mm, Is, Kudo III, negative lifting sign</td>
<td>Tumor budding, excision margin, width of submucosal invasion</td>
<td>refusing surgery (ASA III)</td>
<td>T0, N0</td>
<td>R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months.</td>
</tr>
</tbody>
</table>

P0216 UNTUTORED LEARNING CURVE ANALYSIS FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: PREDICTIVE FACTORS FOR COMPLEX TECHNIQUE.


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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 lessions 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 clinic characteristics of the patient, the morphology of the lesion and factors related to the technique were collected. A complex technique

Abstract No: P0216


SEX, n(%) Male 16 (59.2) 11 (40.8) 0.910 0.95 (0.39-2.31) Female

AGE, n(%) <70 years old ≥70 years old 17 (63) 10 (37) 1.00 (0.81-1.26) 1.00 (0.81-1.26)

SMOKER, n(%) No Yes Former smoker 12 (44.4) 1 4 (14.8) 5 (18.5) 0.619 0.619 1.00 (0.38-2.52) 1.00 (0.38-2.52)

ANTICOAGULANT/ANTIAGGREGANT/COAGULATION DEFICIT, n(%) Yes No 22 (81.4) 5 (18.6) 0.015 0.015 70 (0.23-2.07) 70 (0.23-2.07)

Body Mass Index (obese), n(%) <30 ≥30 22 (81.4) 5 (18.6) 0.532 0.532 1.82 (0.55-6.00) 1.82 (0.55-6.00)

Body Mass Index (overweight), n(%) <25 ≥25 10 (37) 17 (63) 0.423 0.423 1.36 (0.56-3.33) 1.36 (0.56-3.33)

ANESTHETIC RISK, n(%) Low (ASA I-II) High (ASA III) 18 (66.6) 9 (33.3) 0.637 0.637 1.34 (0.53-3.43) 1.34 (0.53-3.43)

PREVIOUS COLORECTAL SURGERY, n(%) Yes No 25 (92.6) 2 (7.4) 0.094 0.094 0.418 (0.09-1.99) 0.418 (0.09-1.99)

CO2 insufflation, n(%) Yes No 15 (55.6) 12 (44.4) 0.002 0.002 6.38 (1.20-33.57) 6.38 (1.20-33.57)

Size, n(%) <35 mm ≥35 mm 10 (37) 17 (63) 0.004 0.004 4.56 (1.81-11.46) 4.56 (1.81-11.46)

LOCATION, n(%) Right Colon Left Colon Rectum Morphology, n(%) P = 0.05 17 (63.5) 5 (18.5) 5 (18.5) 0.932 0.342 1.05 (0.3-3.2) 0.56 (0.1-1.8) LST-G LST-NG No LST 16 (59.3) 9 (33.3) 2 (7.4) 0.188 0.587 1.21 (0.8-5.3) 0.44 (0.06-3.4) SEVERE FIBROSIS, n(%) No Yes 14 (51.9) 13 (48.1) 0.001 0.001 11.61 (3.78-35.69) 11.61 (3.78-35.69)

FATTY TISSUE, n(%) No Yes 11 (40.7) 16 (59.3) 0.030 0.030 5.78 (1.13-29.53) 5.78 (1.13-29.53)

Time dissection Mean, min (range) 180 (80-280) 131.9 (45-290) not applicable

Contact E-mail Address: jorgevasquez81md@gmail.com
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 coffee [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 [59.3% vs. 22.2%; OR 5.99 (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), 5.76 in the presence of fatty tissue in the submucosa (p = 0.035) and 5.74 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.

PO217 PERSISTENT PAIN AFTER COLONIC ENDOSCOPIC MUCOSAL RESECTION: PREDICTORS, A MANAGEMENT ALGORITHM AND OUTCOMES

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Introduction: Endoscopic mucosal resection (EMR) of large (>20 mm) laterally spreading colon lesions (LSL) 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 recovery period or the triggers that should alert the practitioner to a more serious complication.

Aims & Methods: We aimed to characterise potential predictors for PP and develop a simple and effective management algorithm for patients with PP based on the need for analgesics in recovery. Data on consecutive patients with a LSL referred for EMR at a single, tertiary referral centre were included. Patient and lesion characteristics and peri-procedural data were prospectively collected. Standard post EMR care included 2 hours in first stage recovery followed by 1 hour in 2nd stage recovery where clear fluids were given and discharge after if the patients were well. Persistent post-procedural pain (PP) was graded from 0 to 10 using a Visual Analogue Scale (VAS). If PP occurred >5 minutes, 1 gram of acetaminophen was administered parenterally and outcomes were monitored. If pain settled the patient was transferred to second stage recovery after medical review. PP >30 minutes lead to clinical review and an upgrade of analgesics to fentanyl, with a starting dose of 25 micrograms (mcg) up to a maximum of 100mcg. Investigations, admission and interventions for PP were recorded.

Results: 166 patients with 166 lesions were included between February and April 2017. 34/166 (20.5%) of patients had PP requiring intervention (median VAS 5, IQR 3–6). 27/34 (79.4%) had resolution of pain with acetaminophen only and 20/34 (20.5%) of patients had PP requiring intervention (median VAS 5, IQR 3–6). 27/34 (79.4%) had resolution of pain with acetaminophen only and 20/34 (20.5%) of patients had PP requiring intervention (median VAS 5, IQR 3–6). 27/34 (79.4%) had resolution of pain with acetaminophen only and 20/34 (20.5%) of patients had PP requiring intervention (median VAS 5, IQR 3–6).

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.

PO218 QUALITY OF SINGLE-SESSION COLONOSCOPIC EXAMINATIONS INTENDING TO REMOVE ALL NEOPLASTIC POLYPS USING COLD POLYPECTOMY IN OUTPATIENT SETTING: RESULTS FROM CLINICAL PRACTICE DATA OF SINGLE CANCER CENTER HOSPITAL IN JAPAN

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Introduction: Some high-quality, large-scale cohort studies proved removals of colorectal neoplasms achieved prevention of colorectal cancer incidence and deaths. We introduced a strategy of removing all neoplastic polyps in single session colonoscopic examinations using cold polypectomy was started.

Aims & Methods: The aim of this retrospective study was to investigate about achievement of colorectal polyp remove in our clinical practice setting. Scheduled colonoscopic examinations for 40–79 years outpatients who had at least one colorectal neoplasm between January 2015 and December 2016 were collected from our endoscopic data base. Exclusion criteria were as follows: patients who had colorectal neoplasm larger than 20 mm, pre-examination of colorectal surgery or endoscopic submucosal dissection, inflammatory bowel disease, familial adenomatous polyposis, uncontrolled malignancies, by trainee endoscopists (<500 colonscopies), no agreements of polyp removal, and/or patients with continuation of anti-thrombotic agents. Outcome measurements were polyp removal rate (per-lesion analysis), complete polyp removal rate (per-patient analysis) and complications. Proportions of each endoscopic removal method according to size were also analyzed.

Results: A total of 2527 patients (mean age 66.8 ± 7.99 females) with 8203 colorectal neoplasms (CRNs) (7675 adenomas, 423 serrated polyps and 105 Tis and T1 cancers) who met inclusion and exclusion criteria were analyzed. Mean number of CRNs per patients was 3.2. Mean size was 4.7 (±2.9) mm. Polyp removal rate (per-lesion) and complete polyp removal rate (per-patient) were 97.0% (7955/8203) and 94.7% (2394/2527), respectively. Post-polypectomy bleeding requiring endoscopic hemostasis occurred in 7 patients (0.27%) and all origins of bleeding were endoscopic mucosal resection (EMR) and hot snare polypectomy (HSP). Post electrocoagulation syndrome requiring admission was occurred in one patient (0.04%) after pre-cutting EMR. Mean procedure time was 27.4 (±13.3) min. Proportions of each endoscopic removal method according to size were presented in an attached table. In 1–4 mm CRNs, both cold snare polypectomy (CSP) (51.8%) and cold forces polypectomy (CFP) (45.8%) for 1–4 mm CRNs were main methods. In 5–9mm CRNs, CSP was a leading method (73.8%) and EMR was the second one (24.1%). CRNs larger than 10 mm were almost removed by EMR (94.4%).

Abstract No: P0217

Table 1: Baseline and lesion characteristics. Comparison between the patients with and without pain post endoscopic mucosal resection of a large (>20 mm) laterally spreading lesion. SD: standard deviation, IQR: interquartile range, *left colon: distal to hepatic flexure, †using thermal therapy.

<table>
<thead>
<tr>
<th></th>
<th>No pain (n = 132)</th>
<th>Pain (n = 34)</th>
<th>P-value</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years, mean, SD)</td>
<td>69.2 (10.6)</td>
<td>69.6 (10.7)</td>
<td><strong>.944</strong></td>
<td></td>
</tr>
<tr>
<td>Sex (%) Male Female</td>
<td>73 (55.3) 59 (44.7)</td>
<td>14 (41.2) 20 (58.8)</td>
<td><strong>.141</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lesion characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size (mm, %) 20–44 mm ≥45 mm</td>
<td>103 (76.0) 29 (22.0)</td>
<td>18 (52.9) 16 (47.1)</td>
<td><strong>.003</strong></td>
<td><strong>.012</strong></td>
</tr>
<tr>
<td>Location (%) Left colon* Right colon</td>
<td>53 (40.2) 79 (59.8)</td>
<td>17 (30.0) 17 (50.0)</td>
<td><strong>.300</strong></td>
<td></td>
</tr>
<tr>
<td>Paris classification (%) 0-1a 0-1b 0-1la 0-1la + Is Others</td>
<td>6 (4.5) 84 (63.6) 40 (30.3) 2 (1.5)</td>
<td>1 (2.9) 14 (41.2) 16 (47.1) 3 (8.8)</td>
<td><strong>.022</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Procedural data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submucosal fibrosis (%)</td>
<td>38 (28.8)</td>
<td>9 (26.5)</td>
<td><strong>.789</strong></td>
<td></td>
</tr>
<tr>
<td>Intra-procedural bleeding requiring endoscopic control† (%)</td>
<td>59 (44.7)</td>
<td>23 (67.6)</td>
<td><strong>.017</strong></td>
<td>0.042</td>
</tr>
<tr>
<td>Intra-procedural perforation (%)</td>
<td>6 (4.5%)</td>
<td>0 (0%)</td>
<td>.348</td>
<td></td>
</tr>
</tbody>
</table>
Disclosure of Interest: All authors have declared no conflicts of interest.

**Conclusion:** In our clinical practice setting, the polyp removal rates were satisfactory when measured in single session endoscopic examinations using cold polypectomy.

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

**Introduction:** Colonoscopy plays a key role in the prevention and diagnosis of colorectal cancer (CRC), and the quality of its influences intervention cancer. However, we have little information on compliance with quality standards in Spain.

**Aims & Methods:** Knowing quality indicators fulfillment may lead to apply measures to improve the efficiency in the colonoscopy. Hence the aim of this study was to compare the quality indicators of colonoscopy in centers of Spain. A total of 6912 colonoscopies performed between January and November 2016 were prospectively included in the QUALISCOPIA project, an observational, multicenter and prospective study, developed in 12 centers in Spain. The exclusion criteria were patients with diagnosis of colorectal cancer or adenomas in the last 6 months, incomplete excision or post-adenoma excision, treatment of colon stenosis, abdominal or rectal mass, inflammatory bowel disease and hereditary cancer syndrome.

**Results:** 51.9% (3586) patients were men and the median age was 61 years. According to the colonoscopies indications, thirty one percent (2971) of the patients presented gastrointestinal symptoms, 20.3% (1398) were admitted due to post-polypectomy surveillance, 28.3% (1940) presented positive fecal immunochemical test (FIT+), and 8.4% (578) due to direct screening. 70.4% (4869) of the examinations were performed in the morning shift. Respecting the bowel preparation, 48.4% used polyethylene glycol (PEG) 2L, 27.5% (1902) used sodium picosulfate/magnesium citrate, and 19.5% (1347) PEG4L. Digital chromoendoscopy was used for lesion seen in 4.7% (322) and panchroma in 9.1% (7). CO2 was used in 42% (2906) of the procedures. Colon cleansing was good-excellent in 80.1% (4995). The most used drugs for sedation were propofol in 63.9% (4417), midazolam in 44.1% (3045) and fentanyl in 31.1% (2149). In 86.1% (6181) of the examinations the use of sedation was recommended, in 42% (2906) of the procedures. Colon cleansing was good-excellent in 80.1% (4995). 92.8% (6260) of the colonoscopies were performed under sedation, and the gastroenterologist was responsible for it in 80.1% (4995). The most used drugs for sedation were propofol in 63.9% (4417), midazolam in 44.1% (3045) and fentanyl in 31.1% (2149). Olympus was used in 69.2% (4732), Pentax in 21.8% (1492) and Fuji in 8.3% (569). Polyps were found in 50.9% (3515) of the procedures, and CRC was found in 4.1% (281). The total number of adenomas was 6249, and the total number of tissue samples was 224. The adenomas detection rate (ADR) was 39.6%. The sessile and traditional serrated polyps detection rate (SDR) was 2.2%. And for advanced adenomas, detection rate (AADR) was 25.1% and for colorectal cancer 4.1%.

**Conclusion:** In Spain, there is good compliance with the quality indicators of colonoscopies.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
**Results:** According to endoscopic or pathologic judgment resection was complete in 40 or 30 patients, respectively. During hospital follow-up (12–14; median 4 days) abdominal pain, fever or local peritonitis were noted in 6 and bleeding in 3 patients (hypotension in 1) with antibiotics/transfusions/surgery needed in 4/0 patients. There was no hospital mortality. Among those with histologic incomplete resection (n=21), surgery or FTR was performed in 5 patients, endoscopic follow-up is pending in 7 and revealed no residual neoplasia in 9. Among those with cancelled ESD or endoscopic incomplete resection (n=11), surgery or FTR was performed in 5, endoscopic follow-up is pending in 2 and revealed no residual neoplasia.P.

**Conclusion:** After appropriate training, even in low volume European case series ESD in the colorectum appears to be safe and partially effective.

**Disclosure of Interest:** G. Kleber: Activity as tutor in ESD learning courses sponsored by Olympus Medical Systems, Hamburg, Germany

All other authors have declared no conflicts of interest.

**Reference**

Dessain A. et al. 2017; *Virchows Arch* 470:165

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**P0222 CLINICAL USABILITY QUANTIFICATION OF A REAL-TIME POLYP DETECTION METHOD IN VIDEOCOLONOSCOPY**

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**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. Coloscopy 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 characterization, and (ii) introduction of spatio-temporal coherence. The former studies whether the combination of different types of information may lead to improve system performance whereas the latter fosters stability in the position of the detector output for consecutive frames. The learning stage of the method used 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 CF-H190 at Hospital Clinic, Barcelona. Performance was evaluated using two groups of metrics: (i) standard image/video metrics: Precision, Recall and F1-Score (ii) ad-hoc clinical metrics on an active learning method. We base the adaptation to video analysis on two.

**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.

**Method**

<table>
<thead>
<tr>
<th>Prob</th>
<th>Pre</th>
<th>MNFP</th>
<th>Proc</th>
<th>Rec</th>
<th>F1</th>
<th>RT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texture (Local Binary Patterns [3])</td>
<td>100% 162 ms 0.27</td>
<td>99.88%</td>
<td>84.96%</td>
<td>32.22%</td>
<td>45.9 [1.8 sec]</td>
<td></td>
</tr>
<tr>
<td>Shape (Haar features)</td>
<td>100% 21 ms 0.6</td>
<td>39.14%</td>
<td>42.56%</td>
<td>40.78%</td>
<td>78.3 [1.1 sec]</td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>100% 185 ms 1.0</td>
<td>30.72%</td>
<td>51.00%</td>
<td>38.34%</td>
<td>17.4 [0.7 sec]</td>
<td></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 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

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**P0223 RESECTION AND DISCARD/DIAGNOSE AND DISREGARD STRATEGY FOR COLONIC POLYPS: ARE WE READY TO START IT?**


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**Introduction:** The use of Narrow Band Imaging (NBI) technology for in vivo histological prediction of colonic polyps presents high accuracy in Referral Centers, particularly for diminutive polyps, which could be managed by the “resect and discard” strategy and, for sigmoid and rectum polyps, the “diagnose and disregard” strategy. However, the applicability of this practice in Community Hospitals still needs to be determined.

**Aims & Methods:** We aimed to determine the accuracy of NBI in predicting histology, according to NICE and WASP classifications, in a Center without previous NBI experience. This was a prospective study including patients submitted to colonoscopy between June 2016 and July 2017. Polyps characteristics: location, size, morphology (Paris Classification), NICE/WASP classification (hyperplastic, sessile serrated, adenoma, invasive carcinoma) and degree of confidence (low: <90% vs. high ≥90%). Comparison between NBI classification and histology SPSS 23.

**Results:** 163 polyps included (71 patients); mean polyp dimension of 6.1 mm (61.3% ≤ 5 mm); 91.4% sessile polyps; 62.6% on the left colon. Polyps classification according to NICE/WASP vs. histology: hyperplastic 49.7% vs. 42.9%, sessile serrated polyps 4.9% vs. 9.8%, adenoma 44.2% vs. 43.6%; carcinoma 1.2% vs. 0%; inflammatory reaction on histology – 3.7%. Adenoma diagnosis using NICE/WASP classification presents an accuracy, sensitivity, specificity, positive predictive value and negative predictive value of 80.9%, 78.1%, 84.2%, 85% and 77.1%, respectively. For left lesions ≤5mm (n=61) the accuracy and negative predictive value were of 81.2% and 82.3%, respectively, with 79.4% high confidence classifications. Multivariate analysis showed that high confidence prediction and ≥3 polyps/exam had a significant association with correct NBI classification (p < 0.05).

**Conclusion:** NBI utilization by inexperienced endoscopists presented moderate acuity in histological prediction. Despite promising results, acuity and confidence levels were lower than the thresholds recommended in guidelines (≥90%). These results justify implementing additional training and monitoring.

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

**References**


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

**References**


P0224 THE EFFICACY AND SAFETY OF JUMBO FORCEPS BIOPSY USING NARROW-BAND IMAGING ENDOSCOPY IN PATIENTS WITH DIMINUTIVE POLYPS

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Introduction: Cold forceps 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 forceps biopsy using narrow-band imaging endoscopy in patients with diminutive polyps. In addition, we evaluated the factors related to one-bite resection. This is a multicenter, prospective, single-arm observational study conducted at 11 institutes of the National Hospital Organization between January 2015 and September 2016. Patients aged 20 to 75 years with diminutive polyps were enrolled in this study. When lesions were found, we used magnification endoscopy with narrow-band imaging (NBI) in all the cases. CFP was performed until no polyps were visible under magnified endoscopy with NBI. We evaluated the patients’ characteristics, clinicopathological features of the polyps, adverse events, and complete resection rates of the lesions. Additionally, we studied the factors related to one-bite polypectomy 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 (87.5%), 0-Ia lesions in 65 (6.4%), 0-Ib lesions in 63 (6.2%) and 0-Ip 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 min, 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 (<3 mm; 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 forceps biopsy and magnified endoscopy with NBI. In addition, we were able to do one-bite polypectomy for more smaller polyps (<3 mm). Jumbo forceps 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.

References

P0225 PERIOPERATIVE MANAGEMENT OF ORAL ANTICOAGULANTS WITHOUT HEPARIN BRIDGING THERAPY FOR PATIENTS UNDERGOING ENDOSCOPIC SURGERY: A PILOT STUDY

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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)1-3. However, HBT is actually related to a high frequency of delayed bleeding4,5. Aims & Methods: Our aim is to analyze bleeding and coagulation markers in the perioperative period in patients with 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 perioperative 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 a history 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 developed 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 HBT 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. 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.

### TABLE 1: \( \text{FIT}^\dagger \) and Post-polypectomy surveillance

<table>
<thead>
<tr>
<th>Post-polypectomy surveillance</th>
<th>% (n) 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>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>1.8 (10/550)</td>
<td>3.9 (1.4–10.3)</td>
<td>0.009</td>
<td>5.1 (1.6–15.6)</td>
</tr>
<tr>
<td>Post-polypectomy surveillance</td>
<td>0.5 (6/1275)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

\( \dagger \): 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.

### TABLE 1 Continued

<table>
<thead>
<tr>
<th>ADR</th>
<th>% (n)</th>
<th>OR (95%CI)</th>
<th>p-value</th>
<th>aOR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<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>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FIT+</td>
<td>54.0 (928/1718)</td>
<td>3.0 (2.7–3.4)</td>
<td>&lt;0.001</td>
<td>3.0 (2.6–3.4)</td>
<td>0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>31.6 (174/550)</td>
<td>1.2 (1.0–1.5)</td>
<td>0.085</td>
<td>1.4 (1.1–1.7)</td>
<td>0.005</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>28.0 (79/283)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDR</td>
<td>Post-polypectomy surveillance</td>
<td>4.2 (53/1275)</td>
<td>3.5 (2.6–5.3)</td>
<td>&lt;0.001</td>
<td>3.4 (2.2–5.3)</td>
</tr>
<tr>
<td>FIT+</td>
<td>1.9 (32/1718)</td>
<td>1.5 (0.9–2.5)</td>
<td>0.091</td>
<td>1.5 (0.9–2.5)</td>
<td>0.094</td>
</tr>
<tr>
<td>Direct screening</td>
<td>3.3 (18/550)</td>
<td>2.7 (1.5–4.8)</td>
<td>&lt;0.001</td>
<td>2.8 (1.6–5.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>1.2 (35/232)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AADR</td>
<td>Post-polypectomy surveillance</td>
<td>23.1 (294/1275)</td>
<td>2.0 (1.7–2.4)</td>
<td>&lt;0.001</td>
<td>1.8 (1.5–2.2)</td>
</tr>
<tr>
<td>FIT+</td>
<td>36.8 (632/1718)</td>
<td>4.0 (3.4–4.6)</td>
<td>&lt;0.001</td>
<td>3.9 (3.3–4.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>14.9 (82/550)</td>
<td>1.2 (0.9–1.5)</td>
<td>0.177</td>
<td>1.3 (1.1–1.8)</td>
<td>0.023</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>12.8 (362/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRCDR</td>
<td>Digestive symptoms</td>
<td>5.8 (165/2832)</td>
<td>13.1 (5.8–29.6)</td>
<td>&lt;0.001</td>
<td>11.6 (4.7–28.7)</td>
</tr>
</tbody>
</table>

(continued)
Conclusion: SpyGlass cholangioscopy system can be safe and useful for definite diagnosis with high accuracy in patients with indeterminate biliary lesions, and successfully guided stone therapy. Further prospective multicenter 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

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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, indication, 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 bile duct 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 cholecdocholithiasis (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 = 29). 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

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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 operated at our center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedures related details and adverse events was recorded and analyzed.

Results: A total of 304 procedures were performed in 236 patients, including 108 cases (45.5%) with Billroth II gastrectomy, 45 cases (19.1%) with Billroth I gastrectomy, 52 cases (22.0%) with hepaticoduodenostomy, 18 cases (7.6%) with esophagegastrotomy and 13 cases (5.5%) with Roux-en-Y reconstruction. The most common indication was cholelithiasis (58.1%, 137/236), including 91.3% (126/138) for Billroth II gastrectomy, 94.5% (52/55) for Billroth I gastrectomy, 89.9% (71/79) for hepaticoduodenostomy, 100% (19/19) for esophagogastrotomy and 61.5% (8/13) for Roux-en-Y reconstruction. The clinical success rate was 88.2% (268/304). 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 = 25). The adverse event rate was 7.2% (17/236).

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 PROSPECTIVE SCORE ANALYSIS

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Introduction: Risk factors for colorectal adenoma recurrence after Endoscopic Mucosal Resection (EMR) such as size ≥20 mm, high grade dysplasia, use of argon plasma coagulation (APC) and intraprocedural bleeding (IPR), 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 evaluate the efficacy of the newer 190 colonscopes versus standard 180 colonscopes for complete resection of lateral spreading lesions (LSL) ≥20 mm. 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 ≥20 mm 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.
Disclosure of Interest:

and retrieval nets. Normal saline was used for intra-procedural irrigation and subsequently underwent necrosectomy. The conventional technique using a diagnostic approach was the only variable associated with treatment success (OR = 60.4, p = 0.02) when adjusted for patient demographics, lab parameters and disease/WON characteristics.

Conclusion: A structured, algorithmic approach to endoscopic necrosectomy results in successful treatment outcomes.

Disclosure of Interest: R. Hawes: 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.

P0234 WALLED-OFF NECROSIS (WON): OUTCOMES OF AN ALGORITHMIC APPROACH TO NECROSYECTOMY

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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. The aim of this study was to compare the clinical outcomes of patients with WON treated by conventional EN versus an algorithmic approach. We performed a prospective study of 2078 cases under- going diagnostic and therapeutic ERCP at five Japanese institutions between April 2015 and May 2016. Exclusion criteria were active pancreatitis, cholejunctunostomy, inability to approach a papilla, and inspection aimed at only the pancreatic duct (PD). WON associated with RAP underwent endoscopic minor sphincterotomy combined with dorsal duct stenting (Bi-ESCS). Cases with naıve 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) was associated with PEP. Multivariable logistic regression analysis revealed that the algorithmic approach was the only variable associated with treatment success (OR = 60.4, p = 0.02) when adjusted for patient demographics, lab parameters and disease/WON characteristics.

Conclusion: A structured, algorithmic approach to endoscopic necrosectomy results in successful treatment outcomes.

Disclosure of Interest: 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

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Introduction: Pancreas divisum (PD) is the most common congenital anomaly of the pancreas. Most PD patients were asymptomatic, but a few may present with 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 from developing CP. Unfortunately, to date, most of the studies have been concentrated on adults. Researches of PD in children are rare.

Results: A total of 227 pediatric 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 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 PD-related studies have been concentrated on adults. Researches of PD in children is rare.

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 minor sphincterotomy combined with dorsal duct stenting (Bi-ESCS). Cases of incomplete PD underwent bi- papilla endoscopic sphincterotomy combined with dorsal duct stenting (Bi-ESCS). ERCP-related data, complications and other relevant data were collected for a mean time follow up of 14.2 ± 4.7 months. The primary outcome was successful endoscopic ductal clearance of the minor papilla. The secondary outcomes were changes in pain scores and pain frequency. The primary outcome was achieved in 100% (21/21) of cases.

Conclusion: A structured, algorithmic approach to endoscopic necrosectomy results in successful treatment outcomes.

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

P0236 ENDOSCOPIC BILARY SPHINCTEROTOMY IN MALIGNANT BILARY OBSTRUCTION: IS IT INDICATED IN CASE OF STENT PLACEMENT? A META-ANALYSIS

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Aims & Methods: We performed a literature search by using PubMed, SCOPUS, Google Scholar and the Cochrane Central Register of Clinical Trials (up to February 2017) to identify full-text studies evaluating the efficacy and safety of endoscopic biliary sphincterotomy (EBS) in patients with malignant biliary obstruction (MBO), especially if palliative treatment. The role of endoscopic biliary sphincterotomy (EBS) before stent insertion is not clearly defined. The primary outcome of our meta-analysis was to assess the technical success of biliary (plastic or metal) stent insertion. Secondary outcomes included early complications within 30 days from ERCP and late complications which (from 30 days since ERCP).

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 (97.9%) in the EBS group versus 331/339 (97.6%) in the no-EBS arm (OR: 0.38; 95%CI: 0.17–0.83). Early mortality rate was 0% in the EBS group vs 25/339 (7.4%) in the no-EBS group (OR: 6.29). The mean age and follow-up duration of EST and EPS were 48.4±15.1yrs, 24.1±6.3 months, 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 is 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 microtholithiasis. Disclosure of Interest: All authors have declared no conflicts of interest.

References

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

Introduction: Endoscopic biliary stenting is the treatment of choice in presence of malignant biliary obstruction (MBO), especially if palliative treatment. The role of endoscopic biliary sphincterotomy (EBS) before stent insertion is not clearly defined. The primary outcome of our meta-analysis was to assess the technical success of biliary (plastic or metal) stent insertion. Secondary outcomes included early complications within 30 days from ERCP and late complications which (from 30 days since ERCP).
Aims & Methods: In this study, we examined the efficacy and safety of emergency ERC in super-elderly patients with moderate to severe acute cholangitis, according to TG13. We performed 178 emergency ERC procedures in 132 patients during 3 years (June 2014–December 2016). We determined patients ≥ 90 years as “super-elderly” and those < 90 years as “non-super-elderly.” Evaluation criteria included comorbidities, oral administration of anticoagulants, cause of cholangitis, ERC procedure (examination time, endoscopic biliary sphincterotomy (EST) pre-cut papillotomy, treatment success rate, presence or absence of peripapillary diverticula and papilla after EST, sedation dosage), ERC-related complications (bleeding, perforation, post-ERC pancreatitis, complications within 30 days after ERC procedure), anesthetia-related complications (blood pressure decrease, pulse reduction, respiratory depression).

Results: We examined 69 males (52.3%) and 63 females (47.7%). Women accounted 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 ERC procedures (moderate, 32; severe, 22) against 124 ERC procedures (moderate, 104; severe, 20) in non-super-elderly group. When the two groups were compared, the super-elderly group was statistically significant (p < 0.001).

Conclusion: Emergency cholangiography 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 ERC 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.

P0241 EFFICACY AND SAFETY OF ENDOBILIARY RADIOFREQUENCY ABLATION FOR THE ERADICATION OF RESIDUAL NEOPLASMA AFTER ENDOSCOPIC AMPLITUDE. RESULTS OF A MULTICENTER PROSPECTIVE STUDY

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Introduction: Dysplasia may persist at the termination of the common bile duct (CBD) after endoscopic ampullectomy. Radiofrequency ablation (RFA) could be an interesting alternative to surgery to reduce the risk of invasive cancer with less morbidity and mortality.

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
P0242 EXPERT VALIDATION OF A NOVEL MECHANICAL CUTTING PAPILLA
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Introduction: Simulation-based training has become an important pillar in commissioning training curricula in medical specialties. Effective education is crucial, especially in endoscopic procedures, which are being performed more frequently. The aim of our study was to determine the expert validity of a new cutting papilla for training sphincterotomies,

Methods: 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). The following factors were evaluated: ampulla shape, number of orifices, angle of opening, and IAC. The following types of IAC were distinguished: IAC with a long protrusion (L), dome (D), and oval (O). IAC was also recognized on magnetic resonance images (MRI) and endoscopic ultrasound (EUS). The eligibility criteria for ERCP were as follows: IAC was present in the CBD, confirmed by a double anatomopathological lecture, in the absence of any technical problems. Intra-operative bleeding and stricture were noted. The current study is a retrospective consecutive case study that is conducted in a single facility, with a 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 bile duct 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, DHG, carcinoma) respectively. The adverse events were as follows: 4 benign pancreatitis all medically treated, 2 patients died before the procedure (1 patient died from a peritonitis requiring biliary stent placement, 1 patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoscopy and biological tests). At M12, one patient presented with a biliary stricture resolved by dilation and a calibration biliary stent.

Conclusion: Endoscopic RFA performed on residual endo-biliary dysplastic buds after ampullectomy is an alternative to surgery, with a rate 55% dysplasia era
dication 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.

P0243 MEDICO-LEGAL CLAIMS IN GASTROINTESTINAL ENDOSCOPY: DOES PROCEDURE RISK RELATE TO SUCCESSFUL OUTCOMES?
S. Budihal, J. F Mayberry
Dietoge Diseases Centre, University Hospitals Leicester, GB/United Kingdom

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 the riskier the procedure larger is the likelihood of developing a complication. The current study is a retrospective consecutive case study that is conducted in a single facility, with a 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 bile duct 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, DHG, carcinoma) respectively. The adverse events were as follows: 4 benign pancreatitis all medically treated, 2 patients died before the procedure (1 patient died from a peritonitis requiring biliary stent placement, 1 patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoscopy and biological tests). At M12, one patient presented with a biliary stricture resolved by dilation and a calibration biliary 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.

OUTCOME OF ENDOSCOPY CLAIMS

<table>
<thead>
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<th>PROCEDURE</th>
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<tr>
<td>Colonoscopy</td>
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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%, 57%, 36% and 34% (rounded up to the nearest whole figure) for Gastroscopy, PEG, Sigmodoscopy, 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
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Introduction: Cholecdochocle has been rarely recognized. It provides a success rate of 44%, 44%, 57%, 36% and 34% (rounded up to the nearest whole figure) for Gastroscopy, PEG, Sigmodoscopy, ERCP and Colonoscopy claims respectively. There is no statistical difference between the proportions comparing Gastroscopy and Colonoscopy (StatsDirect software used).

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%, 57%, 36% and 34% (rounded up to the nearest whole figure) for Gastroscopy, PEG, Sigmodoscopy, 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 undergoing a Percutaneous Endoscopic Gastrostomy. Endoscopists should tighten their approach to all procedures.

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

OUTCOME OF ENDOSCOPY CLAIMS

<table>
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**Results:** There were cases of 1223 naïve papilla out of 2226 cases in total. The success rate to access BD with naïve papilla was 97.7% (1195/1223) and overall endotherapy was PM for 26%, fully covered SEMS for 52% and SS for 22% respectively. IAC was significantly higher in the L/N (p<0.01) and F (p<0.05) types than in the D type. The choledochocoele shapes of Sh, Oh and Qw 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% and 40% in Ab; in the Ac was found with L/N 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:** Choledochocoele is rarely seen on even cERCP, in addition the visualization of IAC has become rare. IAC may be visualized such as condition. Our results showed the intra-ampullary images. IAC would require refractory pursuit of the axis alignment due to its unexpected pathway within ampulla to access BD. Moreover, 60% 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 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 ampula 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**

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**P0245 ENDOTHERAPY FOR DUCT-TO-DUCT BILIARY ANASTOMOTIC STRICURE AFTER LIVER TRANSPLANTATION (BASALT STUDY GROUP): INTERIM ANALYSIS AND MEDIUM-TERM OUTCOMES OF A RETROSPECTIVE NATIONAL ITALIAN SURVEY**


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**Introduction:** Most appropriate endotherapy of biliary anastomotic strictures (AS) remains to be defined.

**Aims & Methods:** Aim is to retrospectively report the endotherapy for duct-toduct 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<0.0001 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% (51/666), i.e. 2.6% pancreatitis (1 severe leading to death), 4.1% cholangitis and 0.9% bleeding. Overall clinical success was achieved in 85% after a median I-SEP of 25 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 plastic 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.
Aims & Methods: The aim of our study was to compare conventional suction using a 20mL syringe and capillary suction during EUS-FNA. Patients who required to collect solid mass lesion were prospectively enrolled. We performed EUS-FNA with two needle passes and applied each pass of different techniques which were randomly allocated. The diagnostic accuracy, the quantity of samples (0-5 represents sufficient material for adequate for histological interpretation and sampling, 5 degree of contamination, and the amount of blood (0-2.2 represents significant amount of blood) were compared between conventional suction and capillary suction. Further analysis was carried out in the patients with pancreatic cancer. For patients with negative EUS-FNA, surgical specimen evaluation, results of other diagnostic investigations and/or long term clinical follow-up (6 months) were used to establish the definitive diagnosis. Results: During the study period, 96 patients underwent EUS-FNA were enrolled and 7 patients were excluded due to loss of follow-up. Finally 89 patients (averaged 68.5 y/o, M: F = 47:42) were analyzed. There were 60 pancreatic lesions (42 pancreatic cancer, 6 neuroendocrine tumor, etc.), 17 lymph adenopathy, 6 subcutaneous lesions, 6 other lesions biopsied, with a mean diameter of 28.3 ± 3.5 mm. Although there was no significant difference in the diagnostic accuracy (86.5% vs. 79.8%, p = 0.32), the degree of contamination, the samples obtained by conventional suction contained more blood compared to those obtained by capillary suction (0.17 vs. 0.02, p = 0.05). Moreover, conventional suction showed favorable diagnostic accuracy (83.3% vs. 69.0%, p = 0.20) and significantly higher quality of samples (3.38 vs. 2.74, p < 0.05) than capillary suction, in the patients with pancreatic cancer. Conclusion: Capillary suction was effective in the EUS-FNA sampling and associated with less contamination with blood, but conventional suction is recommended in case of fibrotic pancreatic cancer for obtaining high-quality sample.

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

P0249 DIAgnostic Efficacy of Endoscopic Ultrasound-Guided Fine-needle aspiration for a Pancreatic Mass using the Cell Block Method without Rapid on-site Cytology

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Introduction: Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) has been shown to be efficient for diagnosis of pancreatic masses. Only with the smear method, however, its diagnostic efficacy may vary greatly depending on the proficiency of the cytopathologist. On the other hand, the cell block (CB) method allows cytological and/or histological evaluation with hematoxylin and eosin (HE) staining and with immunostaining for serial sections if necessary.

Aims & Methods: The aim of this study was to evaluate the diagnostic efficacy of EUS-FNA for a pancreatic mass using the CB method without rapid on-site cytology retrospectively. A total of 206 patients with pancreatic masses (head: 87, body: 86, tail: 33) who underwent EUS-FNA using a GF-UL240® or GF-UL240® (Olympus Medical Systems, Ltd, Tokyo, Japan) between June 2005 and November 2016 were included in this study. The needles used were 22G needles. At least two passes were made during the procedure (mean ± 0.9 passes). Adequate specimens were regarded to be those in which whitish flagging were macroscopically achieved. The samples were immediately fixed in 10% formalin and processed by the cell block method using sodium alginate. Rapid on-site cytology was not performed. All samples were stained by hematoxylin and eosin, periodic acid Schiff and Acidine blue, and immunohistochemical techniques. The final diagnosis was based on histological findings of surgically resected specimen, image diagnosis and clinical course for more than six months.

Results: The final diagnosis was malignancy in 184 patients (pancreatic ductal cancer (PDC), 171; neuroendocrine tumor (NET), 9; malignant lymphoma, 2; metastasis of malignant melanoma, 1; solid pseudopapillary neoplasm, 1), and benignity in 23 patients (autoimmune pancreatitis (AIP), 11; chronic pancreatitis, 7, organizing pancreatic pseudocyst, 4, IPMN, 1). Diagnostic accuracy of on-site cytology showed high for definitive diagnosis.

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

PO250 A COMPARATIVE STUDY BETWEEN EUS-GUIDED BILARY DRAINAGE AND PERCUTANEOUS BILARY DRAINAGE IN PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION AND FAILED ERCP

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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 treatment increasingly offered in western centers (3). However, data from mainland China is sporadic (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 included clinical success rates and re-intervention rate.

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 (judged success: 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).

Conclusion: Despite similar high technical and clinical success rates compared with PTBD, EUS-BD was associated with reduced rate of re-interventions, UES-BD seems a better alternative than PTBD for malignant biliary obstruction after failed ERCP.

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 CYTOTOLOGY IN ATTAINMENT OF HISTOPATHOLOGY OF DISTAL CBD MASSES

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Introduction: Distal CBD masses have always been a diagnostic dilemma. They are difficult to diagnose with any modality used. Brush cytology under ERCP guidance is 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 obstructive jaundice in the last 3 years were taken for the study. The protocol we followed First - EUS was done using a linear echocodscope, mass identified and FNA performed with a 25 G needle making 2 to 5 passes and material sent for cytology. Same patients subjected to ERCP. A wide papillotomy was performed and over the wire cytology brush was used and brush cytology was obtained. Two passes were made and material taken on a slide and sent for cytology after wet fixation.

Results: Total number of cases 56 Age (range) 57.2±13.6 Male to Female 16:16 Total Number of Biopsies (Bilirubin 9.0 μg/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 (2t0 5). Positive diagnosis obtained with FNA 47 (83.9%). Positive Diagnosis obtained by brush 34 (60.7%) of malignancy.

Diagnosis in Positive Cases

<table>
<thead>
<tr>
<th>FNA (47)</th>
<th>Brush Cytology (34)</th>
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<tr>
<td>Malignancy</td>
<td>38 (80.8%)</td>
</tr>
<tr>
<td>Suspicious Of Malignancy</td>
<td>5 (10.6%)</td>
</tr>
<tr>
<td>Benign</td>
<td>4 (8.5%)</td>
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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 11% 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 likelihood of have a distal CBD cholangiocarcinoma.

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

References


P0252 RANDOMIZED TRIAL COMPARING THE LUMEN-APPOISING METAL STENTS (LAMS) AND PLASTIC STENTS FOR EUS-GUIDED DRAINAGE OF WALLEO-FALL NECROSIS (WON)

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Introduction: Although lumen-apposing metal stents (LAMS) are being increasingly used for drainage of walled-off necrosis (WON), their advantage over plastic stents is unclear.

Aims & Methods: We aimed to compare the efficacy of LAMS and plastic stents for drainage of WON.

Symptomatic patients with WON (>20% necrosis) were randomized to undergo transmural drainage using LAMS (Hot AXIOS, 15 mm x 10 mm) or two double pigtail plastic stents (7Fr x 4 cm). Reintervention in persistently symptomatic patients included additional stent placement, percutaneous drainage and/or endoscopic necrosectomy. Treatment success was defined as symptomatic relief in conjunction with resolution of WON on CT at 6-week follow-up. Main outcome measure was to compare the no. of reinterventions. Secondary outcome measures were to compare treatment success, procedural duration, resolution of systemic inflammatory response syndrome (SIRS), clinical and stent-related adverse events, readmissions and length of hospital stay. Sample size to detect a difference of 1 in the no. of reinterventions performed at 90% power was calculated at 58 patients.

Results: 60 patients were randomized to LAMS (n = 31) or plastic stent (n = 29) placement. While there was no significant difference in the no. of reinterventions (median 1 [IQR 1–2] for both stent types, p = 0.78), the procedural duration was significantly shorter (15 vs. 42.5 mins, p < 0.001) and stent-related adverse event rate was significantly higher with LAMS placement (32.3 vs. 6.9%, p = 0.02). At an interim audit, significant adverse events (delayed bleeding [n = 3], buried stent [n = 2], biliary stricture [n = 3]) were observed in the LAMS cohort after 3 weeks post-intervention. This necessitated an amendment to the study protocol whereby a CT scan was obtained at 3 weeks following by LAMS removal if the WON had resolved. After protocol amendment, no difference in stent-related adverse events was observed between the cohorts (LAMS 8.5 vs. plastic 6.9%, p = 0.94).

Other 9.7 13.8 0.70

No. of reinterventions (n): Median [IQR] 1 (1–2) 1 (1–2) 0.78

Readmissions (%): 29.0 34.5 0.78

Conclusion: Except for shorter procedural duration, there was no significant difference in treatment outcomes between patients treated with LAMS or plastic stents. Given the faster resolution of WON, to minimize adverse events, patients undergoing LAMS placement should undergo post-intervention imaging at 3 weeks followed by stent removal if the WON has resolved.

Disclosure of Interest: R. Hawes: 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.

References


G. Macedo

84%; p

lesions was 92 mm (IQR: 74–120). The overall technical success rate was 78%

failed drainage attempt. Median follow-up time was 88 weeks (IQR: 42–140); 19

Results:

We included 42 cases of pancreatic pseudocysts (PP), and 25 walled-off

symptomatic/infected PFCs, who underwent EUSTD. PFCs were drained

EUSTD of PFCs using DPPS and FCSEMSs (Hanarostent BCF and Hot AXIOS system).

Aims & Methods:

pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPPS)

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Introduction: Ultrasound-guided endoscopic transgastric drainage (EUSTD) of pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPPS) remains the gold standard even from difficult-to-approach anatomical locations. Comparative studies with comparable results with the new 20G needle were included in the present study. The reference standards for the final diagnosis were histology on surgical specimen or clinical follow-up.

Results: A total of 50 SELs in 50 patients (22 males, mean age 61.5 ± 14.8 years) were included. The mean lesion size was 43.1 ± 17.5 mm. The lesion locations were esophagus (n = 1), stomach (n = 37), distal duodenum (n = 5), rectum (n = 6), and colon (n = 1). The procedure was technically feasible in all patients. Most patients’ number of passes required to reach a diagnosis was 2.2 (range 1–4). Definitive diagnosis with full histological assessment including HIC was obtained in 88% (44/50) of the patients. Diagnosis of EUS-FNB showed 36% (7/20) malignant SELs (32 GISTs, 1 metastasis from breast cancer, 1 leiomyosarcoma, 1 carcinoid, for SEL-like adenocarcinoma), 8 (16%) benign SELs (1 leiomysarcoma, 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 62.5 (95%CI 27.7–84.8), respectively. No major complications requiring additional care were observed.

Conclusion: In this multicenter study, we found that EUS-FNB with the new 20G core 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


D arrival of multiple stents and can be restricted by inadequate dr

Pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPPS) remain the gold standard even from difficult-to-approach anatomical locations. Comparative studies with comparable results with the new 20G needle were included in the present study. The reference standards for the final diagnosis were histology on surgical specimen or clinical follow-up.

Results: A total of 50 SELs in 50 patients (22 males, mean age 61.5 ± 14.8 years) were included. The mean lesion size was 43.1 ± 17.5 mm. The lesion locations were esophagus (n = 1), stomach (n = 37), distal duodenum (n = 5), rectum (n = 6), and colon (n = 1). The procedure was technically feasible in all patients. Most patients’ number of passes required to reach a diagnosis was 2.2 (range 1–4). Definitive diagnosis with full histological assessment including HIC was obtained in 88% (44/50) of the patients. Diagnosis of EUS-FNB showed 36% (7/20) malignant SELs (32 GISTs, 1 metastasis from breast cancer, 1 leiomyosarcoma, 1 carcinoid, for SEL-like adenocarcinoma), 8 (16%) benign SELs (1 leiomysarcoma, 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 62.5 (95%CI 27.7–84.8), respectively. No major complications requiring additional care were observed.

Conclusion: In this multicenter study, we found that EUS-FNB with the new 20G core 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


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

References


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

References


between the two groups was applied in order to minimize the effect of selection bias. A success rate of significantly reduced 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 ethanol ablation group and 17 (18.8%) of the natural course group (p<0.01). Significance in growth size in 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 ethanol ablation group and 17 patients (19.3%) in the natural course group (p=0.028) during follow-up. Overall 28.8% patients (34 of 118) who underwent EUS-guided ethanol ablation had 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 in comparison to 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.

P0257 RANDOMIZED TRIAL COMPARING THE FRANSEEEN AND FORK-TIP NEEDLES FOR EUS-GUIDED FINE NEEDLE BIOPSY

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Introduction: Fine needle tissue characterization using desmoplastic stroma is required for molecular profile-based personalized chemotherapy in pancreatic cancer. Recently, a three-plane symmetric needle with Fransseen geometry and a Fork-tip biopsy needle have been developed for histological tissue puncture.

Aims & Methods: We aimed to compare tissue acquisition between the 22G Fransseen and 22G Fork-tip needles in patients undergoing EUS-guided sampling of pancreatic masses.

Patients with pancreatic masses were randomized to undergo EUS-guided sampling using the 22G Fransseen and 22G Fork-tip needles. Two dedicated passes were first performed using both needles in individual patients for cell block. Subsequent passes were then performed for rapid onsite evaluation (ROSE) usually both panorama radiology and a VIVA combo generator (TaeWoong Medical, Gimpoo, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-, and 20-mm exposed tips) were used. After the echodescope was advanced to the stomach, the RFA needle was inserted into the surface of the left lobe. EUS-RFA was performed at ±4 W for 2–6 min in general 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 quadrant 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

P0259 EUS-GUIDED RADIOFREQUENCY ABLATION OF DIFFICULT SITES IN THE LIVER: A PRECLINICAL STUDY

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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 left lobe. EUS-guided RFA 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. EUS-RFA is expected to obviate the need for ROSE during EUS-guided tissue sampling.

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. EUS-guided 19-gauge needle and a VIVA combo generator (TaeWoong Medical, Gimpoo, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-, and 20-mm exposed tips) were used. After the echodescope was advanced to the stomach, the RFA needle was inserted into the surface of the left lobe. EUS-RFA was performed at ±4 W for 2–6 min in general 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 quadrate 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

P0260 CYANOACRYLATE INJECTION THERAPY OF SMALL BOWEL VARICES BY DOUBLE-BALLOON ENTEROSCOPY (DBE): A TERTIARY CENTRE EXPERIENCE

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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. TIPSS, 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 (hepaticojejunostomy (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 as the angulated and was developed to image the submucosa of 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 tending of further patent proximal SBV. At 30-day follow-up post-therapy, only 1 patient had experienced 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 have failed.

Disclosure of Interest: E. Vlachou: I have received a research & education grants from Fujifilm & Aquilant Medical.

E.J. Despiti: I have received a research & education grants from Fujifilm & Aquilant Medical.

All other authors have declared no conflicts of interest.
Introduction: The diagnostic yield of capsule endoscopy (CE) depends on the adequate visualization of the mucosa. As with colonoscopy, cleaning scales should be described in the report in order to better interpret results. In 2009, Broiet 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 87% 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 inadequate (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 have 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.
PO267 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

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Introduction: Inflammatory bowel diseases (IBD) 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 performance of the SBC capsule and software. 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 was successful procedure in terms of video creation and quality generation in accordance to the video reading methodology. Secondary endpoints were subjective coverage of SBC, subjective duration of total and segmental reading time, over all video quality and occurrence/severity of adverse events.

Results: 58 patients, of which 54 were enrolled and 49 ingested the capsule (14 patency failure, 5 withdrew consent). Mean age was 40.1 years, 51% were males. 69% of patients had established CD, 10% UC and 21% suspected. Mean patency was 3.5 (1–7, poor to excellent), and mean frame rate was 3.9 ± 1.4 (1–7, poor to very good) and excellent. Overall cleansing was regarded good or excellent in 96% of patients. All 49 videos met the primary endpoint, i.e. video was created and report generated with all included information and in accordance to the video reading methodology. The study included the rectum to jejunum exploration, mostly while watching video. Gastroenterologists were satisfied with small bowel coverage 6.6 ± 0.6 (mean ± standard deviation) and colon coverage of 6.0 ± 1.2 in a scale of 1–7 (unconfident to confident), image quality 6.1 ± 0.8 (1–7, poor to excellent), and subjective video rating of 3.9 ± 1.4 (1–7, poor to very good). There were 4 patients with small interferences related to video continuity (gaps).

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.

Disclosure of Interest: R. Eliajim: I have received consultant fee from Medtronic; I am in the advisory committee for PhotoPill, Tarus medical.
C. Spada: consultant and speaker fees for Medtronic.
I. Fernández-Uniñ 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. Lapidis: Employee at Medtronic
S.N. Adler: Received consulting fee from Medtronic

All other authors have declared no conflicts of interest.

PO268 THE UTILITY OF A NOVEL TRANSPAPILLARY DILATION TECHNIQUE WITH AN ABLATIVE CATHETER FOR SEVERE MAIN PANCREATIC DUCT STRICTURE DUE TO CHRONIC PANCREATITIS

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Introduction: Transepipillary biliary drainage for severe main pancreatic duct (MPD) stricture is sometimes difficult and diathermic dilatation 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 diathermic catheter for severe MPD stricture due to 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 dilatation 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). 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, 10–30.8). The mean MPD diameter at the distal side of stricture was 6.2 mm (mean 5.56%). Among them had no former procedure for MPD including stenting. (2) A wire-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 done after 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 dilatation 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 procedure (39 sec. and 25 sec. respectively) were observed in cases with pancreatitis.

Conclusion: Transpapillary diathermic dilation is a relatively safe and effective salvage procedure for severe MPD stricture due to chronic pancreatitis. It should be taken in cases that require multiple times and long duration diathermy procedures because of a risk of pancreatitis.

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

References
Introduction: Endoscopic biliary decomposition is widely used for advanced hilar cholangiocarcinoma. Bilateral stenting has become more feasible with more experienced endoscopists and the development of new devices. However, stent dysfunction develops in 3% to 45% because of tumor ingrowth, overgrowth, or debris as disease progresses. Endoscopic reintervention is difficult and complex with worsening bile duct strictures. The present study aimed to evaluate a suitable reintervention procedure for stent malfunction after stent-in-stent (SIS) deployment for malignant hilar obstruction.

Aims & Methods: From September 2009 to June 2016, a total of 52 patients who underwent failed stenting at Pusan National University Yangsan Hospital were enrolled in this study. Among them, 20 patients who underwent reintervention due to stent malfunction were analyzed. Reintervention was performed endoscopically or percutaneously. Technical and functional success rates were evaluated retrospectively.

Results: Technical and functional success rates of endoscopic reintervention were 83% (10/12) and 80% (8/10), respectively. Endoscopic bilateral and unilateral reintervention success rates were 75% (6/8) and 100% (4/4), respectively. Functional success was observed in 8 out of 10 patients (80%) who achieved technical success. For bilateral reintervention, either plastic or plastic and metal stents were used. PTBD was performed in 8 patients because of duodenal stenosis (2 patients) and poor conditions.

Conclusion: Endoscopic reintervention could be considered in the case of stent malfunction and fair patient conditions after SIS placement for malignant hilar obstruction. Decisions regarding bilateral or unilateral drainage and types of stents should depend on the conditions of the disease and the patient.

Disclosure of Interest: Authors have declared no conflicts of interest.

P0271 LONG-TERM OUTCOMES OF ENDOSCOPIC ULTRASOUND GUIDED BILE DRAINAGE WITH TRANSMURAL COVERED METAL STENT


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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-BD(RIDO)) 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-BD after failed ERCP were enrolled. The patients 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. PTBD was performed in 8 patients because of duodenal stenosis (2 patients) and poor conditions.

Conclusion: Technical success of EUS-BD was defined as successful stent deployment for malignant hilar obstruction. Decisions regarding bilateral or unilateral drainage and types of stents should depend on the conditions of the disease and the patient.

Disclosure of Interest: Authors have declared no conflicts of interest.

P0272 OUTCOME OF ENDOSCOPIC REINTERVENTION FOR MALIGNANT HILAR OBSTRUCTION TREATED BY STENT-IN-STENT DEPLOYMENT


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Introduction: Endoscopic biliary decompression is widely used for advanced hilar cholangiocarcinoma. Bilateral stenting has become more feasible with more experienced endoscopists and the development of new devices. However, stent dysfunction develops in 3% to 45% because of tumor ingrowth, overgrowth, or debris as disease progresses. Endoscopic reintervention is difficult and complex with worsening bile duct strictures. The present study aimed to evaluate a suitable reintervention procedure for stent malfunction after stent-in-stent (SIS) deployment for malignant hilar obstruction.

Aims & Methods: From September 2009 to June 2016, a total of 52 patients who underwent failed stenting at Pusan National University Yangsan Hospital were enrolled in this study. Among them, 20 patients who underwent reintervention due to stent malfunction were analyzed. Reintervention was performed endoscopically or percutaneously. Technical and functional success rates were evaluated retrospectively.

Results: Technical and functional success rates of endoscopic reintervention were 83% (10/12) and 80% (8/10), respectively. Endoscopic bilateral and unilateral reintervention success rates were 75% (6/8) and 100% (4/4), respectively. Functional success was observed in 8 out of 10 patients (80%) who achieved technical success. For bilateral reintervention, either plastic or plastic and metal stents were used. PTBD was performed in 8 patients because of duodenal stenosis (2 patients) and poor conditions.

Conclusion: Endoscopic reintervention could be considered in the case of stent malfunction and fair patient conditions after SIS placement for malignant hilar obstruction. Decisions regarding bilateral or unilateral drainage and types of stents should depend on the conditions of the disease and the patient.

Disclosure of Interest: Authors have declared no conflicts of interest.

P0273 EUS-GUIDED GALBLADDER DRAINAGE REDUCES LATE ADVERSE EVENT AND NEED FOR RE-INTERVENTION COMPARED WITH PERCUTANEOUS CHOLECYSTOSTOMY IN PATIENTS WHO ARE NOT ELIGIBLE FOR SURGERY


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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 conventional percutaneous cholecystostomy.

Aims & Methods: Retrospective, comparative analysis of the 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 and the patient who underwent percutaneous cholecystostomy is obtained from a 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 to Dec 2014). Early adverse events were also similar between two groups (6.8% in EUS-GBD group vs. 15.0% in percutaneous cholecystostomy group, P=0.103). However, late adverse events including 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 (574 in EUS-GBD group and 21/107 in percutaneous cholecystostomy group, P=0.017). Percutaneous cholecystostomy tube was indwelled for
median 20 days (14.0±4.5) after the procedure. A total of 7 patients in EUS-
GID group underwent re-intervention for adverse events and all of them were
correctly conducted. The patients who underwent percutaneous cholecysto-
omy more frequently received re-intervention for adverse event or recurrence of
cholecystitis after removal of cholecystectomy. (7/4 vs. 23/106, P = 0.041).
Conclusion: EUS-GID and percutaneous cholecystectomy were both effective
interventions to urgent drainage for acute cholecystitis. However, EUS-GID
might be beneficial than percutaneous cholecystectomy in long term management
for the patients with acute cholecystitis who are not suitable for cholecystectomy.

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

P0274 ENDOSCOPIC TREATMENT OF ANASTOMOTIC BILIARY
STRUCTURES IN PATIENTS WITH LIVING DONOR LIVER
TRANSPLANTATION: MULTIPLE PLASTIC STENTS VS FULLY
COVERED SELF-EXPANDABLE METALLIC STENTS
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Introduction: The “fully covered self-expandable metallic stents”(fcSEMSs) were
found to be non-inferior to multiple plastic stents (MPSs) for the treatment of
anastomotic biliary strictures after orthotopic liver transplantation (OLT). However,
there is scarce data about their efficacy in the treatment of anastomotic
biliary strictures after living donor liver transplantation (LDLT). We aimed to
compare the efficacy of fcSEMS and MPSs for the treatment of anastomotic
biliary strictures after LDLT.
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, median age: 51±9 years) who were managed with MPS 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, max-
imum 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 pro-
cedures 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 were 10mm in 22 patients and 8 mm in 1 patient. The length of the
Fc-SEMSs were 8cm in 13 patients, 10cm in 9, and 8cm 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 days) than in Group-2 (240±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±36 days, respectively.
Conclusion: FcSEMSs are an effective method for the treatment of anasto-
mosic biliary strictures after LDLT, with a less number of endoscopic sessions
and a shorter stenting duration required for the resolution compared to MPS.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0275 PROSPECTIVE RANDOMIZED STUDY FOR EFFICACY OF
AN DOUBLE BARE STENT COMPARED A DOUBLE COVERED
STENT IN MALIGNANT COLORECTAL OBSTRUCTION
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Introduction: Colorectal stenting is a minimally invasive, reliable and effective
intervention in patients with malignant colorectal obstruction, associated with a
low complication rate compared to traditional surgical treatment. One of the actual problems associated with colorectal stenting is the recurrence of
symptoms of obstruction. The most common cause is migration of covered stents
and ingrown of uncovered stents1-3. The aim of our study was to compare the
results of the use of stents of a new design, the development of which was aimed
at preventing these complications.
Aims & Methods: We aimed to evaluate the results of the use of the new design
of double uncovered and dual coated colorectal stents). Between December
2012 and April 2017, 77 patients with colonic malignant obstruction were
implanted 78 stents (39 bare, 39 covered EGIS Colorectal stent, S&G Biotech
Inc., South Korea). A double uncovered stent has a two-layer structure created
by crossing two stents, resulting in a smaller cell size. Such a design theoretically
can prevent the ingrow of the tumor, localization and uncrowed edges prevent the migration of
the stent. All interventions are performed by one operator using endoscopic
and radiological control. Groups of patients using coated and uncovered stents
were comparable in terms of sex, age, duration of symptoms of obstruction,
and stenosis localization. The reasons for the obstruction were primary tumors of the
colon 97.4%. The localization of the tumor is most common in the sigmoid colon
- 54.5% and was provided to 43(55.8%) patients, «bridge to surgery » – 34
(44.7%) patients.
Results: Clinical success was achieved in 74 (96.1%) patients. In two cases, when
using covered stents, the symptoms of obstruction could not be reduced, the
patient died. In one case, 18 hours after stenting with an uncovered stent, was
diagnosed perforation due to obstructive colitis. The average stay in
hospital after the intervention was 3 days; the difference between the groups
was statistically insignificant. 30 day mortality was 5.2%, the difference was statisti-
cally significant. Complications were detected in 3 patients in the group of bare stents
and in 1 patient in the group of covered stents, the difference was statisti-
cally insignificant. One patient with the carcinoma of a sigmoid colon with
invasion in anterior abdominal wall noted the appearance of subcutableus
emphysema without pneumoperitoneum, in 3 (3.5%) patients the occlusion
of the stents. The reasons for obstruction of the stents were occlusion from
the obstruction from stool (fibers) on the 83rd day (the endoscopic recanalization
was performed) and tumor growth over 165 days (endoscopic «sten-in-stent»
placement). In one patient, the cause of occlusion is unknown, operated in
another hospital 34 days after stenting - a transversostomy was performed,
died on the 4th day after the operation.
Conclusion: Double bare and double covered colorectal stents were feasibility
and efficacy for relieving malignant colorectal obstruction. Reobstruction was rare
complication and not different in both groups stent groups. Necessary to con-
tinue to research for the accumulation of material from other centers.
Disclosure of Interest: All authors have declared no conflicts of interest.

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P0276 THE FEASIBILITY OF NEW ENDOSCOPIC
GASTROINTESTINAL Bypass STENT FOR WEIGHT REDUCTION:
EXPERIMENTAL STUDY
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Introduction: Endoscopic therapy has been emerged as alternative treatment to
bariatric surgery for reducing weight. We developed a new endoscopic gastro-
inestinal (GI) bypass stent and designed a preclinical study to assess the safety
in a porcine model.
Aims & Methods: 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 sacri-
ficed, gastric, duodenal, and jejunal tissues were harvested and examined for
histologic assessment of any device or procedure-related effects.
Results: Our new GI bypass stent showed a good durability in simulated solution
flow. No breakage or migration of stent occurred under continuous water flow in
simulation system setting. In animal study, the mean starting weight was
30.1±1.5 kg. Delivery of the implant took an average of 19.8 min (range, 11–
32 min) in 5 pigs. The first 2 pigs showed a colostomy stent group and 11.2 min
(range, 6–18 min) duodenal bulb stent group. It required an average clipping time of 10.8 min (range, 8–14 min). Followed for stent migration after implantation, the mean patency duration was
1.5±0.7 weeks. One pig was died due to small bowel perforation and peritonitis
after stenting. In histologic finding, there were moderate degree of mucosal ero-
sions, but no definite ulceration on pylorus and duodenum.
Conclusion: New GI bypass stent has a good physiochemical properties in simu-
lated intestinal system. In animal, all stents were successfully deployed but migra-
tion of stent was seen in this study. Further investigation to known whether such as
eoscopic stuche mechanism and modification of stent would be required.
Disclosure of Interest: All authors have declared no conflicts of interest.

A255
P0277 LONG-TERM EFFICACY OF AN ENDOSCOPIC DILATION PROCEDURE FOR POST-RADIATION AND ANASTOMOTIC FARINGO-ESOPHAGAL STRICATURES

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Introduction: Dysphagia may occur due to benign pharingo-esophageal strictures, often resulting in repeated endoscopic dilations. The aim of the study was to access long-term efficacy of pharingo-esophageal dilations due to anastomotic or post-radiation strictures.

Aims & Methods: Retrospective study of patients suffering of dysphagia due to radiation (Group I) or anastomotic (Group II) induced pharingo-esophageal benign stricture submitted to endoscopic dilation between January 2013 and December 2015. The long-term efficacy (after a minimum follow-up of 12 months) was prospectively assessed by telephone interview by: a) dysphagia improvement or b) resolution (grade 0 or 1 of Mellow-Pinks scale), c) absence of further dilations and d) absence of PEG. Additional therapy (PEG or prosthesis placement, electroincision or surgery) was considered inefficiency criteria and these patients were excluded from the interview. Post-procedure complications were registered. Efficacy predictive factors were assessed.

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 I. Thereforal median interval between consecutive dilations was 2.5 weeks. The median dysphagia Mellow-Pinks score and luminal calibre were 3 ± 1 and 7 ± 2, 8 mm, respectively. Twenty-eight patients (out of 30 live patients not-submitted to additional therapies) answered to the interview: a) 96% had improved; b) 60% had a normal daily life diet; c) 75% did not need further dilations, d) 3 (11.4%) patients developed PEG, with a combined efficacy of 58, 3%. Nine patients required additional therapy (6 PEGs, 2 prosthesis, 1 electroincision). Overall, 17 (out 21 with previous PEG) were able to resume feeding per os. Fifteen and 29% presented Kochen criteria for refractory and recurrent strictures, respectively. There were two post-procedure complications (<1%): one deep laceration and one pharingo-esophageal fistula. Overall mortality was of 20% (10 patients died of non-related procedure causes). Mean follow-up was 29 ± 2, 11 months. Number of dilations and initial lumen calibre were significant predictors of combined efficacy in the univaried analysis; radic strictures predicted a greater final dysphagia in the multivariate model.

Conclusion: Our dilution programme presents relevant benefit to these patients and a low rate of complications. Patients with post-radiation strictures presented a worse prognosis. Even though retrospective we present the longest follow-up and focusing not only in objective measures but also in patient perception of global efficacy.

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

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Introduction: Current guidelines favour the use of bleeding stents over balloon tamponade for controlling esophageal variceal bleeding (EVB). 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 (D-Stent) procedure. 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 another EVB related to a subepithelial 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 a NIPS during follow-up (n = 6 patients) (1 patient died due to uncontrollable 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 (IQR82) days after Danis-Stent placement. Median Danis-Stents dwell time was 5 (range: 0-13) days. The most common adverse events were stent disloca- tions (n = 13; 37.1%), while ulcers/nercosis of the esophagheal mucosa was seen in only n = 4 (11.4%) patients.

Conclusion: Danis-Stent controlled refractory/massive EVB in 80% of patients but bleeding-related mortality was as high as 45%. While stent dislocations are frequent, ulcers/nercosis of the esophagus were rare with a dwell time of 5 days. The implementation of an early-TIPS strategy might improve the overall outcome.

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

References

P0279 A NOVEL METHOD WITH SELF-EXPANDABLE METALLIC STENT FASTENED WITH CLIP AND LOOP FOR THE TREATMENT OF ANASTOMOTIC STRICUTURE AFTER SUBTOTAL GASTRECTOMY

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Introduction: Benign anastomotic strictures are common adverse events of gastrosintestinal tract surgery. And, they are difficult to be managed conservatively. The first choices of treatment of anastomotic stricures are balloon dilatation and bougination. But, they are requiring repeated sessions. Self-expandable metallic stent (SEMS) placement has continuous expending 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 stricture. From February 2010 until February 2015, patients with benign anastomotic stricture 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 fastening method can be feasible and useful technique for postoperative anastomosis of submucosal gastrostomy. A large-scale prospective research is needed to validate the clinical effectiveness of our method and to determine the appropriateness.

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

P0280 EFFICACY AND TOLERABILITY OF BIODEGRADABLE STENTS FOR RECURRENT BENIGN OESOPHAGEAL STRICTURES: THE LEEDS EXPERIENCE
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Introduction: The optimum management of refractory or recurrent oesophageal strictures (RBES) despite repeated attempts at dilation is controversial. An accepted method includes temporary stent placement. Most commonly temporarly fully covered self-expanding metal stents (FC-SEMS) are used but these require removal some 8–12 weeks later. Oesophageal biodegradable stents (EBS) have the advantage that they do not require removal. However, there is a lack of good-quality evidence in support of their use. We aimed to review the safety and efficacy of a large series of single and multiple EBS insertions for benign RBES in a single tertiary referral centre.

Aims & Methods: A retrospective review of insertion of EBS (SX-ELLA) between April 2008 and October 2016 was conducted. Patients with one or more EBS insertions were included. Insertion and follow-up data extracted from the hospital database. 30 day safety and efficacy for all stent insertions and 12 month efficacy and median time to further intervention (MTFI) for first stents were analysed using the Stata package.

Results: 20 patients (13 M, 7 F; age 44–93; Charlson index range 2–8, median 4) with 37 stents were included. Stricture aetiologies included peptic (55%), radiotherapy (20%), post-surgical (20%) and post EMR (5%). Dysphagia score ranged from 2–4(median 3). The total median number of dilations prior to first EBS was 6 (range 0–17). 15(75%) patients had previously had a FC-SEMS placed with subsequent recurrence of symptoms. 30-day technical success and symptom improvement was 100%. 30 day adverse events included 4(11%) stent migrations and 12(32%) with significant pain, 3 patients requiring in-patient pain control (<3 days). There were no significant bleeds or perforations. 12 months following first EBS insertion 18(90%) required further endoscopic intervention due to recurrent symptoms; 5(25%) had further dilation, 9(45%) had either a FC-SEMS (2 patients) or a further EBS (7 patients). 2 patients had NG tube insertion and (5%) patient died of unrelated illness. 3(10%) were symptom free after one stent at 12m. MTFI was 139 days (range 75–517) and was not dependent on aetiology (peptic vs. non-peptic; 135 vs. 127 days, p = 0.54). There was a significant reduction in median number of interventions in the 12m following EBS insertion compared to the preceding 12m (2 vs. 7 respectively, p = 0.0003). 7(35%) patients received multiple EBS (range 2–12). 9 of these (43%) have subsequently required no further intervention, 3(43%) continue to receive intermittent EBS insertions on a symptomatic basis (<3 days). There were no significant bleeds or perforations. There was short-lived pain in a significant number. In this highly selected cohort of patients with severe comorbidity. A drawback to SEMS include their ability to migrate distally, with some studies estimating the rate at around 20%. We report a single-centre, retrospective cohort study on the use if SEMS, and aimed to establish risk factors for stent migration.

Aims & Methods: Case note review was undertaken retrospectively on all patients who had fully covered SEMS inserted at a high-volume tertiary oesophageal cancer centre between Jul 13 to Feb 17. All SEMS were placed under fluoroscopic guidance by experienced endoscopists. Stent migration was confirmed endoscopically or radiologically and was defined as displacement of the stent away from the stomach or cardia. The baseline stent data was recorded. Data on loss of the recanalised lumen. Shapiro-Wilks 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 SEMS). This also met Bonferroni correction significance. We demonstrate a trend towards shorter strictures being associated with an increased risk of migration [OR 1.14 CI1.122–1.164 (p = 0.0552)]. There were no significant associations between migration with stent type, SEMS performed prior chemo-radiotherapy, or whether the stent crossed the GOJ.

Conclusion: Endoscopic placement of SEMS 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 SEMS 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 stent migration rate at our centre is consistent with those found in other studies.

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

References

MONDAY, OCTOBER 30, 2017 09:00–17:00
SURGERY I - HALL 7
P0281 OUTCOMES OF PATIENTS UNDERGOING PLACEMENT OF FULLY COVERED SELF EXPANDING METAL STENTS FOR MALIGNANT OESOPHAGEAL STRICTURES
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Introduction: Fully covered self-expanding metallic stents (SEMS) have an established role in the palliation of oesophageal strictures, particularly in those with malignancy. SEMS are advantageous as they reduce the rate of tumour ingrowth, in doing so reduce the need for repeated endoscopic interventions in a cohort of patients with severe comorbidity. A drawback to SEMS include their ability to migrate distally, with some studies estimating the rate at around 20%–30%. We report a single-centre, retrospective cohort study on the use if SEMS, and aimed to establish risk factors for stent migration.

Aims & Methods: Case note review was undertaken retrospectively on all patients who had fully covered SEMS inserted at a high-volume tertiary oesophageal cancer centre between Jul 13 to Feb 17. All SEMS were placed under fluoroscopic guidance by experienced endoscopists. Stent migration was confirmed endoscopically or radiologically and was defined as displacement of the stent away from the stomach or cardia. The baseline stent data was recorded. Data on loss of the recanalised lumen. Shapiro-Wilks 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 SEMS). This also met Bonferroni correction significance. We demonstrate a trend towards shorter strictures being associated with an increased risk of migration [OR 1.14 CI1.122–1.164 (p = 0.0552)]. There were no significant associations between migration with stent type, SEMS performed prior chemo-radiotherapy, or whether the stent crossed the GOJ.

Conclusion: Endoscopic placement of SEMS 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 SEMS 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 stent migration rate at our centre is consistent with those found in other studies.

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

References
Seventy of intrathoracic and intrabdominal lymphadenopathy: mediastinal lymph nodules at 19 (12.2%) and 20 (33.9%) patients, combined of 38 (64.4%) and 35 (59.3%). At pre-operated staging most 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 16.6% 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.

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

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Introduction: Endoscopic submucosal dissection (ESD) was a promising method for the removal of intramucosal gastrointestinal lymphatic 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 aspirin 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 anti-thrombotic therapy by LDA (n = 42) and those with no anti-thrombotic 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 com-
parison between the two groups showed similar with regards to major bleeding, median (range) (times): 1.0 [0.0–4.0] vs 1.0 [0.0–4.0], p = 0.621. 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 events; 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

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Introduction: Later weekday of surgery seems to reduce the prognosis in oeso-
ophageal cancer, while any such influence on other cancer sites is unknown. This study aimed to test whether weekday of surgery influences prognosis following commonly performed cancer operations.

Aims & Methods: 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, cancer stage, vital volume, calendar year, and tumour stage.

Results: Included were 228,927 patients. Later weekday of surgery (Thursdays 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 oesophageal-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. Excluding 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: This study indicates that the type of surgery (Thursdays-Thursday) seems to negatively influence the prognosis for cancer of the gastrointestinal tract, indicating a need for re-scheduling of these operations.

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

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Introduction: Recently, multidisciplinary treatments such as perioperative chemo/ radio-therapies have been introduced to improve the therapeutic impact in 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 prognosis were examined retrospectively. Complications 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: Six hundred-forty-nine-sixty-nine 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 gastrosectomy, 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 pathologi-
cal stage showed that the prognosis of pStage III/IV patients with postoperative high complications was significantly poor compared to the patients with out grade III or higher complications (3-year OS: 45.3% vs 7.5%, P = 0.001). For the patients who had either neoadjuvant or adjuvant treatment, however, no obvious prognostic worsening was seen by the existence of complications (3-year OS: grade I/II vs 52.9%, P = 0.13). Multivariate analysis identified that severe com-
plication was independent risk factor for OS (hazard ratio 1.82; 95% confidence interval 1.08-3.05), especially in pStage III/IV gastric cancer (hazard ratio 3.00; 95% confidence interval 1.53-5.86).

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 post-operative complications.

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

P0286 ENDOSCOPIC PAPILLECTOMY OF DUODENAL PAPILLARY TUMOR: A REPORT OF 75 CASES

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Introduction: Duodenal papillary tumor as rare gastrointestinal neoplasm is essential for curative therapy due to its malignant potential. Endoscopic papillectomy as the treatment of duodenal papillary tumor has been developed and is accepted as an alternative approach to surgery in select cases. Endoscopic papillectomy as a relatively difficult endoscopic technique mainly performed by experienced endoscopists. Studied standard endoscopic procedures for endoscopic papillectomy have not been established.

Aims & Methods: We aimed to investigate the clinical value of endoscopic papillectomy for duodenal papillary tumor based on the endoscopic and clinic characteristics. Between 2006 and 2017, seventy-five patients with duode-
nal papillary tumor under endoscopic papillectomy in the gastrointestinal endoscopic center of Chinese PLA General Hospital were included. These patients were diagnosed of duodenal papillary tumor by the clinical manifes-
tation, laboratory tests, CT, MRCO, endoscope, EUS, ERCP along with biopsies and histopathologic tests. During the detailed clinical assessment combined with patients’ wishes, endoscopic papillectomy and followed ERCP procedures were performed successfully, and the clinical data of these patients were retrospectively summarized.

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 had no abdominal symptoms. Endoscopic papillectomy 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 intraductal papillary mucinous neoplasm (37.3%, 28/75), high-grade intraepithelial neoplasia (18.7%, 14/75), adenoma with high-grade intraepithelial neoplasia (26.7%, 20/ 75), adenoma combined with local carcinoma (16%, 12/75), and neuroendocrine tumor (1.3%, 1/75). In total resection was achieved in 53 cases (70.7%) and the partial resection was performed in 22 cases (29.3%). After endoscopic papillectomy, the ERCP procedures were performed in 70 cases (93.3%). The pro-
phyllactic pancreatic duct stent was placed in 30 cases (40%) for preventing pancreatic fistula, 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 28.7% (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,
hemorrhage was identified in 11 patients (14.6%) but mainly cured by endoscopic hemorrhoidectomy, followed by percutaneous (9.3%, 7.75%) but cured with medical treatment.

Conclusion: Endoscopic papillotomy 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.

P0207 PROPHYLACTIC COLECTOMY WITH EXTENDED INDICATION OF RECTAL PRESERVATION IN RELATED ABC FAMILIAL ADENOMATOUS POLYPOSY-SYSTEMIC SYNDROME: ADENOMA TREATMENT DRAMATICALLY CHANGES THE NATURAL HISTORY OF POLYPOSY

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Introduction: Prophylactic surgery of familial adenomatous polyposis (FAP) ranges from total colectomy with ileorectal anastomosis (IRA) to proctocolectomy with ileoanal anastomosis and J pouch (IAA). Rectal preservation is based on studies that did not include systematic endoscopic treatment that we perform. The objective was to compare IRA to IAA in terms of oncological safety and quality-of-life.

Aims & Methods: Between January 1965 and November 2015, all consecutive patients undergoing prophylactic surgery for FAP with advanced endoscopic follow up in our unit: systemic endoscopic treatment of adenomas (argon, mucosectomy), were prospectively included. MYH-related polyposes and patients who underwent abdominoperineal resection were excluded from analysis.

Results: 296 patients included: 92 proctocolectomy with IAA (31.1%), 197 IRA group (66.1%) and 1 patient with colorectal cancer were excluded. Mean (SD) follow-up was 16.6 (11.9) years, during which the mean (SD) number of lower endoscopies was 3.4 (2.5) in the IRA group vs. 3.4 (2.5) in IAA group (p = 0.09) and 3.1% (n = 9). Mean (SD) number of lower endoscopies was 24.7 (33.9) in the IRA group vs. 3.4 (2.5) in IAA group (p = 0.09) and 98.9% vs. 98.8% (p = 0.82).

Conclusion: Combination of aggressive endoscopic treatment and extended rectal preservation appears to be a safe alternative to ileoanal anastomosis and J pouch.

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

P0208 ANAL PROBLEMS DURING PREGNANCY AND POSTPARTUM: A PROSPECTIVE COHORT STUDY

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Introduction: Many pregnant women have anal symptoms during pregnancy and postpartum. The most common proctological problems reported are haemorrhoids, anal fissures and anal incontinence. Literature about this problem is scarce.

Aims & Methods: The aim of this study is to determine the prevalence of anal problems and consitipation during the second and third trimester of pregnancy, in the immediate postpartum and up to three months after childbirth. We want to identify the risk factors for the development of anal symptoms. This is a prospective cohort study.

Women between their 19th and 25th week of pregnancy are included. High-risk pregnancy and non-Dutch speaking are exclusion criteria. Nineteen questions were formulated in a symptom questionnaire in the second and third trimester, in the immediate postpartum (within 3 days) and three months postpartum. Descriptive data were obtained from the patient files. A specific proctological diagnosis was presumed on the basis of combined symptoms (rectal bleeding, anal pain and swelling). Consitipation was defined by the Rome III criteria. Statistical analysis was performed with SPSS and risk factors were identified using multivariate analysis with binary logistic regression.

Results: Sixty-eight percent of the women developed anal symptoms during the whole study period. Anal symptoms occurred in 50% of the women during pregnancy, in 56.2% in the immediate postpartum and in 62.9% during the three months postpartum.

Conclusion: The most prevalent symptom was anal pain. Consitipation was reported by 60.7% during the whole study period. Most prevalent risk factors for the development of anal complaints were: pregnancy, use of anal faeces, personal (obstetrician or dietician) advice, illness, anal fissure or haemorrhoidal prolapse (3rd trimester and immediate postpartum) and anal fissure (not episode-related). Anal incontinence was only reported in 2% during the postpartum.

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

P0209 SURGICAL TREATMENT OF DIVERTICULITIS AND ITS COMPLICATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROL TRIALS

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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 peritonitis as a consequence. Therefore, perforation and peritonitis in stage 3 occurs with 30-50% chance and mortality reaching 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 approach and treatment in this clinical condition.

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 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 international) were searched for RCTs comparing different surgical procedures for different grades of diverticulitis. Out of 1378 articles, we included 14 studies with 1076 patients. The primarily assessed outcomes were post-surgical mortality rate besides short- and long-term post-surgery 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).

Conclusion: Two-thirds of pregnant women deal with anal symptoms during the second or third trimester, in the immediate postpartum (within 3 days) and three months postpartum. The most common proctological problems reported are haemor- rhage was identified in 11 patients (14.6%) but mainly cured by endoscopic hemorrhoidectomy, followed by percutaneous (9.3%, 7.75%) but cured with medical treatment.

Conclusion: Endoscopic papillotomy 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.

P0209 NLR AND PLR IN DIAGNOSING SYNCHRONOUS LIVER AND LYMPH NODE METASTASES IN PATIENTS WITH CRC

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Introduction: There has been enormous progress in diagnosing and treatment of colorectal cancer (CRC), however a great number of patients is nevertheless diagnosed in an advanced diseased stage, which is of great importance, to determine the most effective, inexpensive, prognostic, diagnostic, and treatment predicting biomarkers in early diagnostics of CRC considering its incidence worldwide. There are studies suggesting that the systemic inflammation play an important role in CRC tumor stage development, which can be reflected by the levels of neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR).

Aims & Methods: This study was designed to investigate the efficiency of preoperative NLR, PLR as a tool for the assessment of synchronous lymph nodes
and liver metastases in newly diagnosed patients with CRC. Three hundred patients with CRC undergoing primary 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), PLR (p = 0.002) and tumor stages (I to IV). ROC curve analysis showed high diagnostic efficiency of NLR (AUC 0.774, 95%CI = 0.683–0.790) and PLR (AUC 0.698, 95%CI = 0.636–0.742) 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


P0921 DEVELOPING AND VALIDATING OF RAMATHIBODI ADAPTATION OF RAMA-AS FOR DIAGNOSIS OF APPENDICITIS IN SUSPECTED APPENDICITIS PATIENTS

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Introduction: Diagnosis of appendicitis is still clinically challenging 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., derive and validation) was conducted at Ramathibodi Hospital (for derive, Thammasat University Hospital and Chaiprayam 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 Alvarezado’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 discrim inate than the Alvarezado score with C-statistic of 0.842 (95% CI: 0.804, 0.881) versus 0.760 (0.710, 0.810). Internal validation by bootstrap yielded Somer’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) and 0.813 (0.736, 0.892) with fair calibrations.

Discrimination: RAMA-AS is a useful tool for diagnosis of appendicitis. It has good discrimination performance and good calibration performance after revision.

Risk group Sensitivity Specificity LR+ LR- Post-positive test odds

Very low 100 0 0 0 0 61.8

Low 59.75 64.07 1.99 0.19 76.00 (85.25–93.26) (46.67–63.00) (1.65–3.73) (0.13–0.28) (73.00–79.00)

Moderate 64.08 88.08 5.25 0.41 89.00 (81.82–92.78) (3.39–8.13) (0.34–0.49) (85.00–93.00)

High 57.36 95.56 5.65 0.65 93.00 (57.36–84.46) (90.98–98.12) (3.56–18.00) (0.59–7.22) (86.00–97.00)

P0923 EARLY VERSUS DELAYED CLOSURE OF TEMPORARY LOOP ILEOSTOMY AFTER COLORECTAL SURGERIES: A PROSPECTIVE RANDOMIZED STUDY

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Introduction: Temporary loop ileostomies are commonly performed to protect a distal anastomosis in colorectal surgeries. Although they have been shown to reduce the number of leaks requiring surgery, they remain a source of complications and have an adverse effect on the quality of life. A few non-randomized studies have shown the feasibility of early stoma closure.

Aims & Methods: To compare the outcomes of early and delayed closure of temporary loop ileostomy in terms of operative parameters, morbidity, mortality, and quality of life. The study was conducted from May 2014 to September 2015. Following creation of loop ileostomy after colorectal surgeries, distal loop cont stast study was done on POD 7. Patients who had no leak were randomized to either early closure (8-13 days) or delayed closure (after 6 weeks) group. Patient demographics, operative parameters, morbidity, mortality and quality of life data were recorded in both groups.

Results: There were 24 patients in each group. Both groups were comparable in terms of demographic data except for age, which was significantly higher (p = 0.012) in the early closure group. Incidence of stoma related complications (p = 0.01) and Pittman ostomy complication severity index (p < 0.01) were significantly higher in the delayed group. Operative time (p = 0.033) and Surgeons assessment score (p = 0.0012) for the stoma closure surgery were significantly lower for the early closure group. There was no significant difference in the duration of hospital stay and the incidence of postoperative complications in the two groups. Quality of life as calculated by the Ostomy Adjustment Index score (OAI 23) was better in the early closure group (p = 0.014).

Conclusion: Early closure of a temporary loop ileostomy is feasible with the advantages of decreased stoma related morbidity, operative difficulties without increased morbidity and mortality when compared with conventional delayed ileostomy closure.

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

References


P0294 FULL-SCALE INTRODUCTION OF RADICAL LAPAROSCOPIC SURGERY FOR INGUINAL HERNIA EMPLOYING THE TRANSABDOMINAL PREPERITONEAL (TAPP) REPAIR AND EARLY OUTCOMES

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Introduction: Ger reported the first laparoscopic hernia repair in 1982 by approximating the hernia orifice with stainless steel and using a laparoscopic transabdominal preperitoneal (TAPP) repair as a revolutionary concept in hernia surgery and was introduced by Arregui and Dion in the early 1990s. Institutions performing radical laparoscopic surgery for inguinal hernia have been rapidly increasing since the NIH point was amended in Japan. However, in the 12th JAPAN SOCIETY FOR ENDOSCOPIC SURGERY questionnaire survey, the recurrence rate after surgery employing the TAPP method was reported to be 4%, posing a problem regarding the thoughtfulness of introduction of the TAPP method. Our hospital started using the TAPP method only occasionally until April 2015, but treatment of inguinal hernia was integrated, the indication was established in May 2015, and laparoscopic surgery employing the TAPP method has been performed for the indicated cases. In this study, we investigated the current state of inguinal hernia in our department as follows. Symptomatic inguinal hernia 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 emergency surgery for acute complicated Hinchey 3 diverticulitis from January 2012 to December 2016 was retrospectively evaluated. All patients were treated by pure laparoscopic left colectomy with primary colorectal anastomosis and temporary loop ileostomy. All the procedures were performed by the same surgeons (IS, ADL, FR). Perioperative care plan, operative steps and surgical instruments 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 complications were treated by percutaneous drainage or sutures. There were 8 complications (6.8%, 5 according to the Clavien-Dindo classification system). There were no postoperative deaths. The median 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 classified as grade 3 or higher in 2.5% of the cases. The 30-day readmission rate was 0%.

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

References

P0295 EFFECTIVENESS OF PURE LAPAROSCOPIC LEFT COLECTOMY WITH PRIMARY ANASTOMOSIS AND LOOP ILEOSTOMY FOR THE TREATMENT OF COMPLICATED HINCHHEY 3 DIVERTICULITIS

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Introduction: Due to the effectiveness of laparoscopic left colectomy with primary anastomosis and loop ileostomy in the treatment of complicated acute diverticulitis with diffuse purulent peritonitis (Hinchey 3), also considering the lack of evidence about this topic due to the difficulty of carrying out comparative trials with the laparoscopic washing/drainage technique, we carried out this study. A consecutive unselected series of 44 patients underwent emergency surgery for acute complicated Hinchey 3 diverticulitis from January 2012 to December 2016 was retrospectively evaluated. All patients were treated by pure laparoscopic left colectomy with primary colorectal anastomosis and temporary loop ileostomy. All the procedures were performed by the same surgeons (IS, ADL, FR). Perioperative care plan, operative steps and surgical instruments 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. The 30-day readmission rate was 0%.

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 complications were treated by percutaneous drainage or sutures. There were 8 complications (6.8%, 5 according to the Clavien-Dindo classification system). There were no postoperative deaths. The median 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 classified as grade 3 or higher in 2.5% of the cases. The 30-day readmission rate was 0%.

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

References

P0296 LAPAROSCOPIC COMPLETE LATERAL LYMPH NODE DISSECTION FOR LOW RECTAL CANCER

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Introduction: Total mesorectal excision (TME) with lateral pelvic lymph node dissection (LLND) is a standard procedure for low rectal cancer in Japan. However, ME alone is the international standard surgical procedure for rectal cancer. Complete LLND is controversial because of the limited field, which requires more pelvic exposure than TME. In expert hands it represents an effective technique for the treatment of acute diverticulitis complicated by diffuse purulent peritonitis.

Aims & Methods: After laparoscopic ME, the external iliac artery was exposed and the external iliac nodes were completely removed from inguinal ligament. Obrurator nodes were completely dissected while preserving the obturator nerve, resecting the obturator artery and vein, and confirming lateral pelvic wall, bladder wall and scatic nerve. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccygeal muscle (Alcock’s canal) were completely dissected while preserving the superior vesical artery and the pelvic plexus, and transecting several inferior vesical arteries. Finally, bilateral hypogastric nerves were separated to be preserved. Common iliac nodes were dissected; aortic bifurcation nodes and presacral nodes were also dissected by exposing the aortic bifurcation and the pelvic surface of the sacrum.

Results: Between 2015 and 2016, we performed laparoscopic ME with LLND for 10 patients with cT2 or deeper low rectal cancer. The median operative time was 502 min (420–679 min), and the median blood loss was 90 ml (5–500 ml). Postoperative complications developed in 4 (40%) patients, and the most frequent one was temporary urinary disorder in 2 (20%) patients. The median number of harvested lateral lymph node was 20 (14–23). So far there are no long-term outcomes.

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

References

P0297 TRANSGASTRIC-NOTES SIGMOID RESECTION IN AN ANIMAL SURVIVAL MODEL USING THE ANUBIS-SYSTEM

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Introduction: Natural orifice translumenal endoscopic surgery (NOTES) proposed advantages should be established by comparison with standard procedures. Using a single side transluminal access, the feasibility of performing advanced surgical procedures is still limited, especially for a single endoscope. We used the ANUBIS-system for sigmoid resection with a transgastric access reached by needle-knife incision and balloon dilatation. CO₂ pneumonueum was achieved by insufflation via a working channel. By steering the colonoscope, the colon was manoeuvred endoluminally and the colic mesentery was exposed. Bowel-close preparation was performed with a coagulation needle-knife with simultaneous assistance by a grasper via the Anubiscope. Both instruments have the possibility of two-directional movements. The access angle for preparation and visualisation could be altered during the procedure by manoeuvring the colonoscope and the movements of the flexible endoscopic instruments. To prepare anastomosis, circular stapler anvil was introduced transmurally and penetration of the colon wall was carried out. Subsequently, proximal resection of the sigmoid colon was performed using a linear stapler inserted through a trocar at the left
lower abdomen. The bowel extraction was performed by invagination transre- 
cecum and the intermesenterial distal linear stapling of the sigmoid, the colorectal 
anastomosis was completed by applying a circular stapling device transrectally, 
asisted by a transcutaneous inserted grasper. Function testing was performed by 
the colonoscope. 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 heal-

ing with a stenosis and consecutive prestenotic dilation in one case. These anastomotic or 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 peri gastric 
abscesses.

**Conclusion:** The use of an operating platform like the Anubisoscope 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 that enabled preparation and dissection. For resection and anastomosis an 
additional transcantage access was necessary.

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

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P0298 ASCITES, COMPLEX ADNEXAL MASSES AND RAISED CA-125 IN POST-MENOPAUSAL WOMEN: OVARIAN CANCER OR TUBERCULOSIS?

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**Introduction:** Peritoneal tuberculosis (TB) is an advanced ovarian cancer, two 
conditions with different management and prognosis, have many similarities: 
ascesis, 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-peritoneal TB 
in post-menopausal women who presented with mimicking miliary ovarian 
malignancy from 2004 to 2014 in a Tunisian center.

**Results:** The mean age was 59.8 (46–87 years). Three patients have personal 
or family history of TB. All women presented with abdominal pain and distension 
in two. A laparoscopic evaluation with biopsies was performed in 16 patients 
fluid showing lymphocytic predominance and no malignant cells and 
in 100% and ascites in 90.4%. Ascitic fluid analysis was done in 19 patients 
and an exploratory laparotomy in 4 women for suspected ovarian cancer.

**Conclusion:** Intraoperative findings of tubercles on the pelvic organs and peritoneal surfaces 
and elevated CA-125 levels in patients who presented with features mimicking ovarian malig-

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

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P0300 REGULATORY B CELLS CONTRIBUTE TO THE ALLEVIATION OF COLITIS INDUCED BY DEXTRAN SULPHATE SODIUM AFTER H. PYLORI INFECTION

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**Introduction:** Epidemiological studies have showed that there was an inverse association between H. pylori infection (H pylori) and the incidence of 
ulcerative colitis (UC) and Crohn’s disease (CD). At the same time, IL-8 is one of 
the critical inflammatory cytokines in the colitis induced by DSS. A C57BL/6 mice model of acute and chronic colitis was 
used to investigate the cellular composition 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 IFI-1 levels increased up to 9.25±2.81 
mol/l (P<0.05), 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 control 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 IFI-1 at the peak of inflammation (acute UC). 
Further synthesis of IFI-1 and reduced IL-8 in remission facilitates regenera-

tion of the damaged mucosa.

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

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**IBD 1 - HALL 7**

P0299 INSULINLIKE GROWTH FACTOR IGF-I AND INFLAMMATORY RESPONSE IN THE COLONIC MUCOSA IN ULCERATIVE COLITIS

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**Introduction:** Peptide growth factors including the IGF family are expressed in the 
mucosa and play a role in the 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 
colon inflammation in 35 patients with different clinical (Rahmlehiv 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 pmol/l. The spontaneous and E. Coli LPS-induced 
synthesis of IL-8 in rectal bioptic samples were studied via ELISA. The results 
were expressed as picograms per 1 mg of wet tissue (pg/mg). The severity of the 
illness was determined using the method of activity index. The percentage of 
patients with inflammatory infiltrate (in %) in the lamina propria. The study implied 
investigating the cellular composition of the inflammatory infiltrate in the 

alimentary tract. Depending on the density of the inflammatory infiltrate, 

the patients were divided into three groups (Group 1: 1–4%, Group 2: 5–9%, 

and Group 3: 10–25%). The results were expressed as nmol/l. The spontaneous and E. Coli LPS-induced 

production of IL-8 chemokine in rectal bioptic samples went up (300.0±6.0 pmol/l, P<0.05). In case of the LPS stimulation the production of 

IL-8 in the blood plasma decreased (15.1±1.35 nmol/l (P<0.05)), while spontaneous 

production of IL-8 chemokine in rectal biopic samples went up (300.0±6.0 pmol/l, P<0.05). There 

was significant inverse correlation (r) 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 

result of this was found between levels of spontaneously stimulated produc-

tion 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 9.25±2.81 
mol/l (P<0.05), 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 control 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). 
Further synthesis of IGF-I and reduced IL-8 in remission facilitates regenera-

tion of the damaged mucosa.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
CD19 may through the expansion and function of CD19 analysis of bacteria-biomarkers correlation, we found bacteria such as IL-22, IL-8 and MCP-1, and treatment altered microbiota-biomarkers correlation in inflamed mucosa of Antiinflammation. Additionally, we inflamed mucosa of Immunosuppression, but only correlated to A. asterotremella.

Conclusion: (1) H. pylori infection can alleviate the acute and chronic colitis induced by DSS in 19-10 Breg cells expanded significantly in H. pylori/DSS co-treated acute colitis mice. (3) CD19-10 Breg cells expanded while CD4+CD25+Foxp3+ Treg cells reduced significantly in H. pylori/DSS co-treated chronic colitis mice. The potential protective effect on acute and chronic colitis induced by DSS may take through the expansion and function of CD19-10 Breg cells.

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), salazaoulsalicylic acid (SASP) and Immunosuppression as treatment with Glucocorticoid (GC), azathioprine (AZA), biologics and thalidomide. Noninflamed and inflamed mucosa were acquired for 16S and ITS sequencing and fungal community was analyzed. Inflamed mucosa was used for RNA extraction and real-time PCR to detect the expression of IBD-associated biomarkers, such as TNF-alpha, etc. Notably, there were different correlation patterns in different treatment strategies.

Results: Compared with noninflamed mucosa, lower diversity and evenness were observed in inflamed mucosa in all IBD patients, but no significance in noninflamed (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, Basidomycota and Zygomycota. There was a higher proportion of Zygomycota in inflamed mucosa than both noninflamed mucosa in untreated IBD patients, and Antiinflammation and Immunosuppression significantly altered its abundance in unclassified fungi from Zygomycota. E. coli was the richest fungi in both inflamed and noninflamed mucosa of all patients. To analyze the effects of treatment strategies on fungal microbiota in IBD patients, we found Immunosuppression decreased abundance of Ascomycota and increased Basidomycota. There was a trend of increased relative abundance of Akkermansia muciniphila in noninflamed mucosa but decreased it in inflamed mucosa. Both Antiinflammation and Immunosuppression increased Zygomycota in inflamed mucosa, but not in noninflamed mucosa. Fungi-bacteria correlations analysis showed a weak correlation in noninflamed mucosa of untreated IBD patients, and Antiinflammation and Immunosuppression didn't significantly alter fungi-bacteria correlation patterns in noninflamed mucosa. However, after Immunosuppression, fungi including Candida, Chaetomium, Cladosporium and Cryptococcus were positively correlated to CD4+CD25+Foxp3+ Treg cells in the CD19-10 Breg cells. Notably, different correlation patterns in different treatment strategies, especially, IL-17A was extensively correlated to bacteria such as Enterococcus, Cuprococcus, Fusobacterium and Klebsiella in inflamed mucosa of Immunosuppression, but only correlated to Faecalibacterium in Antiinflammation. Additionally, we found a weak fungi-biomarkers correlation in IBD patients, but fungi such as A. asterotremella and Verruclitili were correlated to biomarkers such as IL-17A, IL-22, IL-8 and MCP-1, and treatment altered microbiota-biomarkers correlations 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 correlations analysis on acute and chronic colitis 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 MUCOSAL CYTOKINE PROFILE IN INFLAMMATORY BOWEL DISEASE PATIENTS: A LASER CAPTURE MICRODISSECTION APPROACH

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Introduction: Cronh’s Disease (CD) and Ulcerative Colitis (UC) are inflammatory Bowel Diseases (IBD) with a complex ecology, 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).

Conclusion: (1) H. pylori infection can alleviate the acute and chronic colitis induced by DSS in 19-10 Breg cells expanded significantly in H. pylori/DSS co-treated acute colitis mice. (3) CD19-10 Breg cells expanded while CD4+CD25+Foxp3+ Treg cells reduced significantly in H. pylori/DSS co-treated chronic colitis mice. The potential protective effect on acute and chronic colitis induced by DSS may take through the expansion and function of CD19-10 Breg cells.

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), salazaoulsalicylic acid (SASP) and Immunosuppression as treatment with Glucocorticoid (GC), azathioprine (AZA), biologics and thalidomide. Noninflamed and inflamed mucosa were acquired for 16S and ITS sequencing and fungal community was analyzed. Inflamed mucosa was used for RNA extraction and real-time PCR to detect the expression of IBD-associated biomarkers, such as TNF-alpha, etc. Notably, there were different correlation patterns in different treatment strategies.

Results: Compared with 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 Clostridia 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 Basaline to Day 36 (p = 0.15). Amongst the fungal microbiome, treatment effects were not useful in parsed 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. Microbe data was analyzed and interpreted by UCSF and funded by Gilead Sciences.

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References
Aims & Methods: This work was designed to investigate the pattern of cytokines that regulate the mucosal immune response occurring in different intestinal compartments 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 local antibiotic therapy. RNA extraction from the mucosa of CD and UC patients was carried out using kit RNeasy FFPE. LCM samples were prepared and interrogated by GenePix Pro 4.0 software. RNA expression of canonical and non-canonical Wnt ligands was significantly higher in the surface EP of both CD and UC patients, when compared to controls.

Results: Our data show that the LP compartment play a key role in the mucosal immune response in IBD patients. In particular, UC seems to be prominently different from that of the HS. Alterations in gut 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 interaction underlying the development of UC.

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

Reference

P0304 ALTERATIONS IN THE MUCOSA-ASSOCIATED FUNGAL MICROBIOME IN PATIENTS WITH ULCERATIVE COLITIS
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Introduction: The gut microbiota play important roles in the development of the ulcerative colitis (UC). Our previous study has indicated that mucosal 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.

Results: We observed a significant increase in gene expression level of IL-17 in the lamina propria of UC patients as compared to controls (p < 0.05). TNF-α, IFN-γ, IL-10 and TGF-β were determined by quantitative PCR, using glyceraldehyde 3-phosphate dehydrogenase (GAPDH) as reference gene.

Conclusion: In the present study we observed that the LP compartment play a key role in the mucosal immune response in IBD patients. In particular, UC seems to be prominently different from that of the HS. Alterations in gut 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 interaction underlying the development of UC.

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

Reference

P0306 CHARACTERIZATION OF GUT MICROBIOME ASSOCIATED WITH IMPROVEMENT OF ULCERATIVE COLITIS AFTER ANTIBIOTIC COMBINATION THERAPY USING FECAL METAGENOMIC ANALYSIS
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Introduction: Although the etiology of ulcerative colitis (UC) has yet to be characterized, it is increasingly accepted that the cause of UC might be related to commensal enteric bacteria in a genetically susceptible patient. Anti-inflammation agents and immunosuppressive drugs are usually prescribed for UC treatment, 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 72% of patients with active UC including those with steroid-refractory or dependent disease, suggesting ATM/AFM may 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 prior to, after therapy and at three months after treatment completion. 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 index indicated by the Mayo score. Furthermore, drastic 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 dysbiosis 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+ cells isolated from the mucosa was 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 mRNA expression of CD16 was significantly increased in ATM/AFM treated mice. The percentage of CD206+ 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 (p = 0.0088*, r = 0.51), a-SMA (p = 0.0044*, r = 0.55) and MMP2 (p = 0.0022*, r = 0.67) was detected in TNBS-STAT6 (-/-) mice but not in WT animals.

Table

<table>
<thead>
<tr>
<th>AT</th>
<th>CD16</th>
<th>CD206</th>
<th>MMP2</th>
<th>a-SMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT</td>
<td>1.0 ± 0.1</td>
<td>2.1 ± 0.5</td>
<td>6.3 ± 0.1</td>
<td>13.5 ± 2.2</td>
</tr>
<tr>
<td>STAT6 (-/-)</td>
<td>1.3 ± 0.1</td>
<td>2.7 ± 0.4</td>
<td>4.0*</td>
<td>5.2</td>
</tr>
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Conclusion: The expression of Wnt ligands from CD16 positive cells, which are accumulated in the mucosa, may be involved in murine intestinal fibrosis.
before treatment in the active stage to possibly be associated with increased prevalence of Bacteroides, Parabacteroides, Rickenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Piscicicketta 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 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 comparison to responders in association with increases in Bacteroides and Lactobacillus species and a decrease in Bacteroides.

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

References

PO307 GLP-1 EXPRESSING ENTEROENDOCRINE CELL NUMBERS ARE REDUCED AT THE SITE OF ACTIVE DISEASE IN VARIOUS MOUSE MODELS OF INTESTINAL INFLAMMATION
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Introduction: Classically, enteroeendoctrine cells (EEC) are regulated for regulating gastrointestinal motility, secretion, and insulin levels by release of peptide hormones. Via receptors and transporters, EEC are capable of sensing the lumina properia and luminal environment, including the microbiota, and also mediate immune-related signals. In particular, the L-cell-derived incretin horion 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 mone glucagon-like peptide 1 (GLP-1) or GLP-1 receptor antagonists (DPP-4 inhibitors) are used in clinical practice to treat type 2 diabetes, yet, via receptors and transporters, EEC are capable of sensing the lumina properia 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. Inflammatory bowel disease (IBD), a role for EEC in disease pathogenesis is indicated by a risk-associated SNP and autoantibodies affecting EEC function as well as general disease symptoms like insulin resistance and altered intestinal motility. However, the total number of studies investigating EEC number and function in IBD and mouse models of intestinal inflammation is limited and results are conflicting.

Aims & Methods: To characterize alterations in GLP-1-expressing EEC numbers under intestinal inflammatory conditions, immunoassays for GLP-1 and Chga as well as mRNA expression analysis was performed in intestinal tissue samples. Mouse models of intestinal inflammation used include genetic models, IL-10-/-, Apc-/- mice (colitis), an adoptive transfer model, Rag2-/- mice reconstituted with CD4+ T cells, chemically (DSS)-induced colitis and an infection model (Citrobacter rodentium).

Results: Numbers of GLP-1+ and Chga+ cells were consistently reduced in all mouse models of intestinal inflammation. These changes were confined to the site of intestinal inflammation. Neither absence of mature B and T cells in Rag2-/- mice alone was associated with reduced numbers of EEC, nor adoptive transfer of CD4+ T cells per se, since transfer of non-colonitic CD4+CD45R- T cells did not lead to changes in Chga+ cell numbers in the colon. The reduction of GLP-1+ and Chga+ cells observed by immunohistochemistry was reflected by diminished levels of Gcg and Chga mRNA expression, whereby mRNA levels of the L-cell-derived hormone Pty remained unaltered.

Conclusion: To our knowledge, this work provides the first comprehensive study of GLP-1+ and Chga+ cell numbers in different mouse models of intestinal inflammation. A reduction of GLP-1-expressing EEC seems to be a general feature of small as well as large intestinal inflammation. Further research will clarify if these alterations represent a consequence or causatively contribute to intestinal inflammation and elucidate the functional consequences on immune responses.

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

References

PO309 IMPAIRED MITOCHONDRIAL PROTEOSTASIS IS ASSOCIATED WITH MITOCHONDRIAL DYSFUNCTION AND INDUCES PHENOTYPIC TRANSITION OF LGR5+ STEM CELLS INTO PANETH CELLS
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Introduction: The intestinal stem cell layer 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 ClpP. 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 cross-talk of both as well as IF were performed to illustrate alterations of ISC subtypes. Readouts were complemented by mRNA expression analysis and biochemical approaches to further characterize the ISC refractory to netosis. The main outcome of our study is that ISC and Paneth cell populations are alternatively regulated by mitochondrial proteostasis. Under conditions of impaired mitochondrial function, ISC populations shift towards the differentiation into Paneth cells.

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References
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 disease.

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

PO310 METABONOMIC PROFILING OF ULCERATIVE COLITIS PATIENTS: RESULTS FROM AN INCEPTION COHORT TIME SERIES ANALYSIS

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Introduction: Previous studies have shown differences in disease phenotype of ulcerative colitc (UC) in South Asian (SA) migrants compared to Caucasians with pan-colonic phenotype predominat. The gut microbiota differs in Caucasian and SA patients with UC however, there is limited evidence on how this translates to the metabolome.

Aims & Methods: We aimed to examine the metabolic profile in a newly diag- 
nosed 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 further time points over one year (time point 2; months 4–8, time point 3; months 9–12) Metabonomics approach was applied using two different UPLC-MS profiling methods; 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 amounts between the two populations, time points (1 vs 3) and treatment groups.

Results: Fifty patients with UC of SA and Caucasian backgrounds were recruited. A total of 309 samples were collected. Sample collection was completed for all time points for 18 SA (11 UC and 7 HC) and 21 Caucasians (9 UC and 12 HC). There was no significant difference between SA and Caucasian at time points 1, 2 and 3 and treatment groups. Significant differences were observed between HC vs. disease, SA HC vs. Caucasian HC and SA UC vs. Caucasian UC. For the UC cohort, robust models were obtained by OPLS-DA between SAs and Caucasians; Faecal HILIC (R² 0.869, Q² 0.451, p < 0.0003) and urine HILIC (R² 0.783, Q² 0.526, p < 0.0001) and serum BA (R² 0.702, Q² 0.517, p < 0.0001) and faecal BA (R² 0.832, Q² 0.395, p < 0.0001). Combined analysis revealed 1611 significant features (faecal HILIC 60, urine HILIC 189, serum BA 489 and faecal BA 873). The assigned features are shown in Table 1. Faecal HILIC showed significantly higher essential amino acids (Adenine, L-phenylalanine, L-tryptophan) levels on UV and higher L-cysteine and creatinine levels on MV analysis for SAs. Urine HILIC showed lower creatine, L-phenylalanine and hippuric acid levels. Serum primary (Cholic and chenodeoxycholic acid) and secondary bile acids (BA modified by the gut) were significantly reduced in SAs. Table 1: Significant metabolites in OPLS-DA model between South Asian (SA) and Caucasians with UC. *compound is increased or decreased in SA compared with Caucasians respectively.

Conclusion: This study highlights the promise of UPLC-MS profiling to differ- 
entiate 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.

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PO311 BASELINE CLINICAL AND ENDOSCOPIC FEATURES OF ULCERATIVE COLITIS PATIENTS ARE RELEVANT GUIDE FOR SELECTING RESPONDERS TO SEQUENTIAL DEPLETION OF MYELOID LINEAGE LEUCOCYTES AS REMISSION INDUCTION THERAPY

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Introduction: Patients with active inflammatory bowel disease have elevated mye-
loid lineage leucocytes1 including the CD14 +CD16 + DR+ e phenotype known as proinflammatory monocytes, and a major source of tumour necrosis factor-a. 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.
Aims & Methods: In a retrospective and single-centre setting we aimed to under-
stand if patients’ baseline clinical and endoscopic features were relevant guide for identifying likely responders and non-responders to adsortive GMA. The sub-
jects were 145 consecutive UC patients who had undergone GMA with the Adacolumn as remission induction therapy between 2012 and 2016. Seventy-
three percent patients were steroid naive, 70 were steroid dependent, and 2 patients were steroid refractory. Patients had received up to an 11 GMA sessions over 10 weeks. At entry and week 12, patients were clinically and endoscopically evaluated, allowing each patient to serve as her or his own control. Clinical activity index was defined as remission. Biopsies from endoscopically detectable inflamed large intestinal mucosa were processed to see the impact of GMA on leukocytes within the mucosal tissue.

Results: At entry, the average CAI was 12.8, range 10–17. Ninety-three patients (65.1%) had the ability 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 glic-
derived neurotrophic factor (GDNF) produced by enteric glial cells (EGCs) as a therapeutic action of DCGDNF were examined. Diverse clinical signs of the dis-

References
**P0314 A COMBINED ADMINISTRATION OF AMPICILLIN AND VANCOUPIXAN MILDLY REDUCES IBD, DIVERSITY OF GUT MICROBIOTA AND PERTURBATION OF GLUTAMINE AND SHORT CHAIN FATTY ACID METABOLISMS**


**Introduction:** Antibiotics sometimes have an influence on colitis negatively. Although it is well known that dysbiosis is one of the major disturbances to the gut environment, the molecular mechanisms underlying the pathogenesis remains unclear.

**Aims & Methods:** We aimed to clarify how antibiotics affect the gut microbiota and the pathology of colitis. Mice were gavaged with ampicillin (ABPC), vancomycin (VCM), kanamycin, or a combination of ABPC and VCM (AV) 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 characterized by 16S rDNA sequencing.

**Results:** AV treatment in the A-V mice. Moreover, Glu metabolites and SCFA including butyric acid were significantly increased. The caecums were enlarged and dun-colored MIP-1α were significantly increased. The caecums were enlarged and dun-colored.

**Conclusion:** AV treatment improved the antibiotics—negative impact on colitis negatively. Interestingly, Glu treatment improved the microbiota—SCFA composition.

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

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**P0316 THE MECHANISM OF PROTECTIVE ROLE OF D3 DOPAMINE RECEPTORS IN PATHOGENESIS OF ULCERATIVE COLITIS**

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**Introduction:** The role of D3-dopamine receptors in the ulcerative colitis pathogenesis was studied in a recent literature. The hypothesis that activation of D3R improves colonic mucus secretion during experimental colitis. Study was done on male Wistar rats (180-230). Experimental colitis was induced by 6% dextran sodium colitis (0.5 ml, s.c.) in IA enema. Rats were euthanized 0, 5, and 2 h after IA enema. During the autopsy 7 cm from the anus has been removed. Surface mucosa layer was separated from epithelial cells with N-acetyl-L-cysteine and glycopolysaccharides were measured by periodic acid-Schiff (PAS) staining or by the reaction with Folin reagent. The content of hexose, fucose and hexosamine were determined by standard biochemical assays. Morphometric analysis was performed to evaluate the histological changes of colonic epithelium and Goblet cells. Oxidative metabolism and arginase activity (analyzed by colorimetric method) in peripheral macrophages were investigated.

**Results:** Pre-treatment with 7-OH-DPAT did not affect the glycoprotein levels in normal mucosa, but significantly increased total levels of glycopolysaccharide (1, 6-fold, p < 0.05) and hexose (1, 1-fold, p < 0.05) during IA-colitis. Furthermore, 7-OH-DPAT significantly increased total levels of peripheral macrophages in 0.5 h (1, 6-fold, p < 0.05) and in 2 h (1, 3-fold, p < 0.05) after IA enema. Pre-treatment with 7-OH-DPAT decreased the mucosal layer thickness, 1, 1-fold (p < 0.05), crypt depth 1, 1-fold (p < 0.05) and Goblet cell villous thickness 1, 1-fold (p < 0.05) in 0.5 h and 2 h after IA enema.

**Conclusion:** Pre-treatment with D3R-agonist increased levels of mucus secretion and activated natural immune response by macrophage activation during experimental colitis, which could indicate about the protective role of D3R.

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

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**References**

Results: Of 104 ileocecal resections, 30 (29%) and 15 (14%) had inflammation at the proximal and distal resection margins, 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 resections (87%, 61%, and 50% resp., \(p < 0.001\)). Active inflammation at the distal resection margin (HR: 3.189 (1.635–6.220); \(p = 0.001\) and smoking (HR: 2.502 (1.311–4.703); \(p = 0.004\) were the only independent predictors for clinical recurrence. The incidence of surgical recurrence was small to perform AIEC screening.

Conclusion: Inflammation at the distal (colon) resection margin, and not the proximal ileum, after ileocecal resection was associated with significantly increased risk of clinical recurrence. This unexpected finding suggests that radiological symptoms in correctly diagnosed terminal ileitis (L1 disease), while it is of crucial importance to exclude colonic L3 disease. As this phenotype is unlikely to benefit from more extensive surgery, pathological finding of positive distal resection margin should be regarded as a risk factor, warranting prophylactic drugs or close monitoring.

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

References

P0319 LIPOSOMAL FORMULATION AS A NEW DRUG DELIVERY SYSTEM FOR CROHN’S DISEASE - VALIDATION IN THE MOUSE MODEL OF TNBS-INDUCED COLITIS

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Introduction: C. jejuni infections are associated with an increased occurrence of inflammatory bowel disease (IBD), constitutes a significant healthcare burden, especially in the developed societies. Current methods of treatment are only partially effective and/or associated with major adverse effects. New therapeutic solutions are therefore required to ameliorate the side-effects of medical therapy, reducing complications and improving patients’ quality of life.

Aims & Methods: The objective of the study was to assess the effectiveness of delivery of anti-inflammatory drugs encapsulated in the liposomal formulation. Liposomes were prepared using thin-liquid hydration method. 0.9% sodium chloride was used as a solvent. The hydration solutions contained an aminosalicylate mesalazine (5-ASA), two recently validated plant-derived anti-inflammatories with low bioavailability, chlorogenic acid (CGA) and berberine, and pure solvent as negative control. Colitis was induced in male BALB/c mice by a single intracolic (i.c.) administration of 2, 4, 6-trinitrobenzene sulphonic acid (TNBS) on Day 0. Liposomal suspensions containing 5-ASA (5mg/kg), CGA (20mg/kg), berberine (5mg/kg) and the solvent were administered i.c. twice daily from Day 3 to Day 6. Mice were sacrificed on Day 7 and colonic damage was evaluated.

Results: The macroscopic scoring system included the evaluation of the colon length and bowel thickness as well as the presence of ulcers, haemorrhage, faecal blood and diarrhoea. Additionally, tissue myeloperoxidase (MPO) activity was determined and body weight was measured. The obtained results indicate that the best anti-inflammatory effect was obtained when liposomal suspension with berberine was used, while the treatment with 5-ASA was less effective.

Conclusion: CGA administration caused a detrimental effect as demonstrated by higher macroscopic score and increased MPO activity.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0321 EXTRA-INTESTINAL MANIFESTATIONS AT DIAGNOSIS IN PAEDIATRIC- AND ELDERLY-ONSET ULCERATIVE COLITIS ARE ASSOCIATED WITH A MORE SEVERE DISEASE OUTCOME: A POPULATION-BASED STUDY

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Background: Extragastrointestinal manifestations (EIM) at diagnosis of ulcerative colitis (UC) are rarely reported. The aims of this study were to determine the frequency of EIM at diagnosis and its association with a more severe disease outcome in paediatric-onset (≤17 years) and elderly-onset UC (> 60 years). Methods: A population-based study (Registre Epimad, France) of UC included 158 paediatric-onset and 470 elderly-onset patients. Results: The most frequent EIM was joint involvement (15.8% of paediatric-onset and 2.6% of elderly-onset UC). Conclusion: EIM at diagnosis of UC are associated with a more severe disease outcome in paediatric-onset UC. The association was independent of other risk factors such as disease activity or age at diagnosis.

P0322 LONG-TERM NATURAL HISTORY OF MICROSCOPIC COLITIS: A POPULATION-BASED STUDY

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Background: The aim of this study was to determine the incidence of microscopic colitis (MC) in France, to observe its natural history, and to compare it to the incidence observed in the United States. Methods: MC diagnostic criteria were used to identify patients with MC in the population-based cohort of UC patients of the Epimad registry. Results: A total of 13031 lower GI endoscopy procedures were undertaken between January 1st 2006 and December 31th 2017. The incidence of MC at diagnosis was 9.74 per 100,000 and increased with age at diagnosis. Conclusion: The incidence of MC at diagnosis appears low in France and was stable over time. The current incidence rate of MC is twice that observed in the United States.

P0323 IBD-INFO QUESTIONNAIRE: A MULTICENTER FRENCH UP-TO-DATE SURVEY OF PATIENT KNOWLEDGE IN INFLAMMATORY BOWEL DISEASE

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Introduction: The aim of this study was to develop an updated self-questionnaire to assess patients’ level of knowledge of IBD. Methods: The IBD-INFO questionnaire included 3 parts: a original part (Q1), and 2 parts from the translation of the pre-existing questionnaires Crohn’s and Colitis Knowledge score (CCKNOW) (Q2) and Crohn’s and Colitis Pregnancy Knowledge score (CCPKNOW) (Q3). Results: The score for each part of the questionnaire was calculated and associated with a risk of relapse. Conclusion: The questionnaire-based study showed that after diagnosis, two thirds of patients with MC observed long-term clinical remission. Age at diagnosis and exposure were associated with a risk of relapse.

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Within the first 10 years after UC onset. Furthermore, biological therapy
Investigation of the average disease activity in 5-year-intervals in UC patients
F. Cordes
BOWEL DISEASE – EVIDENCE FROM A LARGE RETROSPECTIVE
THE DISEASE COURSE IN PATIENTS WITH INFLAMMATORY
P0324 IMPACT OF PRIMARY SCLEROSING CHOLANGITIS ON
DISEASE ON THE DISEASE COURSE IN PATIENTS WITH INFLAMMATORY
THE DISEASE COURSE IN PATIENTS WITH INFLAMMATORY
BOWEL DISEASE – EVIDENCE FROM A LARGE RETROSPECTIVE
STUDY WITH MATCHED COHORTS
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Introduction: Primary sclerosing cholangitis (PSC) is a disorder predominantly affecting the bile ducts and comprising Crohn’s disease (CD) and ulcerative colitis (UC), which are characterized by chronic remitting-intestinal inflammation and carry the risk for extraintestinal manifestations including primary sclerosing cholangitis (PSC). Available data on the impact of PSC in the disease course in IBD patients is scarce. In this study, we assessed the impact of coincidental PSC on the disease course in a large IBD patient cohort.
Aims & Methods: In total 1814 patients with histologically confirmed IBD were evaluated. Medical records from 705 UC and 1022 CD patients as well as from 77 UC-PSC and 10 CD-PSC patients were assessed. Data were evaluated using standard statistical methods. In matched-pair analyses, IBD 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 1022 CD patients (1.0%), respectively. Of note, 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% vs. p < 0.001). Concerning CD, all patients with coincidental PSC showed colonic involvement, while only 69% of the CD patients without PSC had colonic manifestation (p = 0.044). Interestingly, IBD patients without PSC presented more frequently with active disease, as compared to IBD-PSC patients (14% vs. 11% in year 1; p = 0.055). Convenantli, 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 (30% vs. 22% p = 0.043) and earlier (20.4 vs. 26.8 years after onset, p = 0.087) in UC without PSC than in those with coincidental PSC. Colorectal high grade intraepithelial neoplasia (HGIEN) and CRC were detected in 25 IBD-PSC patients without PSC and in 7 IBD-PSC (4 UC and 3 CD) patients (1.45% vs. 8.05%). Of note, in IBD-PSC patients, HGIEN/CRC occurred significantly earlier than in IBD patients without PSC (20-year-risk: 9.6% vs. 5.6%; p = 0.003).
Conclusion: In our large cohort study, IBD patients with coincidental 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.

PO325 UNCHANGED SURGERY AND HOSPITALIZATION RATES IN AN EAST-WEST EUROPEAN IBD COHORT DESPITE DIFFERENCES IN USE OF BIOLOGICALS – 5 YEAR FOLLOW-UP OF THE EpiCom-COHORT
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Introduction: The EpiCom-cohort is a European prospective population-based cohort of uniformly diagnosed patients with inflammatory bowel disease (IBD) diagnosed in 2010 in centres from Western and Eastern European countries. The cohort aims at describing differences in occurrence, treatment strategies, disease course and prognosis within Europe.
Aims & Methods: Patients were followed each 3rd month for the first year after diagnosis and then according to the treating physician for the 2-5th year of follow-up. Clinical data on surgery, hospitalizations and medical treatment included biological therapy were captured prospectively throughout the follow-up period and entered in a validated web-based database. The aim of the study was to investigate differences in disease outcome and the use of biologicals between Eastern and Western Europe, from diagnosis and during the first 5 years of follow-up. Associations between outcomes and multiple covariates were analysed by Cox regression methods.
Results: A total of 1289 patients aged 15 years or older from 29 centres in 13 Western and 8 Eastern European countries were followed prospectively of whom 73% (66%) had ulcerative colitis (UC), 488 (38%) had Crohn’s disease (CD), and 46 (4%) had IBD unclassified (IBDU). Crude annual rates for CD and UC patients regarding surgery, biological treatment and hospitalization are shown in Table 1. Significantly more CD patients in Western Europe received biological therapy (p < 0.05), while surgery and hospitalization rates did not differ between the regions (p > 0.05). In UC, surgery rates did not differ between the regions, while hospitalization rates were higher in Western Europe (p < 0.05). Cox regression analysis showed that in CD strictureing (B2) or penetrating disease (B3) and progressing from luminal disease to B2/B3 increased while early (<6 months from diagnosis) treatment with immunosuppressives reduced the risk of surgery and hospitalization. In UC, progressing to extensive colitis increased the risk of colectomy while females, extensive disease, need for prednisolone at diagnosis, and progressing to expansive disease carried the highest risk for hospitalization. The cumulative probability of CD patients receiving treatment with 5-ASA was 90% in Eastern Europe and 56% in Western Europe, 69% and 75% for prednisolone, 54% and 66% for immunomodulators, respectively. For UC patients the cumulative probability of receiving treatment with 5-ASA within the first year of disease was 100% in Eastern Europe and 91% in Western Europe, 44% and 52% for prednisolone, 27% and 30% for immunomodulators, respectively.
Conclusion: In an era of early and aggressive immunological therapy, surgery and hospitalization rates for CD and surgery rates for UC patients were similar in Eastern and Western Europe. Overall, surgery and hospitalization rates were comparable to population-based cohorts from the past decade and pre-biological era. The similar disease course may be in spite of more early and aggressive treatment with biologics and immunomodulators, with significantly more CD and UC patients in Western Europe receiving biologics.
Disclosure of Interest: All authors have declared no conflicts of interest.
There was a similar, significant increase for codeine (chi2 for trend, p < 0.005) when analyzed separately. Table 1 shows the association between opiate use and all-cause mortality in English primary care cohort of patients with IBD.

**Aims & Methods:** We used the English primary care database ResearchOne for this study which holds records from approximately 6 million individuals (>10% of the total population). We extracted relevant clinical codes and prescription data on all patients with IBD, and separated out those with ulcerative colitis (UC) and Crohn’s disease (CD). We created 4 categories of opiate medication use, namely; any opiate medication, codeine only, tramadol, and strong opiates.

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 prescriptions 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 was with increased all-cause 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.

**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 individuals 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.

### Table 1 Continued

<table>
<thead>
<tr>
<th>Opiate use</th>
<th>Hazard ratio</th>
<th>95% CI</th>
<th>Hazard ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate use (1–3 prescriptions per year)</td>
<td>1.34 (0.67–2.70)</td>
<td>2.44 (1.16–5.15)</td>
<td>0.79 (0.35–1.81)</td>
<td>1.39 (0.66–2.94)</td>
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<tr>
<td>Strong opiates</td>
<td>2.18 (1.20–3.95)</td>
<td>3.30 (1.77–6.18)</td>
<td>1.30 (0.69–2.69)</td>
<td>1.81 (0.91–3.62)</td>
</tr>
<tr>
<td>Heavy use (&gt;3 prescriptions per calendar year)</td>
<td>2.04 (1.14–3.65)</td>
<td>2.47 (1.41–4.33)</td>
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**Conclusion:** We aimed to: (1) evaluate the prevalence of periodontitis in patients with inflammatory bowel disease (IBD), (2) assess the impact of IBD activity and IBD therapy on parodontal outcomes.
Aims & Methods: In a prospective 6-months study, dental examination was performed on 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 periodontal destruction). 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 biologics and 8 had no IBD treatment. IBD was significantly associated with periodontitis (81% vs 27%; Odds Ratio 2.9, 95%CI:1.3-6.2). 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 > 2) 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 a diagnosis of periodontitis were treated by periodontal debridement and subgingival irrigation with povidone-iodine which led to a significant decrease of BOP index three months after diagnosis.

Conclusion: Inflammatory bowel diseases were associated with an increase risk of periodontitis. Gingival inflammation was correlated to disease activity and anti-TNF therapy was associated with a lower risk of parodontal disease.

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

References

P0328 DETECTION OF MUTATIONS IN NOD2/CARD15 GENE IN ARAB PATIENTS WITH CROHN’S DISEASE
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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 Qiagen DNA Blood mini kit. The isolated DNA were sequenced using ABI 3130xl Genetic analyzer, and specific mutations were identified in the NOD2 CARD15 sequence of 17 (16.5%) Arab patients and 9 (9%) Arab controls. The mutations were 34 (63%), 8 (15%) and 3 (5%) IBD patients.

Results: Table 1 shows the results of all homozygous and heterozygous mutations found in the control subjects. The mutation rs2066845 (SNP12, Exon8 2722G > T) was found only in one patient and no controls and rs2066847 (SNP13, Exon11 3020insC) was not detected in any of the patients or controls.

Conclusion: This study suggests that mutation in rs2066845 (SNP12, Exon8 2722G > T) occurs more frequently in Arab patients with Crohn’s disease compared to controls, but the disease is associated only with the homozygous mutation. Mutation in rs2066842 (SNP5, Exon4 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, Exon4 2104C > T) and rs2066847 (SNP13, Exon11 3020insC) were not seen in this population.

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

P0329 GENETIC ASSOCIATIONS OF INFLAMMATORY BOWEL DISEASE IN SRI LANKA: A CASE-CONTROL STUDY OF PHENOTYPES AND POLYMORPHISMS
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Introduction: There is limited data on genetic of inflammatory bowel disease (IBD) in populations where the condition is emerging, especially from South Asia.

Aims & Methods: A case [histologically confirmed ulcerative colitis (UC) and Crohn disease (CD) of ≥1 year duration] control [unrelated, healthy, gender matched] study was conducted at four major gastroenterology centres in Sri Lanka. Phenotypic data (type, location, severity, treatment types, response to treatment and complications) of cases were obtained. Cases and controls were genotyped for 16 selected variants with known IBD disease associations in Western and East Asian populations (IL12Rb1 rs1045431, IL23R rs11805303, ARPC2 rs2162347, IRGM rs132136189, IL26 rs2448290, IL12B rs3243507, IL17R rs2875, IL10 rs3042590, IL17F rs4613763, IL1RFL RELPM3 rs5771069, BMNF rs4061734, STAT3 rs347446, SMC1F rs7897997, LAMBI rs868774, HLA DRB5, DQA1, DRB1, DRA rs2690853, HLA B35, APEH rs9822268). Genotypes of all variants were determined by hypothesis testing associations that had a p-value of <0.003 were considered significant.

Results: There were 411 (males 46.9%) cases [UC-258 (62.8%), males-47.7%, CD-153 (37.2%), males-50.3%] and 465 (males-50.5%) controls. The following variants were associated with corresponding phenotypes: IL12Rb1 rs11805303 with IBD (all cases) (p = 0.001); IL23R rs1045431 with upper gastrointestinal (UGI) CD (p = 0.001); IL1RFL RELPM3 rs5771069 with relapsing IBD (p = 0.003); IL1RFL RELPM3 rs5771069 with treatment-refractory IBD (p = 0.005).

Conclusion: This first study, confirms the association of genetic variants of IBD previously reported in other populations, with clinical, prognostic and treatment phenotypes of IBD in a Sri Lankan (South Asian) population.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0330 VDR GENE BSM I POLYMORPHISM AND ULCERATIVE COLITIS**

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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 the Bsm I polymorphism of the VDR gene (rs1544410) 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 ("SNP-express" reagents, Lytech Co., Ltd., Russia) with electronic data representation of the 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: The presence of 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

**P0331 GENETIC AND SEROLOGICAL PROFILE AS MARKERS OF DISEASE SUSCEPTIBILITY IN SIBLINGS OF CHILDREN WITH INFLAMMATORY BOWEL DISEASE**

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Introduction: Having a family history for inflammatory bowel disease (IBD) is the only known risk factor for disease development. Indeed, up to 30% of IBD patients report at least 1 first-degree relative with IB and, siblings carry the highest risk. Recent data have shown that genetic and serological markers may predict disease development. However, there are only few studies evaluating a genetically well-characterized population and at high risk for disease, such as siblings and twins. Therefore, aim of this study was to evaluate genetic and serological findings as markers of disease susceptibility in healthy siblings and twins of children with IBD.

Aims & Methods: This is the first phase of a prospective, longitudinal, multi-center, case-control study. Serum was collected from 80 siblings and twins of children with IB and 77 healthy controls with no family history for IBD. Genotyping (TaunmanMGX10 microarray, CytoGenetics, CA) was performed for variants of Bsm I polymorphism of the VDR gene (rs1544410). Serological studies included 6 autoantibodies (anti-CBir1, anti-ASCA IgG, perinuclear anti-neutrophil cytoplasmic antibodies (pANCA), antineutrophil cytoplasmic antibodies (anti-OMp), and antibacterial flagellin antibody (anti-CbIr1)), were determined by specific enzyme-linked immunosorbent assay (ELISA).

Results: Fifty-nine out of 80 cases (74%) and 50 controls (65%) were positive at least for one of the serum autoantibodies (p = 0.29) and a combination of any 4 of them was found in 3 cases (4%) and no controls (p = 0.28). No significant difference was found for any of the studied autoantibodies between children with IBD and controls. Homozygosity for any susceptibility gene variant was found in 60 out of 80 cases (75%) and in 52.77 controls (67.5%) (p = 0.37), with no significant association between family history and genotype status. No combination of gene variants significantly differed between cases and controls.

Conclusion: Our preliminary results argue against a role of commonly recognized genetic polymorphisms and microbial antibodies as markers of disease susceptibility in siblings of children with IBD. However, data from larger and prospective studies, possibly including microbial characterization, are warranted before drawing definitive conclusions.

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

**P0332 ROLE OF DNM3A IN INTESTINAL EPITHELIAL CELLS**

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Introduction: DNA methyltransferases are important epigenetic modification mechanisms of gene expression. Several studies have shown an association between impaired methylation with inflammatory bowel diseases (IBD) pathogenesis. DNM3TA and DNM3TB are two of the three members of the family of de novo DNA methyltransferases. Variants in these proteins are responsible for the establishment of the unique DNA methylation patterns and contribute to the normal development as well as in many diseases. However, it is unknown if DNM3TA may play a role during the mechanism involved in this abnormal methylation pattern and consequently the development of diseases.

Aims & Methods: To assess the function of DNM3TA in intestinal epithelial cells (IECs), human Caco-2 colon carcinoma cells were transfected with siRNA targeting DNM3TA, DNM3TB and DNM3TL. Gene expression analysis and DNA methylation analysis using qRT-PCR, RNA sequencing and 850k methylation profiling array were performed. As assay were performed. For long-term experiments, we established an inducible CRISPR/Cas9 genome editing to delete DNM3TA gene in Caco-2 cells. DNM3TA knockout Caco-2 cells were grown in a 3D-Matrigel culture system and after 2 weeks, spheroids cells were stained for actin/nuclei and subjected to confocal microscopy analysis.

Results: From the RNA sequencing data, approximately 1000 genes were found to be differentially expressed between cells lacking DNM3TA and controls. The KEGG pathway analysis identifies differentially regulated genes associated with several functional categories comprising extracellular matrix receptor interaction, focal adhesion and MAPK signaling pathway. In contrast, we observed no difference in DNA methylation between the groups. Furthermore, loss of DNM3TA induces abnormal/spheroids by reducing spheroids diameter and defect in actin organization and lumen formation. Thus, the observed morphological phenotype may be linked to the differentially regulated genes involved in the previous analysed pathways.

Aims & Methods: To assess the function of DNM3TA in intestinal epithelial cells (IECs), human Caco-2 colon carcinoma cells were transfected with siRNA targeting DNM3TA, DNM3TB and DNM3TL. Gene expression analysis and DNA methylation analysis using qRT-PCR, RNA sequencing and 850k methylation profiling array were performed. As assay were performed. For long-term experiments, we established an inducible CRISPR/Cas9 genome editing to delete DNM3TA gene in Caco-2 cells. DNM3TA knockout Caco-2 cells were grown in a 3D-Matrigel culture system and after 2 weeks, spheroids cells were stained for actin/nuclei and subjected to confocal microscopy analysis.

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

**P0333 ORMEL PROTEINS: CRITICAL REGULATORS OF FINE-TUNING OF THE UNFOLDING PROTEIN RESPONSE IN INTESTINAL INFLAMMATION**

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Introduction: The endoplasmic reticulum (ER) plays a crucial role in maintaining cellular homeostasis by coordinating the processing and folding of secretory and membrane proteins. The accumulation of unfolded or misfolded proteins induces ER stress. The unfolded protein response (UPR) aims at restoring ER function and is comprised of three signaling branches via inositol-requiring enzyme 1...
(IRE1), double-stranded RNA-dependent protein kinase (PKR)-like ER kinase (Plerk) (Fig. S1). Moreover, statistical evaluations in CD patients (Table S1). Defects in ER stress response have been shown to predispose to chronic inflammatory bowel disease (IBD). Genome-wide association studies identified disease susceptibility loci in or adjacent to several UPR related genes including XBP1 and ORMDL3.

Atf6, our results suggest that ORMDL3 function in IPR signaling to gain insights into the molecular mechanisms promoting chronic intestinal inflammation. Using molecular cell biology approaches, we studied the effect of ORMDL3 on ATF6/6, PERK and IRE signaling in ORMDL3 deficient mice. In vivo and in vitro analyses in an acute and chronic DSS-colitis model using Ormd3-deficient mice. This study demonstrates for the first time the modulatory functions of ORMDL3 proteins as regulators of all three UPR signaling pathways. Also, our data suggest that ORMDL3 proteins constitute a precise fine-tuning mechanism of the UPR determining cell fate decisions in response to ER stress.

Conclusion: This study demonstrates the role of ORMDL3 in UPR signaling to gain insights into the molecular mechanisms promoting chronic intestinal inflammation. Using molecular cell biology approaches, we studied the effect of ORMDL3 on ATF6, PERK and IRE signaling in ORMDL3 deficient mice. This study demonstrates for the first time the modulatory functions of ORMDL3 proteins as regulators of all three UPR signaling pathways. Also, our data suggest that ORMDL3 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.

Reference
PO336 RECONSIDERING THE PROGNOSTIC VALUE OF TRADITIONAL SEROLOGIC ANTIBODIES IN CROHN’S DISEASE – IMMUNOGLOBULIN CLASSES TO TAKE THE CENTRE STAGE

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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 classes and their characterisation 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, B1:80.1%, P1:18.0%) and 155 controls were assayed for serologic antibodies. EndoCAb IgA and a panel of non-specific immunoglobulin A (IgA) antibodies (IgA1, IgA2, IgA and secretory IgA) were also assessed by ELISA. An observational follow-up study (median, 143 months) was conducted to assess possible associations between serologic antibodies and the development of various 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. EndoCAb IgA positivity was more frequent (15.4% vs. 5.4%, p = 0.001) and sIgA levels were increased (median, 51 vs. 29 ug/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臻defile 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 enzymatic anti-microbial antibodies was significantly associated with IgA type ASCA (pLogRank < 0.001 and pLogRank = 0.025, respectively), while development of enzymatic anti-microbial antibodies was significantly associated with IgA type ASCA (pLogRank = 0.008). Performance OMP IgA was equal to ASCA IgA, however sIgA was not. Anti-microbial antibodies remained independent predictors in multivariate Cox-regression analysis comprising relevant clinical factors.

Summary of multivariate Cox regression analysis for the association of serologic antibodies with complicated disease course

<table>
<thead>
<tr>
<th>Antibody</th>
<th>HR [95% CI]</th>
<th>p</th>
<th>IP5 in B1 pts</th>
<th>SR in B1 pts</th>
<th>PP in P0 pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCA IgA</td>
<td>2.92 [1.85-4.62]</td>
<td>&lt;0.001</td>
<td>1.77 [1.09-2.87]</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td>ASCA IgG</td>
<td>2.77 [0.36-5.63]</td>
<td>0.005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASCA IgA/IgG</td>
<td>1.10 [0.89-1.35]</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omp IgA</td>
<td>1.89 [0.89-3.96]</td>
<td>0.102</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EndoCAb IgA</td>
<td>2.60 [1.62-4.17]</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Without uncoupling of IgA antibody classes yielded clearly inferior performance. Analysis for IgA type ASCA and Omp IgA revealed that nearly doubled the increase in the proportion of IgA2 subtype (29%) and presence of the secretory component (69% of total ASCA IgA) concurrently.

Conclusion: Consideration of antibody classes is an important novel parameter in serological prediction in CD. Involvement of gut mucosal immune system is in center of IgA type antibody formation reflecting sustained exposure and dysregulated immunresponse to bacterial constituents.

Disclosure of Interest: G.L. Norman: Gary L. Norman is employed by Inova Diagnostics, Inc., San Diego, California and are getting personal fees from the company.

Z. Shums: Zakera Shums is employed by Inova Diagnostics, Inc., San Diego, California and are getting personal fees from the company.

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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) has been newly developed, we aim 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 October 2009 to April 2012, were retrospectively reviewed. Inclusion criteria were: only patients who 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 examination was considered. The primary end point of our study was to evaluate small bowel involvement that is beyond the scope 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 changed in 47 (52.2%) patients, based on DBE findings. The medical treatment escalated in 20 (23%) patients and decreased in 7 (9.1%). Forty-four (24%) patients underwent DBE-assisted balloon dilatation, and 6 (9.6%) patients underwent CD-related surgery.

Conclusion: DBE can be used 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
References


P0339 AGE AND SMOKING KEY TO ADHERENCE IN INFLAMMATORY BOWEL DISEASE? LOW ADHERENCE CAN SERIOUSLY LIMIT DRUG EFFECTIVENESS IN YOUNG PATIENTS

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Introduction: Therapeutic adherence is crucial in the management of patients with inflammatory bowel disease (IBD). Poor adherence may lead to suboptimal control of the disease, decreased quality of life and increased health care costs.

Aims & Methods: 1) To evaluate the prevalence of non-adherence to treatment in Spanish patients with IBD and 2) To identify factors associated with low, medium and high adherence.

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Introduction: Magnetic resonance enterography is now recognized by the European Crohn’s and Colitis Organization (ECCO) as a reference procedure to assess the intestinal involvement of Crohn’s disease (CD), including extra mural complications, as well as to monitor patients under treatment. A new MRI index of severity was developed in 2015 by the GETAID consortium, specifically to evaluate lesions located in the small intestine. This score, labeled CDMRIS (Crohn’s disease magnetic resonance index of severity), considers, for each 20-cm small bowel segment, the intensity of relative contrast enhancement (mild–moderate or severe), deep ulceration without fistula, “comb sign”, any fistula, and abscess. Although well standardized, this index has not yet been validated, either for the initial assessment of CD at diagnosis, or for monitoring patients under treatment. Its feasibility in routine practice has never been tested.

Aims & Methods: The aims of this study were to evaluate the feasibility of applying the CDMRIS score in clinical practice, to evaluate its variability after the initiation or optimization of an anti-TNF treatment, and to measure its correlation with an evaluation of clinical activity. Patients with known small bowel Crohn disease who underwent two MR examinations at 6–12 months were included between 2010 and 2015. Each exam was interpreted twice and the CDMRIS score was calculated on both exams in addition to classical criteria. All patients had a clinical evaluation over time, separating them in two groups: “active” and “inactive” disease.

Results: Seventy-two patients were included, with a mean CDMRIS of 3.4 at baseline, decreasing to 2.6 (p = 0.052) independently of clinical disease activity. The mean interval between the two MRIs was 15.4 months, and there was a significant larger decrease in the CDMRIS score when the interval was above 12 months. Two other radiological parameters decreased significantly: the rate of patients with a mural T2-hyperintensity (36.1% to 20.8% p = 0.042), with a good chimecorrelational correlation, and mean wall thickness (5.5 to 4.4 mm, p = 0.042).

Conclusion: This study demonstrated the feasibility of applying the CDMRIS in clinical practice, but sensitivity was too low to detect early changes. Accuracy for a long-term monitoring needs to be evaluated. Wall thickness and mural T2-hyperintensity emerged as the most sensitive radiological factors, significantly associated with the disease activity, allowing monitoring of the short-term efficacy of biotherapies.

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

References


P0341 CONCORDANCE OF STOOL FREQUENCY AND ABDOMINAL PAIN MEASURES WITH SIMPLE ENDOSCOPIC SCORE FOR CROHN’S DISEASE

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Introduction: Crohn’s disease (CD) with complications such as penetrating, strictureting, and perianal disease are called complicated CD. However, no validated, inexpensive, or sensitive models for prediction of risk are available in complicated CD. We have found that a novel immunological balance, the CD8+CD28+ ratio, was associated with BMI, CD4, and CD8 balance and the risk factors, for the newly diagnosed complicated CD. Seventeen patients with complicated CD were enrolled as the observation group, while the other 48 CD patients with no complications were enrolled as the control group. Peripheral blood samples were drawn from all the 65 newly diagnosed CD patients for CD8+ T cells testing through flow cytometry (FCM) when enrolling. The potential risk factors, including demographic, pathophysiological, and therapeutic factors were compared between the two groups. A 30-week follow-up group was performed, and the CD8+ T cells testing were repeated. The sensitivity and specificity of the CD8+ T cells’ level and balance in predicting were analyzed through receiver operator characteristic (ROC) curves. The cumulative remission lasting rates (CRLRs) under the different risk factors were analyzed using the Kaplan-Meier method.

Results: I. Risk factors: compared with the control CD group, patients with complicated CD had a larger proportion in male (P < 0.001), younger in age (P = 0.019), lower body mass index (BMI) (P < 0.0001), higher prescription rates in immunosuppressants (P = 0.029) and steroids (P = 0.015), as well as a significant higher surgical rate (P = 0.001). Pearson and Spearman correlation analysis showed that CD8+CD28+/CD8+CD28- (the ratio) was associated with BMI, CD4, CD8, and surgery (P < 0.0001). II. Follow-up and dynamic change of the ratios of CD8+CD28+/CD8+CD28- reached the bottom at the 30th week and were significantly lower at the 6th, 22nd, and 30th week during follow-up, in the complicated CD patients when compared to the control ones (all P < 0.05). A shorter lasting time of remission (LTR) was found in complicated CD patients (P = 0.044). ROC curve showed that CD8+CD28+/CD8+CD28- ratio could accurately predict the active stage for the complicated CD patients [area under curve (AUC) of 0.890, and 95% CI of 0.822 to 0.958], and the best sensitivity of 89.2% and specificity of 85.3% were found when the ratio was 1.03. II. Kaplan–Meier analysis: Undergoing of steroid and surgery was closely related to worse outcome for the complicated CD patients, and patients who underwent steroid and surgery had the significantly lower CD8+CD28+/CD8+CD28- ratio and lower CRLRs (all P < 0.05). Conclusion: Depending on steroids and surgery stands for a more severe disease activity and thus disqualifies the immunological balance, which could be the potential risk factors for lower CRLR. This ratio can predict the active stage sensitively for patients with complicated CD. More strategies should be taken when the ratio is to be lower than 1.03.

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

References

Table: Correlation of components of CDAI with SES-CD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Week 12 n=121</th>
<th>Week 52 n=80</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>t</td>
<td>P-value</td>
<td></td>
</tr>
<tr>
<td>Stool frequency*</td>
<td>47.1 (35.2)</td>
<td>0.46</td>
<td>0.001</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>41.0 (29.6)</td>
<td>0.20</td>
<td>0.0007</td>
</tr>
<tr>
<td>General well-being</td>
<td>63.5 (50.2)</td>
<td>0.07</td>
<td>0.19</td>
</tr>
<tr>
<td>Extra-intestinal manifestations</td>
<td>14.0 (16.3)</td>
<td>0.22</td>
<td>0.13</td>
</tr>
<tr>
<td>Diarrhea medications</td>
<td>3.2 (9.3)</td>
<td>0.01</td>
<td>0.002</td>
</tr>
<tr>
<td>Abdominal mass (cm)</td>
<td>0.8 (4.9)</td>
<td>-0.50</td>
<td>0.001</td>
</tr>
<tr>
<td>HCT</td>
<td>21.1 (20.9)</td>
<td>0.35</td>
<td>0.002</td>
</tr>
<tr>
<td>Stool frequency + Abdominal pain</td>
<td>3.2 (6.1)</td>
<td>-0.03</td>
<td>0.56</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.


P0343 BOWEL PREPARATION QUALITY OF NR1006 VERSUS STANDARD 2L PEG WITH ASCORBATE AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

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Introduction: Successful colonoscopy requires effective bowel cleansing. NR1006 is the first 1L polyethylene glycol (PEG)-based bowel preparation, a patented combination optimised for effective bowel cleansing. The MORA study was a multicentre randomised Phase 3 clinical trial using blinded central readers to assess the cleansing efficacy of the overall colon and high-quality cleansing of the ascending colon by NR1006 vs standard 2L PEG with ascorbate (2L PEG + Asc) [1]. This post hoc analysis shows the cleansing assessment by site colonoscopyists, who typically guide clinical decision-making; hence this analysis may be more relevant for clinical practice than previous analyses.

Aims & Methods: In the MORA study 849 patients (males and females, aged 18–85) were randomly assigned in a 1:1:1 ratio to receive i) NR1006 in an evening/morning split-dose (N2D), or ii) NER1006 in a morning-only dose (N1D) or iii) 2L PEG + Asc in an evening/morning split-dose. The 796 subjects who underwent a colonoscopy and were assessed by a treatment-blinded site colonoscopyist included in this analysis. Cleansing was assessed according to the Harefield Classification Scale [2]; following segmental scoring, cleansing of the overall colon was graded from A to D; grades A and B were judged as successful cleansing. Results: The bowel preparation quality of NR1006 showed a statistically significant improvement over 2L PEG + Asc for the overall colon when both treatments were administered as an evening/morning split-dose (P = 0.003; 95% CI: 2.0–10.1%)(Table 1). NR1006 administered either as an overnight split-dose or morning-only dose produced high-quality cleansing of the ascending colon in a statistically significantly higher proportion of patients compared to 2L PEG + Asc (P < 0.001; 95% CI: 7.2–23.1% and P < 0.001; 95% CI: 7.2–22.5% respectively). Conclusion: Colonoscopyists assessed both dosing regimens of NR1006 as having a significantly increased rate of high-quality cleansing of the ascending colon when compared with 2L PEG + Asc: this cleansing is important in ensuring the detection of lesions in the ascending colon. When comparing similar overnight split-dose treatment regimens, NR1006 showed a significantly increased rate of bowel cleansing compared to 2L PEG + Asc.

Disclosure of Interest: J. Manning: Received funding to attend MORA study Investigating Meeting
L. Clayton: 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)

### Table 1: Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>Overall colon 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>NER1006 N2D</td>
<td>263</td>
<td>255 (97)</td>
<td>-</td>
<td>0.003</td>
<td>2.0–10.1</td>
</tr>
<tr>
<td>2L PEG + Asc</td>
<td>270</td>
<td>239 (91)</td>
<td>-5.1–4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NER1006 N1D</td>
<td>263</td>
<td>196 (74)</td>
<td>156 (59)</td>
<td>&lt;0.001</td>
<td>7.2–23.1</td>
</tr>
<tr>
<td>2L PEG + Asc</td>
<td>263</td>
<td>156 (59)</td>
<td>-1</td>
<td>0.681</td>
<td>7.2–23.0</td>
</tr>
</tbody>
</table>

### Results:

- For both preparations, site colonoscopist findings demonstrated similar or higher rates of cleansing success for the overall colon (>95%) and high rates of high-quality cleansing of the ascending colon (>73%), although statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists were notably higher than those previously reported by central readers.

### Conclusion:

For both preparations, site colonoscopist findings demonstrated similar or higher rates of cleansing success for the overall colon (>95%) and high rates of high-quality cleansing of the ascending colon (>73%), although statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists were notably higher than those previously reported by central readers.
Table 1: A comparison of bowel cleansing efficacy as assessed by site colonoscopy: patients were graded according to the En bloc cleansing and the quality of life. Patients were classified according to their clinical parameters, such as the Crohn's Disease Activity Index (CDAI) and quality of life (QoL). However, no reports have demonstrated this relationship using not only clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrosis.

**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 fibrosis formed during healing of inflammation. We consider it important to demonstrate the relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrosis.

**Discourse 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

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**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 anticoncettive effects, suppressing fibrosis, and as a regulator of the immune system. In light of these new roles, vitamin D 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 not only clinical parameters, such as mucosal activity, mucosal inflammation, and intestinal fibrosis.

**Aims & Methods:** The aim of this study was to clarify the relationship between vitamin D deficiency and CD activity using endoscopic parameters, as well as clinical parameters. Of the CD patients visiting Nagoya University Hospital from May 2011 to February 2016, 82 patients were enrolled in this study. Serum 25-hydroxyvitamin D (25(OH)D) levels, disease activity, and clinical factors of the subjects 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 fibrotic stenosis), we divided SES-CD score into endoscopic mucosal inflammation score and fibrosis score. No mucosal inflammation was defined as mucosal inflammation score ≤ 1, fibrosis score was defined as narrowing score 0. The primary endpoint of this study was the relationship between 25(OH)D and clinical activity. Secondary endpoint was the relationship between 25(OH)D and endoscopic findings, including mucosal healing, mucosal inflammation, and intestinal fibrosis.

**Results:** Mean age of the subjects was 41.1l, 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 serum 25(OH)D and serum albumin and positive C-reactive protein (CRP) results were correlated with clinical activity. Mean serum 25(OH)D levels of 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 ± 8.5 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 fibrotic stenosis of CD (P < 0.05; logistic regression analysis).

**Conclusion:** This study demonstrated the relationship between vitamin D level and disease activity in patients with UC. The disease pathology of UC consists of repetitive intestinal inflammation and intestinal fibrosis formed during healing of inflammation. We consider it important to demonstrate the relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrosis.

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

**References**


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**Disclosure of Interest:** Inflammatory Bowel Disease (IBD), mainly represented by Crohn’s Disease (CD) and Ulcerative Colitis (UC), is a chronic, relapsing and remitting disease impairing patients’ quality of life (QoL). To maintain a high QoL and to decrease the inflammation burden, it is important to tightly monitor the disease and promptly treat relapses when they occur. The quality of care perceived by IBD patients play an important role in the management of IBD. An eHealth web application consisting of a validated Fecal Calprotectin (FC) home testing kit (Calpro SmartTM), questionnaires regarding disease activity and QOL has been developed to improve disease monitoring, patient empowerment and patient-caregiver communication.

**Aims & Methods:** The aim of this study was to evaluate patient satisfaction with an eHealth home monitoring solution during the participation in a one year trial. The trial includes 120 adult IBD patients which have been randomized into two groups; one performing a disease activity screening procedure every 3 months (3M) and the other screening only at the patient’s discretion, on demand (OD). Both groups used the web-program where they were requested to fill out a disease activity questionnaire, Harald-Bradhav Index (HBI) for CD or Simple Clinical Colitis Activity Index (SCCAI) for UC, and perform a home testing of FC. The results were compared by disease activity questionnaire and FC score. For disease activity questionnaire and FC score, the patients were requested to fill out a QOL questionnaire (Short- Inflammatory Bowel Disease Questionnaire (s-IDQ) as well as a questionnaire regarding their overall satisfaction with the trial and the home monitoring solution.

**Results:** To date, 83 patients have been included, 15 patients have dropped out (7 in OD-group and 8 in 3M-group) and 68 (3M-group: n = 32, 47%; OD-group: n = 36, 53%) patients have fulfilled the first year of follow-up and were included in the analysis. The trial lived up to the expectations in n = 63, 93% (3M-group: n = 29, 91%; OD-group: n = 34, 94%) of the patients and the support given to the patients was estimated to be sufficient by n = 67, 99% (3M-group: n = 31, 97%; OD-group: n = 36, 100%). Only n = 14, 21% (3M-group: n = 6, 19%; OD-group: n = 8, 22%) of the patients experienced difficulties with the application or the home testing kit and n = 64, 94% (3M-group: n = 29, 91%; OD-group: n = 35, 97%) wanted to continue to be monitored in an EHealth setting in the future. The mean s-IDQ scores at baseline were 58 (95% CI: 55–61) in the 3M-group and 54 (95% CI: 59–58) in the OD-group as well as 58 (95% CI: 54–62) in the 3M group and 61 (95% CI: 58–64) in the OD group at one year follow up. No difference in s-IDQ measured QOL was found between the two groups. However, patients in the OD group had a significant increase in mean S-IDQ score at follow up (P = 0.04).

**Conclusion:** Patients in both groups were generally satisfied by the home monitoring set up. Patients in the on-demand group also presented a significant increase in quality of life over time.

**Disclosure of Interest:**

- P. Weimers: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.
- D. Marker: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.
- D.V. Andersen: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.
IBD patients. Multivariate analysis using Cox regression model demonstrated the association revealed that the SMI has a strong correlation to body weight and O-PNI in patients (P = 0.032) using Kaplan-Meier method and log-rank test.

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 3-28 weeks (mean 8.5 months), mean age 35 years, 35 female, 21 male, 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 and >2 were age (41 vs. 28 years, p=0.0011), CRP <2 mg/l (17/28 patients vs. 0/28, p <0.0001), endoscopic score 1.4 vs. 2.7, p <0.05), perianal lesions 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, a significant proportion of patients with mild CD and simple mesalamine 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.

Disclosure of Interest: W. Kruis: Financial Support for Research/Consultancy: Falk, Ferring, Genetic Analysis, Institut Allergosen, Nikkiso, Otuka, Shire, Tigexis; Lecture fees(s): AbbVie, Ardeyoharm, Ferring, Genetic Analysis, Institut Allergosen, Nikkiso, Otuka, Recordati, L. Leifeld: Financial Support for Research: Boehringer, Olympus, DCCV; Lecture fees(s): Falk, AbbVie, MSD, Merckle, Falk, Takeda, B. Bokemeyer: Lecture fees(s): AbbVie, Biogen, Consulancy: Invendo medicals; P. Conde: Employee of Ferring Arzneimittel GmbH, B. Reimers: employee of Ferring Arzneimittel GmbH, N. Hoepffner: Lecture fee(s): AbbVie, MSD, Shire, Ferring, UCB, Hospira, Takeda, Movetis, Shiel, Janssen, Pflizer, Hexal, Boehringer, Biogen, Merckle, Falk, HLR, Mundipharma, Celltrion; All other 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

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Introduction: Crohn’s Disease (CD) spans a wide severity range, from mild to severe, and the avoidance under- as well as overtreatment is challenging. 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 considered CD patients (diagnosis ≥5 weeks) were included. An initial 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 (≥2) or of mild clinical appearance mesalamine 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 mesalamine 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: In total, 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 therapy</th>
<th>Prevalence of LTI in patients on anti-TNF therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST/booster/QFT (+)</td>
<td>130/399 (32.6%)</td>
<td>47/239 (28.5%)</td>
</tr>
<tr>
<td>TST/booster (+)</td>
<td>116/371 (31.3%)</td>
<td>40/163 (24.5%)</td>
</tr>
<tr>
<td>TST/booster/QFT (+)</td>
<td>28/272 (10.3%)</td>
<td>6/105 (5.7%)</td>
</tr>
<tr>
<td>TST/booster/(-)QFT (+)</td>
<td>12/264 (4.5%)</td>
<td>3/98 (0.8%)</td>
</tr>
</tbody>
</table>

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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 IGRA as using QUANTIFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zarona (Spain). In a single cohort of IBD patients attended in the department of gastro-entology of Zarona 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 LT 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.
Prevalence of LTI in retrospective testing was of 54.246 (22.0%). Prospective testing of 201 patients (CDAI > 150) by CDAI revealed 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 capsule and QFT results in QFT+ population. The TST booster increases the detection of LTI even when is performed in patients without immunosuppressive treatments, in whom is not routinely recommended. The QFT is more useful in patients without immunosuppressive therapy. The results of QPT or even two years is useful in this population with high prevalence of LTI, since it may detect LTI in patients with previous negative tests (15.7%). The TST booster is essential due to the possible false negatives of QFT when screening patients on anti-TNF therapy.

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

References


P0351 MAGNETIC RESONANCE ENTEROGRAPHY GLOBAL SCORE ALLOWS FOR ACCURATE QUANTIFICATION OF SMALL BOWEL INFLAMMATION IN CROHN’S DISEASE: A COMPARISON WITH CAPSULE ENDOSCOPY

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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 jejunal and ileal inflammation may be underestimated. Magnetic resonance enterography global score (MEGS) was designed for quantification of small bowel inflammation on MRE. It is unclear whether these indexes are interchangeable for evaluation of mucosal inflammation in established CD.

Aims & Methods: We aimed to prospectively 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 duodenum vs LS 1st tertile and proximal ileum vs 2nd tertile LS - both p < 0.001). Moderate correlation between both scores and FCP p < 0.001 for both. There was a weak correlation between LS and CRP p < 0.04 for both.

Conclusion: In our prospective study, CE and MEGS scores are 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 trust. All other authors have declared no conflicts of interest.

P0352 WHICH ONE IS BETTER FOR ASSESSMENT OF ESTABLISHED CROHN’S DISEASE BY CAPSULE ENDOSCOPY: THE LEWIS SCORE OR THE CAPSULE ENDOSCOPY CROHN’S DISEASE ACTIVITY INDEX?

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Introduction: Small-bowel capsule endoscopy (CE) is a prime modality for evaluation of the small bowel. The Lewis score (LS) and the Capsule Endoscopy Crohn’s Disease Activity Index (CECDAI) are validated endoscopic indices for quantification of small bowel inflammation on CE. It is unclear whether these indexes are interchangeable for evaluation of mucosal inflammation in established Crohn’s disease (CD).

Aims & Methods: We aimed to prospectively compare the quantitative evaluation of the small bowel inflammation by MEGS (for duodenum vs LS 1st tertile and proximal ileum vs 2nd tertile LS - both p < 0.001). Moderate correlation between both scores and FCP levels that was somewhat stronger for CE (p = 0.39, p = 0.002 vs p = 0.53, p = 0.001 for both). There was a weak correlation between LS and CRP levels that (p = 0.27, p = 0.04) and none for CECDAI and CRP (p = 0.21, p = 0.1).

Conclusion: Diagnostic Imaging, Sheba Medical center, Ramat Gan/Israel

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

P0353 CONCORDANCE BETWEEN TUBERCULIN SKIN TEST AND INTERFERON GAMMA RELEASE ASSAY FOR LATENT TUBERCULOSIS SCREENING IN INFLAMMATORY BOWEL DISEASE (META-ANALYSIS)

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Introduction: Screening for latent tuberculosis infection (LTI) is mandatory prior to initiating anti-tumor necrosis factor (anti-TNF) medications. New guidelines recommend interferon-gamma release assays as first line screening method for the general population. Studies have provided conflicting evidence on the performance of interferon-gamma release assays (IGRAs), compared to tuberculin skin test (TST) in inflammatory bowel disease (IBD) patients. We assessed the concordance of these two tests in IBD patients and the effect of immunosuppression on their performance.

Aims & Methods: We performed a systematic search of MEDLINE, EMBASE and Cochrane Library databases, from 2011 to 2016, for relevant studies testing both TST and IGRA in IBD patients. The primary outcome was concordance between TST and IGRA. Secondary outcomes were effects of immunosuppressive therapy on both TST and IGRA. Immunosuppression was defined as either steroids more than 5 mg for at least two weeks, thiopurine, methotrexate or cyclosporine. We used the Mantel-Haenszel method for a pooled random effects model, given heterogeneity of studies included. We also compared the fixed effects model to exclude any effect of smaller studies. Heterogeneity between studies was analysed using the statistical I2, Q and Tau 2 tests. The quality of included studies was evaluated using a modified QUADAS-2 method.

Results: Sixteen studies, including 2488 patients with IBD, were included for the analysis. The pooled concordance between the TST and IGRA was 85% (95% confidence interval [CI] 81%-88%, p = 0.01). Effects of immunosuppression on both tests were reported in eight studies including 814 patients with IBD. The odds ratio of testing positive by TST if immunosuppressed was 1.14 (95% confidence interval [CI] 0.31–1.03, p = 0.06). The odds ratio of testing positive by TST if immunosuppressed was 1.09 (95% confidence interval [CI] 0.31–1.03, p = 0.06). The odds ratio of testing positive by TST if immunosuppressed was 1.09 (95% confidence interval [CI] 0.31–1.03, p = 0.06).

Conclusion: While concordance was 85% between TST and IGRA, the performance of IGRA seems to be negatively affected by immunosuppression. Given the importance of detecting latent TB prior to anti-TNF initiation, using only IGRA should be avoided in immunosuppressed IBD patients.

Disclosure of Interest: W. Afif: Abbvie, Janssen, Takeda, Merck, Pfizer, Shire, Ferring, Theradiag

All other authors have declared no conflicts of interest.
A. Ochieng. IS THE BEST METHOD TO MEASURE MEDICATION ADHERENCE? A284

Introduction: 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 IB clinic and to correlate the results with thiouguaine-nucleotide (TGN) levels.

Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for > 3 months were recruited from clinic. Patients self-reported adherence using three tools (drug usage scale (VAS), the validated Morsky 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 9 patients (25% with 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% (Morsky) and 77% (MARS). VAS (Pearson 0.215; p = 0.005) and Morsky (Pearson 0.036; p = 0.001) correlated moderately with TGN, but MARS (Pearson 0.09; p = 0.39) did not. The patients who were non-adherent by TGN were detected by VAS in 3, Morsky in 6 and MARS in 3 cases. However, patients showing non-adherence according to self-report tools had lower TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morsky 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 assessment 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 nor self-report tools can be seen as the gold standard at present.

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

References

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R. Goldberg, G. Cunningham, G. Moore, et al., Thiopurine metabolite testing in inflammatory bowel disease, Dept. of Gastroenterology, Melbourne, Australia, 21st Vincent’s Hospital & University of Melbourne, Gastroenterology, Medical School, VUMC (UCS) -2014(ECOCO)
McClure et al., Non-adherence to medical therapy is associated with hospitalisations and the development of active disease in inflammatory bowel disease, Dutch study-clinical presentation -2016(ECOCO)

A. Ochieng. IS THE BEST METHOD TO MEASURE MEDICATION ADHERENCE? A284

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Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for > 3 months were recruited from clinic. Patients self-reported adherence using three tools (drug usage scale (VAS), the validated Morsky 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 9 patients (25% with 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% (Morsky) and 77% (MARS). VAS (Pearson 0.215; p = 0.005) and Morsky (Pearson 0.036; p = 0.001) correlated moderately with TGN, but MARS (Pearson 0.09; p = 0.39) did not. The patients who were non-adherent by TGN were detected by VAS in 3, Morsky in 6 and MARS in 3 cases. However, patients showing non-adherence according to self-report tools had lower TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morsky and 4 of 15 for MARS.

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

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R. Goldberg, G. Cunningham, G. Moore, et al., Thiopurine metabolite testing in inflammatory bowel disease, Dept. of Gastroenterology, Melbourne, Australia, 21st Vincent’s Hospital & University of Melbourne, Gastroenterology, Medical School, VUMC (UCS) -2014(ECOCO)
McClure et al., Non-adherence to medical therapy is associated with hospitalisations and the development of active disease in inflammatory bowel disease, Dutch study-clinical presentation -2016(ECOCO)
Conclusion: Our study is the first to report the presence and impact of AIEC in CD patients and to demonstrate the potential of CEACAM6 as a minimally invasive biomarker of AIEC infection. We propose that CEACAM6 levels can be used as a screening tool to identify CD patients with a high risk of AIEC infection who could benefit from targeted treatments. 

References

P0357 IDENTIFICATION OF NON-INVASIVE BIOMARKERS TO DETECT ILEAL CEACAM6 OVEREXPRESSION AND ADHERENT ENTEROBACTERIA IN INFILTRATED ILEUM OF PATIENTS WITH ILEAL CD: RESULTS FROM THE CEALIVE MULTICENTER STUDY


Aims & Methods: Aims & Methods: We aimed to assess the correlation between the level of CEACAM6 in the ileal mucosa of CD patients with the presence of AIEC in the ileal mucosa. We used a prospective multicentre study (8 centers) to evaluate the expression of CEACAM6 in the ileum of CD patients and to correlate it with the presence of AIEC in the ileal mucosa.

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>Parameter</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
<th>Accuracy %</th>
<th>PPV %</th>
<th>NPV %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location &amp; extension</td>
<td>80 (0.50–0.93)</td>
<td>94 (0.70–0.95)</td>
<td>85 (0.70–0.95)</td>
<td>75 (0.76–0.99)</td>
<td>75 (0.76–0.99)</td>
</tr>
<tr>
<td>Bowel wall enhancement</td>
<td>80 (0.55–0.94)</td>
<td>88 (0.65–0.94)</td>
<td>84 (0.69–0.94)</td>
<td>86 (0.66–0.98)</td>
<td>80 (0.56–0.94)</td>
</tr>
<tr>
<td>Strictures</td>
<td>76 (0.59–0.93)</td>
<td>79 (0.57–0.93)</td>
<td>78 (0.62–0.89)</td>
<td>72 (0.46–0.90)</td>
<td>82 (0.61–0.95)</td>
</tr>
<tr>
<td>Fistulas</td>
<td>100 (0.16–1)</td>
<td>97 (0.86–0.99)</td>
<td>97 (0.87–0.99)</td>
<td>96 (0.90–0.99)</td>
<td>100 (0.90–1)</td>
</tr>
<tr>
<td>Abscesses</td>
<td>100 (0.02–1)</td>
<td>95 (0.83–0.93)</td>
<td>99 (0.83–0.93)</td>
<td>93 (0.01–0.99)</td>
<td>100 (0.90–1)</td>
</tr>
<tr>
<td>Active disease</td>
<td>83 (0.55–0.96)</td>
<td>100 (0.85–1)</td>
<td>97 (0.80–0.98)</td>
<td>100 (0.78–1)</td>
<td>88 (0.69–0.97)</td>
</tr>
</tbody>
</table>

Conclusion: Our study is the first to report the presence and impact of AIEC in CD patients and to demonstrate the potential of CEACAM6 as a minimally invasive biomarker of AIEC infection. We propose that CEACAM6 levels can be used as a screening tool to identify CD patients with a high risk of AIEC infection who could benefit from targeted treatments.
Ileal CEACAM6 level did not depend on disease severity or the site of biopsies, as the median level of ileal CEACAM6 was 854 pg/mg [570.9; 1646] and there was no difference in healthy or ulcerated zones (756 pg/mg [487; 1617] vs 947 pg/mg [604; 1820], p = 0.86). The median level of CEACAM6 from saliva was 3837 pg/ml [1889; 7338]. There was a positive correlation between the levels of CEACAM6 in saliva and CEACAM6 in the ileum (r = 0.47; p < 0.0001) in both macroscopically healthy areas (r = 0.53, p < 0.0001) and ulcerated areas (r = 0.39, p = 0.0082). Using a ROC curve, we determined the best threshold of CEACAM6 in saliva for detecting ileal CEACAM6 activity. Using a ROC curve (area under the curve (AUC) = 0.73), the cut-off value of 3800 pg/mg demonstrated the best performances to detect ileal CEACAM6 overexpression with substantial specificity (76.0% [54.9-90.6]) and positive predictive value (67.5% [74.9-95.3]). The number of enterobacteria was increased in CD patients with prior intestinal resection (562 [20164] vs. 116 [0;752] pg/mg, p = 0.03). Interestingly, the number of enterobacteria was also increased in AIEC positive-patients (640 [601029] vs. 60 [0;1029] pg/mg, p = 0.004). Using a ROC curve, we determined the best threshold of enterobacteria in the ileum to detect the presence of ileal AIEC bacteria. We found an area under the curve (AUC) of 0.70 (0.61; 0.77). The cut-off value of 60 cfu/biopsy demonstrated the best performances to detect the presence of ileal AIEC bacteria. The number of enterobacteria associated to ileal mucosa (cut-off value >60 cfu/biopsy) strongly predicted the presence of AIEC and then is a reliable test for AIEC screening with very high negative predictive value (94.1% [80.3-99.3]) and high sensitivity (91.7% [73.0-99.0]).

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 identify that the number of enterobacteria associated to the ileum is 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 authors have declared no conflicts of interest.

References
Introduction: Increasingly, immunosuppressive medications such as azathioprine and mercaptopurine are used in order to prevent relapse in 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 in particular gastroenterologists should counsel 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 prevention methods as recommended by the “Sunsmart” guidelines, as currently gastroenterology based guidelines are lacking. In addition their grade of training and clinical experience was noted.

Results: To date, 45 Irish Gastroenterology clinicians completed the online questionnaire. Of these, fifteen (33%) were consultants, fourteen (31%) gastroenterology trainees, four (9%) general medical trainees and twelve (27%) IBD nurse specialists. Overall, clinician’s knowledge of general factors associated with increased risk of skin cancer was reassuring; with all 45 (100%) knowing sun beds increased skin cancer risk and almost 100% (44, 98%) knew working outdoors incurred increased risk. 42 (93%) knew a personal history of skin cancer and previous blistering sunburn were risks; however, only 34 (79.1%) recognised family history as a risk. Regarding gender associated risk; only 67.4% (n = 29) knew men were greater risk than women of non-melanoma skin cancer (NMSC). Their knowledge of specific immunosuppressant risk was suboptimal; while many (37, 82%) recognized azathioprine was a risk factor for developing NMSC, only 22 (49%) knew anti-TNF treatments were strongly associated with 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, but shockingly only five (11%) perform yearly skin checks on their patients on immunosuppressants. Their knowledge of preventative measures was also lacking; 37 (86%) knew patients should 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. Regards 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 sunprotection 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 immunosuppressant 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.

Reference
Conclusion: Association of serum S100A4 protein with UC and CD was confirmed. In CD, disease behaviour did not have impact on serum concentration of S100A4 protein. In CD, higher levels of serum S100A4 were observed in patients with ileo-colonic and colonic involvement compared to those with isolated small bowel involvement.

Acknowledgements The study was supported by the Research Project PROGRES Q40–15 from Charles University.

P0364 SEVERE VITAMIN D DEFICIT IN ACTIVE INFLAMMATORY BOWEL DISEASE
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Introduction: Hypovitaminosis D is common in Inflammatory Bowel Disease (IBD) patients. Some studies suggest that the finding may relate to severity of the disease.

Aims & Methods: The aim of the study was to determine the VitiD 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 sex, age (+/-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 ≤20 ng/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 < 0.0001). Age ≤40 and ≥60 years, winter/spring season, CRP ≥0.5 mg/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.

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 IBD patients. Some studies suggest that the finding may be related to severity of the disease.

P0366 GASTRODUDENAL INFECTION IN PATIENTS WITH CROHN’S DISEASE – UPPER ENDOSCOPY ONLY IN SYMPTOMATIC PATIENTS?

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Introduction: The need for upper endoscopy in patients with Crohn’s disease (CD) without symptoms is controversial. The aim of this study was to establish the prevalence of gastroduodenal infection, 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% strictureing and 19% penetrating; Location: 42% ileal, 45% duodenal 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 erthymematous mucosa (18%). Biopsies were performed in 56% of patients: chronic gastritis 66%, normal 23%, granuloma 5%, focal gastritis 2% and cryptic microabcess in 2%. HP was positive in 25% of patients. In the ileum, macroscopic lesions were detected in 24% of the patients; erosions (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.

P0365 MAGNETIC RESONANCE OF THE SMALL BOWEL WITH EARLY (70 MINUTES) (7MINS) PHASE POST GADOLINIUM IMAGING TO IDENTIFY FIBROSIS IN STRICTURING SMALL BOWEL CROHN’S DISEASE
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Introduction: Small bowel (SB) Crohn’s disease (CD) strictures can be comprised of both inflammatory and fibrotic elements. An accurate tool to discriminate fibrosis and inflammation would be clinically useful to guide therapy and predict response. While the magnetic resonance index of activity (MaRIA) is a validated means to assess activity, to date, no specific tool has been developed to identify fibrotic from inflammatory disease. Lesions with a dense fibrotic margin exhibit delayed gadolinium enhancement on MRI. The role of delayed enhancement in assessment of SB CD strictures is unclear. Recent evidence suggests relative contrast enhancement (RCE) of >24% on delayed MRI sequences may accurately detect fibrosis.

Aims & Methods: To determine the feasibility of MRI SB stricture assessment with early (70s) and late (7mins) phase post gadolinium imaging comparing MaRIA, RCE and biochemical activity in patients with ideal CD. We performed a retrospective review of 208 consecutive MREs with known and suspected SBCD. MRE was performed as standard with additional coronal T1 sequences 7 minutes post gadolinium administration. Demographics, MRI findings and biochemical markers were recorded. Patients with stricture disease were further assessed. Two independent blinded Radiologists calculated RCE and MaRIA’s at 70 sec and 7 min.

Results: Median age 40.5 years; male n =83(39.9%), 117, 72 and 19 patients had known CD, suspected CD and indeterminate IBD, respectively. In total, 119(57.2%) MREs were normal. Ileitis, strictures and fistulas were found in 40(19.2%), 49(23.6%) and 10(5.1%) patients, respectively. While there was no difference in Hb between patient groups (Normal, Inflammatory and Stricture Disease); Albnum and CRP were statistically different between normal subjects and those with disease; albumin 42±2 g/L v 38.9±1 g/L in normal v stricture disease (p < 0.0181 95% CI -0.23 --0.02), CRP 8.8±3 g/L v 18.3±1 mg/L (p < 0.003 95% CI -0.46 --0.10) and v 29±mg/L (p < 0.002 95% CI -0.43 --0.11) amongst normal v inflammation and stricture respectively. Neither parameter could differ entiate between inflammatory and stricture disease. 26 MREs performed with ileal CD have been further assessed; median age =41 yrs, male =10(38%). RCE >24% and high T2 signal intensity (SI); 6/26 (23%) and 11/26 (42%). RCE increased in only 1/10 with a visible stenosis. Average MaRIA: 2/7 (7.7%) < 7 mm; 3/26 (11.5%) ≥11 moderate; 21/26 (80.7%) >11 severe. MaRIAs did not change significantly between 70 sec and 7 min. As expected T2 SI increased with MaRIAs; >11, ≥16 v 13 (p < 0.001, 95% CI 7.7–17.27). RCE did not correlate with MaRIs suggesting there is no a predictive factor for fibrosis. Consistent with MRE findings, CRP was higher in patients with MaRAl >11(13.3 ± 5.2) and lower in patients with RCE >24% (3.9 ± 14).

Conclusion: Unlike biochemical markers, MRI may be a useful means to differentiate between inflammatory and stricture disease. Further study is required to assess the long-term predictive value. RCE may be a useful adjunct to current MRI and help detect fibrosis in small bowel lesions and warrants further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: A total of 520 patients who underwent CT enterography were identified, with median age of 42 years (range 17–79) and 52% were women. The main indication for CT enterography was CD staging (81%). A total of 351 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 saccular cysts (n = 46). The findings implicated orientations to another medical specialty in 80 patients (29%), the main ones being Urology (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%); 1 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

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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. difficile 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 colectomy, 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) and Ulcerative colitis Disease Activity Index (UCDAI) in ulcerative colitis (UC). The secondary outcomes were the proportion with asymptomatic carriage of C. difficile in IBD patients. The proportion with asymptomatic carriage of C. difficile was compared between the non-carriage and carriage groups in which all these flares were under-controlled by course of high-dose prednisolone.

The asymptomatic carriage group had a significant higher rate (33.33 vs. 7.45%, p = 0.007) and earlier onset (18.78 vs. 34.42 months, log rank p = 0.009). Mann-Whitney U, p 0.037) in evolving into clinical C. difficile infection as compared with the non-carriage group.

No other serious complications, such as toxic megacolon, colonic perforation, sepsis, and death, were reported in the both groups during the study period.

Clinical characteristics of the IBD patients with and without asymptomatic carriage of C. difficile

<table>
<thead>
<tr>
<th>Non C. difficile carrier (n = 188)</th>
<th>C. difficile carrier (n = 9)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Yr)</td>
<td>43(26)</td>
<td>44(33)</td>
</tr>
<tr>
<td>Sex (m/f)</td>
<td>128(60)</td>
<td>4.5</td>
</tr>
<tr>
<td>Smoker (n, %)</td>
<td>24(12.77)</td>
<td>1(11.11)</td>
</tr>
<tr>
<td>Year of Diagnosis (Yr)</td>
<td>7(9)</td>
<td>7(13)</td>
</tr>
<tr>
<td>Crohn disease (n, %)</td>
<td>92(49.48)</td>
<td>66.67%</td>
</tr>
<tr>
<td>Prior exposure of Anti-TNF (n, %)</td>
<td>4(2.13)</td>
<td>11(11.1)</td>
</tr>
<tr>
<td>Flare up (n, %)</td>
<td>21(11.17)</td>
<td>2(22.22)</td>
</tr>
</tbody>
</table>
| mild/moderate/severe            | 16(5.6)                  | 2(0.0) | 0.165/0.617
| C. difficile infection (n, %)    | 14(7.45)                 | 3(33.33)| 0.007 |

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 PATIENTS: FIRST ANALYSIS FROM THE TRUST&UC STUDY IN GERMANY

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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 recent years it has already been shown that ultrasound is a useful tool to monitor the disease activity.1 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 0–1017). Of all the patients with a clinical flare defined by SCCAI >450: severe/fulminant) and Ulcerative colitis Disease Activity Index (UCDAI) >150: remission; 150–450: mild; 450: moderate-severe; and UCDAI >750: severe flare.


stratification was the case in 20.6% of the patients, as well as the easy accessibility of the monitoring program are crucial 

stratification was the case in 20.6% of the patients, as well as the easy accessibility of the monitoring program are crucial

References


P0371 SELF-MONITORING OF THE COLONIC INFLAMMATORY BOWEL DISEASE BY A RAPID HOME BASED FEACCAL CALPROTECTIN TEST AND A SYMPTOM QUESTIONNAIRE

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Introduction: Feaccal calprotectin (FC) is a most reliable noninvasive means to distinguish remission from active inflammation in inflammatory bowel disease (IBD) and 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 at 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 was evaluated in both groups.

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.
P0373 CAN WE PREDICT THE LACK OF RESPONSE TO CYCLOSPORINE AS SECOND LINE THERAPY IN PATIENTS WITH ACUTE SEVERE COLITIS REFRACTORY TO CORTICOSTEROIDS?


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Introduction: Acute severe colitis (ASC) is a dangerous clinical condition that requires intensive intravenous (iv) corticosteroids treatment. Nevertheless, about 30-40% of patients fail to respond. Intravenous cyclosporine is an effective rescue therapy in steroid-refractory patients.

Aims & Methods: The aim of our study was to identify the clinical and biological predictive factors of lack of response to cyclosporine as second-line therapy in patients with ASC refractory to iv corticosteroids.

Results: Our study included 52 females and 38 males, with a mean age of 35 years (14-70 years). There were 34 patients with Crohn’s disease and 56 diagnosed with ulcerative colitis. Among the 90 patients enrolled, 68 patients (75.5%) had a good response to cyclosporine. Eleven patients were non responders and underwent second option treatment. A multiple linear regression analysis, more than 6 bloody stools per day before initiation of cyclosporine therapy, a C-Reactive Protein (CRP) greater than 45 mg/l prior to treatment, and at day 3 and 7 of treatment by ciclosporine (p = 0.007; 0.02 and 0.01 respectively), ESR greater than 30 mm at day 7 of treatment (p = 0.05), thrombocytosis at day 3 of treatment (p = 0.05), a Lichtiger colitis activity index scoring greater than 10 at day 3 of treatment (p = 0.001) and the need for blood transfusion (p = 0.0001) were significantly correlated with the lack of response to cyclosporine therapy. In a multiple linear regression analysis, only a CRP greater than 45 mg/l on day 7 of treatment, and the necessity of transfusion were predictive factors of no-response to cyclosporine (p = 0.008).

Conclusion: Cyclosporine therapy is rapidly effective in preventing surgery in patients with ASC with a response rate of 75.5%. A high CRP on day 7 of treatment with cyclosporine and the need for transfusion, predispose to poor response to intravenous cyclosporine.

Disclosure 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 BIOLOGICAL ERA IN HUNGARY: A NATIONWIDE STUDY BASED ON THE NATIONAL HEALTH INSURANCE FUND DATABASE


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Introduction: Accelerated treatment strategy, including tight disease control and immunosuppressive therapy with non-steroidal immunomodulators (IM) and biological agents have become increasingly common in IBD.

Aims & Methods: The aim of the present study was to estimate the early treatment strategy and outcomes in newly diagnosed patients with Crohn’s disease (CD) diagnosed between 2004-2015 in Hungary based on the administrative database of the National Health Insurance Fund (OEIP). We used the administrative database of the National Health Insurance Fund (OEIP), the only nationwide state-owned health insurance provider in Hungary. Newly diagnosed CD patients were identified through a previously reported algorithm using ICD-10 LOINC codes for Crohn’s disease in the out-, 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. 11.5% p = 0.81, 5-ASA + anti-TNF: 64.0% vs. 63.5% p = 0.81, 5-ASA + anti-TNF: 30.5% vs. 30.5% p = 0.81). The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAG group than ST group.

In patients with intraepithelial neoplasia (IEN) or submucosal lesions, flat lesion was found in 15 lesions of CAG group and whereas no flat lesion was observed in ST group. The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAG group than ST group. The percentage of advanced cancer in 15 lesions of CAG group was found in 15 lesions of CAG group whereas no flat lesion was observed in ST group. The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAG group than ST group.

Conclusion: Most sporadic lesions were endoscopically distinct and local resection was safe if inflammation was controlled. After the sporadic lesions were resected in remitting UC patients, regular surveillance colonoscopy is necessary for the follow-up. In CAG group, 50, 5, 4 patients received total colectomy, local colectomy, EMR and polypectomy, respectively.

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

P0375 RELATIVE FREQUENCY OF RELAPSES IN PATIENTS WITH ULCERATIVE COLITIS AND CROHN’S DISEASE TREATED WITH MESENCHYMAL STEM CELLS - 5 YEARS OF FOLLOW-UP

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Introduction: Numerous studies have shown that mesenchymal stromal cells (MSCs) have a high potential for differentiation and immunosuppressive properties. Currently under phase I and II clinical trials evaluating the efficacy and safety of MSCs in the treatment of patients with inflammatory bowel disease - ulcerative colitis and Crohn’s disease.

Aims & Methods: We aimed to compare the frequency of relapses and duration of remission for 5 years of follow up in patients with luminal Crohn’s disease (CD) and the total defeat of ulcerative colitis (UC) receiving therapy with mesenchymal stromal cells (MSCs), bone marrow. We compared the frequency of relapses in patients with luminal form of disease and patients with UC (total lesion) receiving MSCs. A group of patients (CD) aged 22 to 56 years (Me-28) (n = 47 cases) and 55.7% (n = 47 cases) p = 0.000; 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 were not significantly different, suggesting that maximal treatment steps can be used as proxy marker of severity in CD. Hospitalization rates during the first 3 years after the diagnosis decreased in all treatment groups, suggesting a change in the patient management.

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

P0376 CELL THERAPY FOR PERIANAL CROHN’S DISEASE

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Aims & Methods: We aimed to compare the frequency of relapses and duration of remission for 5 years of follow up in patients with luminal Crohn’s disease (CD) and the total defeat of ulcerative colitis (UC) receiving therapy with mesenchymal stromal cells (MSCs), bone marrow. We compared the frequency of relapses in patients with luminal form of disease and patients with UC (total lesion) receiving MSCs. A group of patients (CD) aged 22 to 56 years (Me-28) (n = 47 cases) and 55.7% (n = 47 cases) p = 0.000; 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 were not significantly different, suggesting that maximal treatment steps can be used as proxy marker of severity in CD. Hospitalization rates during the first 3 years after the diagnosis decreased in all treatment groups, suggesting a change in the patient management.

Disclosure of Interest: All authors have declared no conflicts of interest.
AZATHIOPRINE MESENCHYMAL STROMAL CELLS OF BONE MARROW AND fistula, compared with antibiotics/immunosuppressant. lesions significantly contributes to more frequent and prolonged closure of simple
Conclusion: After one year of continuous treatment with AZA when administered MSCs significantly reduces the levels of pro-inflammatory cytokines, which could have a more pronounced anti-inflammatory therapeutic effect.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0378 EFFICACY AND SAFETY OF RECTAL 5-AMINOSALICYLIC ACID VERSUS CORTICOSTEROIDS IN ACTIVE DISTAL ULCEERATIVE COLITIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
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Introduction: Ulcerative colitis (UC) is characterized by diffuse and continuous inflammation of the colon. Currently, the etiology and pathogenesis remain unclear. According to a previous epidemiological study, approximately 75% of newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
Aims & Methods: Our study aimed to determine the efficacy and safety of different topical drugs used to treat 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 (SU CRA) and median rank (MR) with corresponding 95% CrI were calculated to rank the treatment outcomes.
Results: In the induction of clinical and endoscopic remission, most regimens showed significant advantages over placebo except topical budesonide 0.5 mg/d and hydrocortisone 100 mg/d. According to SU CRA and MR values, rectal 5-ASA 1.5 to 2.0 g/d + Beclomethasone dipropionate (BDP) 3 mg/d rendered the probability of being the best regimen to achieve clinical and endoscopic remission, followed by the separate use of 5-ASA 4 g/d and BDP 3 mg/d. The occurrence of adverse events was not significantly different between each treatment and placebo.
Conclusion: In conclusion, the combined use of topical 5-ASA and BDP proved to be the first choice for active distal UC and further well-designed researchers are warranted to assess its efficacy and safety.
Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Orda ´ s, I., Eckmann, L., Talamini, M., Baumgart, D.C., Sandborn, W.J. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
3. Ayres, R.C., Gillen, C.D., Walmsley, R.S., Allan, R.N. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
4. Breda, R., Eckmann, L., Talamini, M., Baumgart, D.C., Sandborn, W.J. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
5. Ayres, R.C., Gillen, C.D., Walmsley, R.S., Allan, R.N. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
6. Ayres, R.C., Gillen, C.D., Walmsley, R.S., Allan, R.N. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.

P0377 DYNAMICS OF PROINFLAMMATORY CYTOKINES IN PATIENTS WITH CROHN'S DISEASE TREATED WITH MESENCHYMAL STROMAL CELLS OF BONE MARROW AND AZATHIOPRINE
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Introduction: Mesenchymal stromal 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, topical treatment with the use of bone marrow containing immunosuppressive mesenchymal stem cells is not sufficient to achieve complete control of disease activity. 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 progeny. However, studies conducted by Huang HR et al. demonstrate that IFP rendered minimal impact on the MSC proliferation, apoptosis and cell cycle, while azathioprine inhibited cell proliferation and induced apoptosis of MSCs in vitro [2].
Aims & Methods: The aim of the study was to evaluate the effectiveness of therapy mesenchymal stromal cells (MSCs) from the bone marrow of patients with Crohn's disease (CD) receiving azathioprine. 34 patients with inflammatory (luminal) form CD were divided into two groups. The first group of patients aged 19 to 58 years (n=29) were receiving anti-cytokine therapy with MSCs culture in combination with AZA. The second group of patients (n=1) aged 26 to 50 years (Me-31) received MSCs according to the recommended scheme without AZA. To assess the effectiveness of anti-inflammatory therapy was carried out after 2 months of therapy, field localization of the level of IL-6, TNF -α, IFN-γ, IL-1β and IL-18 in 24-hour serum samples 24 hours after the last injection of therapy.
Results: In the 1st group of patients receiving MSCs treatment, IL-6, TNF-α, IL-1β, IL-18 and IFN-γ were significantly lower compared to the placebo group (p<0.05). After 2 months of therapy MSCs level of IL-6, TNF-α, IL-18 and IFN-γ was significantly decreased (from 10.1 ± 0.8 pg/ml to 5.7 ± 0.6 pg/ml, from 7.0 ± 0.7 to 4.9 ± 0.6 pg/ml, from 6.3 ± 0.5 to 4.9 ± 0.4 pg/ml, and from 5.6 ± 0.7 to 4.2 ± 0.5 pg/ml, p<0.05). In the 2nd group, there was no significant difference in the level of these cytokines compared to the baseline (p>0.05).
Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Orda ´ s, I., Eckmann, L., Talamini, M., Baumgart, D.C., Sandborn, W.J. Progression of UC in patients with newly diagnosed UC patients have active distal UC. Topical 5-aminosalicylic acid (5-ASA) and corticosteroids are used frequently in the treatment of active distal UC.
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V565, an oral domain antibody (Vorabody) to TNF engineered to be 66–82% of an administered dose was recovered from ileostomy bags when MT subject 31003; and 125MTs (1260 mg) 2 h post dose from subject 31004. Overall, recovered 3 h post dose from subject 31002; 78MTs (458 mg) 3 h post dose from were not analysed for V565 as this was a post hoc analysis and the MTs were not total of 135 MTs. 50 MTs were recovered 2 h post dose from Subject 31001; these In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were 31004 – 126 0.2 11 4 7 0 0 31002 – 33 1130 792 82 13 5(ave) 0 31003 – 1060 496 7 0 38(ave) 0 31004 – 126 0.2 11 4 7 0 0

Micromolar concentration of V565 in ileal fluid

<table>
<thead>
<tr>
<th>Hours post-dose</th>
<th>Subject 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7–16</th>
<th>17–24</th>
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<tr>
<td>31001</td>
<td>406</td>
<td>306</td>
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<td>0</td>
<td>0</td>
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<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>
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<tr>
<td>31003</td>
<td>1060</td>
<td>496</td>
<td>7</td>
<td>0</td>
<td>38(ave)</td>
<td>0</td>
<td></td>
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<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>
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</tr>
</tbody>
</table>

In addition to the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 1665 mg dose contained a total of 135 MTs. 50 MTs were recovered 2h post dose from Subject 31001; these were not analysed for V565 as this was a post hoc analysis and the MTs were not stored in a way to enable reliable analysis. 64MTs (containing 135 mg V565) were recovered 3h post dose from subject 31002; 78MTs (458 mg) 3h post dose from subject 31004. The recovery of V565 to lesions distal to the ileum. This profile may patients with no ileostomy the partially dissolved MTs seen in this study are expected to provide active V565 to lesions distal to the ileum. This profile may be effective 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.

References: For subjects with an ileostomy (3 with 1; with a prior history of colonic obstruction) were given a single 1665 mg dose of V565. The dose was selected based on the prior demonstration of safety and tolerability of this dose and the likely maximum daily dose for initial clinical efficacy assessment. High concentrations of active V565 were demonstrated in the ileal fluid of all four subjects as shown in Table 1 below.

In the V565 concentrations in ileal fluid, partially dissolved MTs were recovered from the ileostomy bags of all subjects. Each 1665 mg dose contained a total of 135 MTs. 50 MTs were recovered 2h post dose from Subject 31001; these were not analysed for V565 as this was a post hoc analysis and the MTs were not stored in a way to enable reliable analysis. 64MTs (containing 135 mg V565) were recovered 3h post dose from subject 31002; 78MTs (458 mg) 3h post dose from subject 31004. The recovery of V565 to lesions distal to the ileum. This profile may be effective for IBD and merits further investigation as a potential oral treatment.

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objectively 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 study. 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) (63.5% female, mean age 42 years) were randomized to EAc vs sham acupuncture group. Patients in the EAc EAc group performed a total of 9 acupuncture sessions during eight weeks (2 sessions/first week and one session per week during and after the treatment period).

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 -9.76 to -2.18, Basal Vs 9th session p = 0.003). Depression (8.95 points, 95% CI [4.13 to 13.8, Basal Vs 9th session p = 0.002], anxiety (10.6 points, 95% CI [3.6 to 17.6, Basal Vs 9th session p = 0.006) and sleepiness (3.46 points, 95% CI [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


Aims & Methods: We aimed to determine the efficacy of systemic or low bioavail-ability oral steroids in treating moderate to severe Remission (P<0.001) and for patients with and without prior ADA experience were allowed to enroll. The final long-term follow-up population of 89 steroid treatment patients (with at least 6 months of immunosuppressive treatment, and describe long-term follow-up of Inflammatory bowel disease (IBD) immunosuppressed patients (thiopurines or methotrexate) from our population-data registry were analyzed. For statistical analysis, Chi-square test, U Mann-Whitney test and Kaplan Meier survival analysis were used.

Results: 392 IBD patients with a median of 82 (6-271) months of immunosup-pressive (IMM) treatment were identified (table 1). 89 patients (23%) (33% UC and 66% CD) needed at least one steroid treatment during follow-up (63% systemic steroid and 37% low bioavailability oral steroid) with a median time of steroid treatment of 4 (1–168) months. Average time from IMM to steroid treatment was 26 (6–207) months. In IBD patients there were no differences regarding sex, age, disease, location, perianal disease, extra intestinal manifesta-tions, appendectomy, smoke 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=0.0039) and fistulizing (B2) or fissuring (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 iden-tified. 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 treat-ment. CD patients had higher risk (p=0.007; OR: 3.529) to receive biological treatment or surgery versus UC patients. Otherwise, the more months using steroids in UC patients, the greater risk for biological or surgery treatment (p=0.009). During follow-up, though it’s not statistically significant (p=0.078), we observe that 75% probability of rescue treatment for UC patients is 62 months compared to 36 months for CD patients. Conclusion: 23% of IBD 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.

PO385 ADALIMUMAB LONG-TERM EFFECTIVENESS IN ADALIMUMAB-NAIVE PATIENTS WITH CROHN’S DISEASE: FINAL DATA FROM PYRAMID REGISTRY


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Introduction: PYRAMID was an international multi-center non-interventional postmarketing registry assessing long-term safety and effectiveness of adalimumab (Humira® [ADA]) as used in routine clinical practice. Patients with and without prior ADA experience were allowed to enroll. The final long-term effectiveness of ADA is reported in adult ADA-naive patients (those who had not received ADA before registry enrollment) with moderate to severe Crohn’s disease (CD) who were treated according to the local product label.

Aims & Methods: All patients entering the registry were followed for up to 6 years. Effectiveness of ADA was measured using Physician’s Global Assessment (PGA; [a composite of Harvey Bradshaw Index and rectal bleeding score]), Short Inflammatory Bowel Disease Questionnaire (SIBDQ), and 4 components of the Work Productivity and Activity Impairment (WPAI) questionnaire, including absenteeism, presenteeism, overall work impairment, and activity impairment. Effectiveness measures, captured in all patients who received at least 1 dose of ADA in the registry and had at least 1 post-enrollment measurement, were summarized descriptively by the number of observations that were not missing at each registry visit; data were reported as observed. Values at enrollment are considered as baseline values.

Results: Among 5025 patients evaluated in the registry, 2057 (40.9%) were ADA-naive. Of these, 1199 patients (58.3%) were female; mean age 37.1 years at enrollment. Mean ± SD ADA exposure for the ADA-naive subgroup during the registry was 1118.5 ± 842.3 days. A total of 1082 patients (52.6%) had prior exposure to at least 1 anti-TNF/biologic; 853 (41.5%) and 831 patients (40.4%) used immunomodulators and corticosteroids, respectively, at enrollment. Mean change from baseline in effectiveness measures for patients with CD is shown in the table. Mean PGA score and SIBDQ as well as WPAI domains improved in ADA-naive patients from enrollment to 1 year and were sustained for up to 6 years (table). No new safety signals were identified in the registry.

Conclusion: At 1 year after entering the international postmarketing registry of ADA use in routine clinical practice, clinically meaningful improvements in disease activity, work productivity, and activity impairment were achieved in ADA-naive patients with moderately to severely active CD. These improvements were maintained for up to 6 years of the registry among the patients who remained in the study.

Disclosure of Interest: E.V. Loftus Jr: consultant and/or research support from AbbVie, UCB, Janssen, Takeda, Eli Lilly, Mesoblast, Amgen, Pfizer, CVS Caremark, Salix, Genentech, Roberts Clinical Trials, Gilead, Receptos, Seres Pharmaceuticals, Celgene, and Medimmune.

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W. Renisch: speaker/consultant/advisory board member and has received research funding from Abbott Laboratories, AbbVie, AESCA, Centocor, Falk Pharma GmbH, Immunodiagnostik, and MSD and others.

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R. Panaccione: consultant and/or lecture fees from AbbVie, Amgen, AstraZeneca, Axcan Pharma (now Apatls), Biogen Idec, Bristol-Myers Squibb, Centocor, ChemoCentryx, Eisai Medical Research Inc, Elan Pharmaceuticals, Ferring, Genentech, GlaxoSmithKline, and others.

S. Berg: AbbVie employee; may own AbbVie stock and/or options

G. Alperovich: AbbVie employee; may own AbbVie stock and/or options

M. Bereswill: AbbVie employee; may own AbbVie stock and/or options

J. Kalabic: AbbVie employee; may own AbbVie stock and/or options

M. Skup: AbbVie employee; may own AbbVie stock and/or options

J. Petersson: AbbVie employee; may own AbbVie stock and/or options

A.M. Robinson: AbbVie employee; may own AbbVie stock and/or options
**P0386 EFFECT OF ADALIMUMAB 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**


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**Introduction:** Adalimumab (ADA) has been shown to improve clinical outcomes among patients (pts) with moderate to severe 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 pharmacoeconomic effects of ADA in pts with UC based on disease severity and prior use of tumour necrosis factor inhibitor (TNFI). InspiraADA details have been presented. Pts received ADA 160/80 mg at week (wk) 0/2 followed by ADA 40 mg eow at wks 4 through 26. Pts who did not respond to ADA by wk 8 were to discontinue. Pts who lost response at or after wk 8 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 (naïve vs experienced). Proportions of pts with Simple Clinical Colitis Activity Index (SCCAI) response (defined as a decrease of ≥2 points vs baseline) and remission (defined as an SCCAI ≤2) were calculated for each cohort at wks 2, 8, 16 and 26. Change from baseline in HRQoL outcomes was calculated for each cohort at wks 2, 8 and 26. Change in Remission rate was associated with greater disease control in the induction period for pts with moderate than 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.

**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. Additional funding: 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.

**Disclosure of Interest:** S. Travis: Advisor, speakers' bureau: AbbVie; A.M. Robinson: Employee, stockholder: AbbVie; N. Chen: Employee, stockholder: AbbVie; M. Skup: Employee, stockholder: AbbVie; W. Lee: Employee, stockholder: AbbVie

Cmax ranged from 5016.4 to 14253.6 h*ug/mL and 10.0 to 23.1 ug/mL, respectively. The pharmacokinetic (PK) profile of SC and IV formulation was evaluated by measuring the AUC0-last, which was 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-tmax, Cmax, Tmax, and T1/2.

**Results:** A total of 38 male subjects with median age of 23 years (range 19, 30 years) were treated emergent serious adverse events or systemic hypersensitivity reaction. In SC cohort, two subjects experienced mild injection site reactions, and both have resolved without any treatment. Mean AUC0-tmax and Cmax ranged from 5016.4 to 14253.6 h*ug/mL and 10.0 to 23.1 ug/mL, respectively, after a single SC injection of CT-P13. SC Cmax formation was absorbed slower into the systemic circulation (median Tmax ranging from 7.0 to 7.1 days) in comparison with IV formulation (median Tmax ranging from 2.2 to 3.2 hours) but the drug elimination measured by half-life (T1/2) was similar (mean range 11.3 to 12.2 hours) between SC and IV formulations, respectively. Bioavailability of CT-P13 SC was approximately 60.6%, when comparing across all CT-P13 SC cohorts to CT-P13 IV cohorts.

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

References


PO390 CLINICAL RESPONSE TO VEDOLIZUMAB IN IBD PATIENTS IS ASSOCIATED WITH THE CONCOMITANT USE OF IMMUNOMODULATORS

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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 resp

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 diagnosis to Vedolizumab initiation was 8 years. 17 (29%) were anti-TNF naïve (all UC) and 28 (67%) had previously failed both Infliximab and Adalimumab. 36 (61%) were on a concomitant immunomodulator (IM), either a thiopurine or methotrexate. 95% (56/59) of 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 = 0.0056). The two minor allergie 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


Introduction: Lymphocytic colitis (LC) is a common cause of chronic, non-bloody diarrhea. Budesonide has been shown to be effective in a few small case reports. Mesalazine has been proposed as a treatment option but no placebo-controlled trials have been reported. Thus, we performed a placebo-controlled, multicenter study to evaluate budesonide and mesalazine as induction treatments for lymphocytic colitis.

Aims & Methods: Patients with active lymphocytic colitis were randomly assigned to either budesonide 9 mg once daily or mesalazine 3 g once daily, or placebo for 8 weeks in a double-blind, double-dummy design. The primary endpoint was clinical remission defined by the Hauptschwelle-Criteria (1). Secondary endpoints included histopathology and safety.

Results: Based on an interim analysis the trial was stopped in accordance with the pre-specified adaptive design. The final analysis included 57 patients (19 per treatment group). Most patients were female (72%) and mean age was 59 years. The proportion of patients in clinical 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%) vs placebo failed statistical significance (p = 0.09).

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, whilst oral mesalazine 3 g once daily was only numerically, but not statistically significantly better than placebo.

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T. Naac: I am employee at Dr. Falk Pharma GmbH.
F. Greinwald: Dr. Greinwald is employee at Dr. Falk Pharma GmbH
All other authors have declared no conflicts of interest.

Reference
Situations: An interim analysis of a post-marketing surveillance study

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Introduction: Granulocyte and monocyte adsorptive apheresis (GMA) has been shown to be effective and safe in patients with inflammatory bowel disease (IBD). We report an interim analysis of a post-marketing surveillance study of granulocyte and monocyte adsorptive apheresis using Adacolumn® for patients with inflammatory bowel disease who have special situations (PARTICULAR).

Aims & Methods: The aim of the PARTICULAR study was to assess the safety and efficacy of GMA treatment in patients with IBD who have special situations. This study was an interim analysis of the multi-centre observational study conducted at 80 institutions in Japan. Data were collected from patients with ulcerative colitis (UC) or Crohn’s disease (CD) who received GMA between November 2013 and September 2016. Patients who had at least one special situation were included in the study. GMA was performed using Adacolumn® (JIMRO, Takasaki, Japan). Each patient received up to a maximum of 11 GMA sessions. 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 GMA 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 assessment. pUC-DAI scores were calculated at the baseline and then after the final GMA session or when 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, 83, 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 group than in those who did not receive GMA for initial treatment (Table 1). The efficacy of GMA was assessed in 209 UC patients. The numbers of patients administered prednisolone, infliximab, adalimumab, tacrolimus and cyclosporine were 24, 6, 3, 6 and 1, respectively. The mean 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.

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References
state-wide hospital records. Psychological support was offered where scores on HADS and/or K6 indicated likely need.

**Results:** 500 patients were approached during the 12-month screening phase; 50.6% were male. 70.8% of all screening patients were women in patients with IBD, mean disease duration of 11 years, 43.3% in clinical remission, and 9.8% current smokers (Australia’s average 13.3%). Of these, 500, 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. Analgesics and/or mental health medication increased the likelihood of scoring within the clinical range nearly fivefold (analgesic 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 = -0.32, p = .000; depression r = -0.20, p = .000) and overall quality of life (anxiety r = -0.78, p = .000; depression r = -0.78, p = .000). Depression and general distress were related to overall healthcare utilisation (depression r = -0.131, p = .005; general distress r = -0.124, p = .026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of emergency department presentations (r = -0.124, p = .024), outpatient appointments (r = -0.119, p = .030), and appointment cancellations (r = -0.155, p = .005). 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).

**Table1:** 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>3.6</td>
<td>9</td>
<td>4.1</td>
<td>4.87</td>
<td>0.000***</td>
<td>0.56</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>8.8</td>
<td>6.4</td>
<td>5.0</td>
<td>4.34</td>
<td>0.000</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>18.2</td>
<td>13.9</td>
<td>5.1</td>
<td>7.47</td>
<td>0.000***</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Mental QoL</td>
<td>51.1</td>
<td>15.9</td>
<td>60.6</td>
<td>4.91</td>
<td>0.000***</td>
<td>0.39</td>
<td></td>
</tr>
<tr>
<td>Physical QoL</td>
<td>72.5</td>
<td>14.9</td>
<td>75.0</td>
<td>1.50</td>
<td>0.046</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Total QoL</td>
<td>57.6</td>
<td>14.6</td>
<td>65.1</td>
<td>4.39</td>
<td>0.000***</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Medication adherence</td>
<td>5.1</td>
<td>2.0</td>
<td>7.2</td>
<td>2.03</td>
<td>0.049**</td>
<td>0.09</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001

**Conclusion:** Psychological issues are prevalent in patients with IBD and associated anxiety, depression, and mental illness medication adherence are more likely to participate in psychological screening, and in general the screening procedure 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 demonstrates 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 IMMUNOREACTIVITY DATA FROM A PHASE III CONFIRMATORY STUDY COMPARING GP2017, A PROPOSED BIOSIMILAR, WITH REFERENCE ADALIMUMAB

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**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 evaluated in a phase III confirmatory study to confirm its non-inferiority against adalimumab as a treatment for plaque psoriasis.

**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 with moderate-to-severe chronic plaque psoriasis were randomized to receive an initial dose of 80 mg subcutaneous GP 2017 or reference adalimumab, followed by 40 mg 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 51. 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 per-protocol analysis set, PASI 75 response rates for continual GP2017/reference adalimumab at Weeks 17 and 51 were 75.2% vs 67.8%, respectively (p = 0.015). Investigator’s global assessment (IGA) response rates (IGA score of 0 [clear] or 1 [almost clear] and ≥2 point improvement from baseline) were also similar between the continual GP2017/reference adalimumab groups, increasing over time and remaining stable from Week 17 (60.0% [53.9%] to Week 51). Results: From the randomization to Week 51, 168 and 171 patients received continuous treatment with GP 2017 or reference adalimumab, respectively. In the per-protocol analysis set, PASI 75 response rates for continual GP2017/reference adalimumab at Weeks 17 and 51 were 75.2% vs 67.8%, respectively (p = 0.015). Investigator’s global assessment (IGA) response rates (IGA score of 0 [clear] or 1 [almost clear] and ≥2 point improvement from baseline) were also similar between the continual GP2017/reference adalimumab groups, increasing over time and remaining stable from Week 17 (60.0% [53.9%] to Week 51).

**Disclosure of Interest:** A. Blauvelt: Investigator for Sandoz J. Lacour: Investigator for AbbVie, Amgen, BMS, BI, Celgene, Galderma, Janssen, LEO Pharma, Lilly, MSD, Novartis, Pfizer, Regeneron, Roche, Sanofi; Consultant for AbbVie, BMS, Celgene, Galderma, LEO Pharma, Lilly, Novartis, Regeneron, Roche and Sanofi J.F. Fowler: Investigator for Sandoz E. Schuck: Paid employee of Hexal AG, a Sandoz company 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, Amgen, 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 ApherESIS IN INFAMMATORY BOWEL DISEASE

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**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 (23%). 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 888 ml/session (SD 1729) and lasting 1 hour (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

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Introduction: Elevated levels of matrix-metalloproteinase-9 (MMP-9) and its degradation products are detected 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 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 subjects 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 total score 220-450, weighted PR2 score ≥11 [standard CDAI: weightings: abdominal pain 0-3 +7 plus mean number of daily stools ≥2] 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-α 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). Centrally-read sigmoidoscopies/colonoscopies 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% (0.9-6.6%) 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).
The frequency of adverse events (AEs) was similar between the treatment groups: placebo (67.9%), 150 mg Q2W (60.4%), 150 mg QW (62.3%), 300 mg QW (69.8%). Consistent AEs included abdominal pain, nausea, fatigue, anemia, and pyrexia. One AE led to study discontinuation in the placebo group (1.6%) compared to 2 in the 150 mg QW group (3.8%) and in the 300 mg QW group (7.5%). Three serious AEs occurred in the placebo group (10.7%) compared to 1 in the 150 mg QW group (1.9%), 6 in the 150 mg QW group (11.3%) and 8 in the 300 mg QW group (15.1%). Frequency of arthralgia and musculoskeletal pain was similar or lower in adalimumab groups compared to placebo.

percentage of subjects achieving clinical response/remission and endoscopic response was similar between treatment groups (Table 1).

Conclusion: SC adalimumab was well tolerated, however, none of the treatment regimens demonstrated a treatment effect in subjects with CD.


P0401 TUBERCULIN SKIN TEST CONVERSION RATE IN INFAMMATORY BOWEL DISEASE PATIENTS RECEIVING ANTI-TNF ALPHA AGENTS

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Aims & Methods: Few data exist regarding the kinetics of this test during therapy. Thus, we investigate the conversion rate of PPD-TST in IBD patients under anti-TNFAlphal treatment. Anti-TNFalphal-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 (d ≥ 10 mm in naïve and d ≥ 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 tuberculin skin test (PPD-TST) is considered a pre-requisite at baseline. Results: Sixty-eight IBD patients have currently been enrolled (males: 51.47%, Crohn’s disease: 82.35%). Median age at IBD diagnosis was 33.1 years [IQR: 26.4, range: 17–54]. Patients with PPD-TST: 44.26 months [IQR: 42.8, range: 6.3–190.1]. Twenty patients were negative baseline PPD-TST, eight (19%) exhibited a positive 2nd PPD TST; three decreased & in one increased 7 mm). Out of the remaining 42 patients with a positive baseline PPD-TST remained positive (in 5 patients the diameter was 4.8, p = 0.009). In 92.6% 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).

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, one may occur. AAA may be more specific and predictive of ATI.

Disclosure of Interest: B. Ungar: This study was supported in part by a grant from "AbbVie". In addition, BU received consultation fees from "AbbVie" and "Janssen".

U. Kopylov: Speaker fees - abbvie Research support, speaker and advisory fees offered by Janssen.

Y. Chowers: Abbvie - grant support, lecture and advisory fees offered by Janssen - lecture and advisory fees offered by Takeda.

All other authors have declared no conflicts of interest.

P0402 THE TEMPORAL EVOLUTION OF IMMUNOGENICITY IN INFILMAMTORY BOWEL DISEASE PATIENTS TREATED WITH ADALIMUMAB


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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 4 weeks. In week 2 2 AAA had 34% of primary non-response compared to 9% in patients without early AAA (OR = 4.8, p = 0.009). In 92.6% 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).

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 may be more specific and predictive of ATI.


S. Zhao: Employee of Gilead Sciences.

S. Schreiber: Consulted with Gilead Sciences.


All other authors have declared no conflicts of interest.

P0403 GOLIMUMAB IN ULCERATIVE COLITIS, REAL-LIFE PROSPECTIVE COHORT STUDY FROM A SINGLE REFERRAL CENTRE OF CENTRAL ITALY

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Introduction: Golimumab (GLB) has been the last anti-TNF agent authorized for the treatment of Ulcerative Colitis (UC). Results from registratory trial (PURSUIT) documented a clinical response in 51% of patients after 6 weeks
of GLB with 47.4–94% of patients maintaining the effect after one year. Due to its restricted use, data are still few with a focus on clinical efficacy 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 and safety of GLB for the treatment of UC in the real-life setting of our referral centre. 13 patients (7 male, 4 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 < or ≥ 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 response (Partial Mayo score <2 with all sub scores <1) at the end of the induction phase and then at 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 (LE) in 70%, pancolitis (PC) in 23% and proctitis (PR) in 7% of patients. Ten patients (77%) were anti-TNF naive, 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 (both patients are 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 loss of response in the long term. Whether this really reflects a lower efficacy of GLB or could depend on the unavailability of dose optimization is still a matter of discussion.

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Introduction: The Observational Postmarketing Ulcerative colitis Study (OPUS) registry was conducted to collect long-term (5 years) real-world clinical practice safety data in patients with moderate to severe ulcerative colitis (UC) treated with originator infliximab and to compare this safety profile to that of UC patients treated with standard therapies.

Aims & Methods: The OPUS registry was a prospective, non-randomized, observational study that followed patients with UC (in routine practice in 14 European countries) who were enrolled to receive treatment with either originator infliximab or standard therapy (defined as initiation or dose-increase of corticosteroids or azathioprine) as determined by their treating physician. Adverse events (AEs) were recorded during the 5-year follow-up period; at any point during these 5 years of observation, the patient’s therapy could be changed to any other UC therapy, based on the physician’s clinical judgment. Frequency of events was evaluated in nine pre-specified categories (serious infection, infusion-related reaction, fatality, worsening or new case of congestive heart failure (CHF), central and peripheral demyelinating neurological disorder, hematological condition, malignancy/lymphoproliferative disorder, autoimmune disorder, or hepatobiliary event). Multivariable Cox proportional hazards (PH) models were assessed time-to-first AE for the originator infliximab and standard therapy groups, using an intent-to-treat approach, in eight of the pre-specified categories (infusion-related reactions were not compared between originator infliximab and standard therapy). The likelihood ratio statistic of PH models assessed time-to-first AE for the originator infliximab and standard therapy groups, compared with the standard therapy group, had more severe disease at baseline, based on partial Mayo score (PMS): 46.0% of patients in the originator infliximab group had severe disease (PMS of 7–9 out of 9), compared (53.0%) in the standard therapy group. In time-to-first event analyses for risk factors/confounders, enrollment into the originator infliximab group was associated with a higher risk of serious infection (hazard ratio = 2.08, 95% confidence interval [CI] 1.42, 3.06; p < 0.001) compared with enrollment into the standard therapy group (Table). No notable risk differences between groups were identified for hematological condition, autoimmune disorder, malignancy/lymphoproliferative disorder, hepatobiliary event, and fatality (Table). Because of very low incidence of AEs in the categories of CHF and demyelinating disorder (103/530, 95% confidence interval 0.05 to 0.20 in each group), multivariable time-to-event analyses could not be performed for these categories.

Conclusion: Data from 5-year safety follow-up of patients with moderate to severe UC in this non-randomized registry population demonstrate that, compared with the standard therapy group, patients enrolled in the originator infliximab group had an increased risk of serious infection. This finding is consistent with the previously established safety profile for originator infliximab in the treatment of UC. In this large registry, the originator infliximab group, compared with the standard therapy group, had not a significantly increased risk of a hematologic condition, autoimmune disorder, malignancy/lymphoproliferative disorder, hepatobiliary event, CHF, demyelinating disorder, or fatality. No new safety concerns were observed with originator infliximab in the OPUS registry.

Disclosure of Interest: J. Panis: J.P. has received consultant or speaker fees from Merck & Co., Inc.

N. Teich: N.T. is a scientific advisor for and has received speaker fees from Merck & Co., Inc.

S. Huyck: S.H. is an employee of Merck & Co., Inc., the sponsor of the study.

S. Huyck: S.H. is an employee of Merck & Co., Inc., the sponsor of the study.

H. A. Flynn: HAF. is an employee of Merck & Co., Inc., the sponsor of the study.

H. A. Flynn: HAF. is an employee of Merck & Co., Inc., the sponsor of the study.

P. Stryszak: P.S. is an employee of Merck & Co., Inc., the sponsor of the study.

R. Yao: R.Y. is an employee of Merck & Co., Inc., the sponsor of the study.

G. Philip: G.P. is an employee of Merck & Co., Inc., the sponsor of the study.

W. Reinisch: W.R. has served as a consultant and advisory board member for Merck & Co., Inc.
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.

Disclosure of Interest: C.K. Yao: C.K. Yao received research support to conduct the study from Ferring Pharmaceuticals. The Department of Gastroenterology at Monash University benefits financially from the sales of a digital app and booklets on the low FODMAP diet.

J.S. Barrett: The Department of Gastroenterology at Monash University benefits financially from the sales of a digital app and booklets on the low FODMAP diet.

J.G. Muir: The Department of Gastroenterology at Monash University benefits financially from the sales of a digital app and booklets on the low FODMAP diet.

P.R. Gibson: PG has served as consultant or advisory member for AbbVie, Ferring, Janssen, Merc, Allergan, Pfizer, Celgene & Takeda; research support from AbbVie & Janssen; speaking honoraria for his institution from AbbVie, Janssen, Ferring, Mylan, Takeda, Mylon & Pfizer.

All other authors have declared no conflicts of interest.

**Aims & Methods:** In this prospective observational trial, patients with moderate to severe UC (Mayo endoscopic 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 immunoassay and anti-GLM antibody levels were measured with a drug-sensitive antigen binding test, both developed by Sanquin laboratories. Endoscopic response was defined as disease duration at age, disease duration at baseline, history of previous dysplasia.

**Table 1:** Median golimumab trough concentrations and AUCs at week 2 and 6

<table>
<thead>
<tr>
<th>Pre-specified Category of Adverse Event</th>
<th>Endoscopic responders median [IQR]</th>
<th>Endoscopic non-responders median [IQR]</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Infection</td>
<td></td>
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<tr>
<td>Hematologic</td>
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<td></td>
<td></td>
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<tr>
<td>Autoimmune Disorder</td>
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<tr>
<td>Malignancy</td>
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<tr>
<td>Lympho-proliferative Disorder</td>
<td></td>
<td></td>
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<tr>
<td>Hepatobiliary Event</td>
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<tr>
<td>Fatality</td>
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</tbody>
</table>

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 trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with improved endoscopic outcomes.

**Disclosure of Interest:** S. Berends: Has received lecture fees from Johnson and Johnson, and Merc Sharp & Dohme.

A. Strik: Has received lecture fees from Biogen, Johnson and Johnson, Merc Sharp & Dohme, Mundipharma, Takeda, and Tillots.

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M. Lowenberg: Has received speaking fees from Abbvie, Covidien, Dr. Falk, Ferring Pharmaceuticals, Merc Sharp & Dohme, Receptos, Takeda, and Trimedico. He has received research grants from AbbVie, Merck Sharp & Dohme, Achmea healthcare and ZonMW.

**P0407 COMPARATIVE EFFICACY AND SAFETY OF TOFACITINIB AND BIOLOGICS AS INDUCTION THERAPY FOR MODERATELY TO SEVERELY ACTIVE ULCEARATIVE COLITIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS**

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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-naïve or exposed) and by prior TNFi exposure.
Results: Twelve induction trials were identified from the SLR (ACT 1 & 2, EUCALYPTUS, GEMINI-I, PURSUIT SC, TOFACTINIB PHASE 2, Feagan 2005, 1 Probert 2003, 2 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 (80% vs 36% in the overall population (odds ratio [OR] 1.82 [95% credible interval [CrI] 1.06, 3.14]); and vs vedolizumab 300 mg (OR 3.71 [95% CrI 1.37, 10.64]) and etrolizumab 300 mg (OR 12.09 [95% CrI 6.84, 22.73]) in TNFi-naive patients. A higher rate of clinical remission was seen with tofacitinib 10 mg BID vs adalimumab in TNFi-exposed patients (OR 11.93 [95% CrI 1.37, 10.64]) and etrolizumab 300 mg (OR 12.09 [95% CrI 1.68, 14.78]). AE rates were similar between tofacitinib 10 mg BID and comparators in the overall and TNFi-naive populations when analysed individually, but tofacitinib 10 mg BID was found to be associated with a higher rate of disaggeregated AEs (“any AE”) than etrolizumab 300 mg in the overall population (OR 2.78 [95% CrI 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 TNFi treatments.

Disclosure of Interest: C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biology, lecture fees from Seres Therapeutics, and grant support from Institut Mérieux, ntera Health, and Merck

D.T. Rubin: Consulting fees: AbbVie, Amgen, Janssen, Pfizer Inc, Takeda, UCB. Research grants: AbbVie, Genentech, Janssen, Takeda, UCB.

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L.A. Chen: Employee of New York University School of Medicine, which is contracted by Pfizer Inc to perform consultative services. L.A. Chen’s husband is a shareholder of Pfizer Ltd.

A. Manuchehr: Employee and shareholder of Pfizer Ltd.

A. Manuchehr: Employee and shareholder of Pfizer Ltd.

C. Kayhan: Employee and shareholder of Pfizer Inc.

J. Woolcott: Employee and shareholder of Pfizer Inc.

J.C. Cappelleri: Employee and shareholder of Pfizer Inc.

References

P0408 CHARACTERISTICS AND OUTCOMES IN PATIENTS WITH C. DIFFICILE INFECTION AND INFLAMMATORY BOWEL DISEASE: BEZLOTOXUMAB VERSUS PLACEBO

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Introduction: Patients with inflammatory bowel disease (IBD) experience higher rates of C. difficile infection (CDI) than the overall population, often lack typical risk factors, and frequently experience severe and recurrent episodes. MODIFY I/II were global trials of the efficacy and safety of bezlotoxumab (bezlo: a human monoclonal antibody against C. difficile toxin B), in which bezlo was superior to placebo at preventing CDI recurrence (rCDI) in participants with primary or recurrent CDI given antibacterial drug treatment for CDI. Participants with IBD could be enrolled if, in the opinion of the investigator, symptoms were more likely due to CDI than IBD.

Aims & Methods: The objective of this post-hoc subgroup analysis was to summarize CDI-related outcomes, including initial clinical cure and rCDI, through 12 weeks in participants with IBD enrolled in the MODIFY trials. CDI-related outcomes through 12 weeks in the subset of IBD participants enrolled in the MODIFY trials included: initial clinical cure (no diarrhea during the 2 consecutive days following completion of ≤14 days of an antibacterial drug treatment for CDI); and rCDI (new episode of diarrhea associated with a positive stool test for toxigenic C. difficile in participants who had achieved initial clinical cure). For this post-hoc analysis, participants randomized to bezlo or axotumab + bezlo were pooled and are referred to as the “bezlo” group and participants randomized to placebo or axotumab were pooled and are referred to as the “no bezlo” group.

Results: Overall, 2559 participants were included in the mITT population; 1554 participants were randomized to a bezlo group and 1005 were randomized to a no bezlo group. There were 44 participants with IBD; 23 (52.3%) had ulcerative colitis; 18 (40.9%) had Crohn’s disease; and 3 (6.8%) had non-characterized IBD. Compared with participants without IBD, participants with IBD tended to be younger, were more often treated as outpatients, were more often immunocompromised, and a smaller percentage had severe CDI. Among IBD participants, a higher proportion had initial clinical cure in the no bezlo group compared with the bezlo group and there was a higher proportion of participants with rCDI in the no bezlo group compared with the bezlo group. In IBD participants who did not receive bezlo, most of the recurrences (5 of 7) occurred within 4 weeks after study infusion, while most of the recurrences among participants who received bezlo occurred after week 4 (3 of 4).

Conclusion: Participants with IBD and CDI enrolled in the MODIFY trials were younger, more likely to be diagnosed with CDI as an outpatient, to be immunocompromised, and to develop rCDI compared with non-IBD participants. Bezlo yielded a 27.2% absolute reduction (50% relative reduction) in the incidence of rCDI in participants with IBD. The efficacy of bezlo in preventing rCDI may extend to patients with IBD, but additional data are needed due to the limited cohort size.

Disclosure of Interest: C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biology, lecture fees from Seres Therapeutics, and grant support from Institut Mérieux, ntera Health, and Merck

M. Wilcox: consult/grant/lect fees: Alere, Abbott., Actelion, Astellas, Cereza, Cubist, Optimer, Sanofi Pasteur, Summit, bio-Mérieux, Da Volterra, Qiagen, Astra Zeneca, Pfizer, Durata Therap, Merck, Seres Therap, Valneva, Nabriva Therapeutics, bio-Mérieux, Da Volterra, Qiagen, AstraZeneca, Pfizer, Durata Therap, Merck, Seres Therap.


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.

IBD n=44
Female, n (%) 25 (56.8) 1419 (56.4)
Mean age, yrs (SD) 50.3 (18.9) 63.5 (17.5)
Severe CDI 4 (9.1) 416 (16.5)
Immunocompromised 10 (22.7) 531 (21.1)
Bezlo No Bezlo
Initial Clinical Cure, n/m (%) 15/28 (53.6) 13/16 (81.3)
rCDI, n/m (5) 4/15 (26.7) 7/13 (53.8)
Disclosure of Interest: show that switching from IFX-biological to IFX-biosimilar is feasible and safe.

Results: So far, we included 47 patients from 6 secondary Dutch Teaching hospitals. 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. Randomization was performed in a 2:1 ratio (65% to IFX-biosimilar). The primary endpoint was number of patients in remission at week 30. We measured C-reactive protein (CRP), faecal 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 hospitals. 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. Randomization was performed in a 2:1 ratio (65% to IFX-biosimilar). One patient experienced a relapse of IBD, this patient received IFX-biosimilar. 2 patients experienced a serious adverse event (SAE) that patients experienced were documented.

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

References

P0412
HISTOLOGIC MEASURES OF MUCOSAL HEALING CORRELATE WITH ENDOSCOPIC MEASURES OF DISEASE ACTIVITY IN BASELINE CD FOLLOWING INDUCTION THERAPY WITH THE JAKI INHIBITOR FILGOTINIB IN ACTIVE CROHN’S DISEASE: RESULTS FROM FITZROY STUDY


Aims & Methods: We analyzed the success of fecal microbiota transfer (FMT) via encapsulated cryopreserved microbiota or via endoscopic jejunal application to 14 patients with chronic, antibiotic-refractory pouchitis. Antimicrobial therapy was performed either via encapsulated cryopreserved microbiota 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 subjected 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 160 mg/kg (115–175) to 450 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 evenness. In patients showing response, typical members of the microbiota in diversity was observed. This increase 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 algorithm 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 recipient microbiota. We found an increase in the diversity and an overall restructuring of the microbiota 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 remained stable. Increasing 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.

References
1. 0.65, p < 0.001; Corr 5 0.53, p < 0.001; BL and W10 respectively)(aIGHAS v uISES-CD: Corr 5 0.001;
USTEKINUMAB– AN ALL PATIENTS ANALYSIS FROM THE UNITI STUDIES: RESPONSE AND REMISSION AFTER 16 WEEKS OF INDUCTION THERAPY

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 response 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 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 enrollment into UNITI-2.

Response rates and Remission rates for all patients 16 weeks after induction of 6 mg/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.
REAL-WORLD PATTERNS OF TREATMENT DISCONTINUATION, FLARES, AND HOSPITALISATIONS AMONG INFLAMMATORY BOWEL DISEASE PATIENTS WITHIN 12 MONTHS OF INITIATION OF VEDOLIZUMAB OR INFliximab

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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-naïve. 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 1.9 years for IFX initiators. Median time to treatment discontinuation was 244 (IQR: 194–307) 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>Patients with Crohn’s Disease, %</td>
<td>60.0</td>
<td>60.9</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>5.7</td>
<td>7.3</td>
<td>0.663</td>
</tr>
<tr>
<td>Surgery</td>
<td></td>
<td></td>
<td></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-naïve 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. M. Raluy Callado: Mireia Raluy Callado is a full-time employee of Evidera. A. Berger: Ariel Berger is a full-time employee of Evidera. R. Curtis: Employee of Takeda Development Centre Ltd. M.J. Khalid: Employee of Takeda Development Centre Ltd.
P0415 OXIDATIVE STRESS ENHANCES THE ANTIGEN PRESENTING FUNCTION OF COLONIC EPITHELIAL CELLS BY INDUCING CD80 IN THE EARLY STAGES OF COLONIC CARCINOCNEGENESIS

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Introduction: Cancer development has been linked to oxidative stress by increasing DNA mutations or inducing DNA damage, genome instability and cell proliferation. Interestingly, reactive oxygen species (ROS) seem to modulate antigen presentation, a crucial event in the immune surveillance mechanisms. We recently showed that expression of the co-stimulatory molecule CD80 on epithelial cells has a critical role during the immune surveillance process occurring in colon carcinogenesis2. Remarkably, ROS have been involved in the transcriptional regulation of CD80 gene expression3; in addition, oxidative DNA damage was directly correlated to CD80 expression in colon mucosa dysplasia3.

Aims & Methods: Therefore, the aim of this work was to examine the role of ROS on CD80 expression in colon epithelial cells using an in vitro and an in vivo model of colon carcinogenesis. A mouse colorectal cancer cell line, CT26, was used to quantify the expression of CD80 in response to pro-oxidant (such as Antimycin A and H2O2) and antioxidant (N-acetyl cysteine) stimuli in presence of N-acetylcysteine significantly reduced AOM-induced CD80, MHC-I and MHC-II up-regulation in colonic epithelial cells (p < 0.01) but not by NF-kB pharmacological inhibition. In vivo administration after AOM treatment.

Results:

In CT26 cells ROS-generating agents (Antimycin A and H2O2) caused a significant increase of CD80 mRNA (p = 0.01) and protein level (p < 0.001). H2O2-induced CD80 up-regulation in colon epithelial cells was significantly inhibited by N-acetyl cysteine (p < 0.001) and by p38MAPK inhibitor (p = 0.001) but not by NF-kB pharmacological inhibition. In vivo administration of N-acetylcysteine significantly reduced AOM-induced CD80, MHC-I and MHC-II up-regulation in colon epithelial cells (p < 0.001 and p < 0.001, respectively). Moreover, CD8+CD28+ vs Healthy, IBS (n = 15) IBS patients based on their mucosal antimicrobial gene expression Cytokine-gene expression in sigmoid colon biopsies from patients with IBS, defined as either immuno-active or immuno-norm based on systemic and mucosal cytokine profiles (Benett et. al Am J Gastro, 2016), and healthy subjects was assessed by Human Antibacterial Response RT2 Profiler PCR Array. Targeted 16S rRNA gene pyrosequencing was performed on fecal microbiota. To identify discrimination profiles based on multiple variables between IBS patients and healthy subjects, orthogonal partial least squares discriminant analysis (OPLS-DA) with a cut off for Variable Importance for the Projection >0.7 was performed.

Results:

Table 1: Differences in mucosal antimicrobial mRNA expression between IBS (Immuo-active and Immuno-norm) and healthy subjects.

<table>
<thead>
<tr>
<th>Gene</th>
<th>Healthy (n = 31)</th>
<th>IBS (n = 16)</th>
<th>Immuno-active (n = 16)</th>
<th>Immuno-norm (n = 15)</th>
<th>Immuno-active v Healthy</th>
<th>Immuno-norm v Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKT1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>IRF7</td>
<td>0.0002</td>
<td>0.0008</td>
<td>0.004</td>
<td>0.01</td>
<td>0.01</td>
<td>0.006</td>
</tr>
<tr>
<td>MAP2K4</td>
<td>0.002</td>
<td>0.006</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
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<tr>
<td>TICAM1</td>
<td>0.002</td>
<td>0.01</td>
<td>0.007</td>
<td>0.01</td>
<td>0.01</td>
<td>0.008</td>
</tr>
<tr>
<td>TNFRSF1A</td>
<td>0.003</td>
<td>0.005</td>
<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
<td>0.008</td>
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<tr>
<td>SUGT1</td>
<td>0.004</td>
<td>0.05</td>
<td>0.002</td>
<td>0.01</td>
<td>0.01</td>
<td>0.008</td>
</tr>
<tr>
<td>LYZ</td>
<td>0.004</td>
<td>0.01</td>
<td>0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>0.009</td>
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<td>LTF</td>
<td>0.008</td>
<td>0.09</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.009</td>
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<tr>
<td>CHUK</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>0.02</td>
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<tr>
<td>IRAK1</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>ZBP1</td>
<td>0.04</td>
<td>0.05</td>
<td>0.05</td>
<td>0.01</td>
<td>0.01</td>
<td>0.05</td>
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<tr>
<td>TLR4</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>IL1B</td>
<td>0.05</td>
<td>0.05</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>RIPK1</td>
<td>0.05</td>
<td>0.05</td>
<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
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<tr>
<td>XIAP</td>
<td>0.06</td>
<td>0.06</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>CAR9D</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
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<tr>
<td>IL-18</td>
<td>0.05</td>
<td>0.05</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>IRF5</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>CXCL1</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>TOLLIP</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.01</td>
<td>0.01</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Data presented as p-values (Mann-Whitney t-test) * = non significant. We included 31 IBS patients (16 females, median age 32 (25-44) years) and 16 healthy subjects (8 females, median age 27(24-30) years). An OPLS-DA model demonstrated that the antimicrobial profiles differed between IBS and healthy subjects (R² = 0.54, Q² = 0.16). The mucosal mRNA expression of 14 antimicrobial genes was downregulated, while one gene was upregulated in IBS patients compared to healthy subjects (Table 1). Antimicrobial profiles did not differ between IBS patients subgrouped according to their predominant bowel habit (R² = 0.02). An OPLS-DA model showed discrimination between immunoo-active (n = 16) and immuno-norm (n = 15) IBS patients based on their mucosal antimicrobial profiles (R² = 0.91, Q² = 0.61). This finding was corroborated by four antimicrobial genes being altered between the two IBS groups (Table 1). Adding healthy subjects to the model revealed three differing antimicrobial profiles for each respective group (R² = 0.44, Q² = 0.30). Compared to healthy subjects, 19 genes in the immuno-active and immuno-norm IBS groups were differently expressed (p < 0.05, Table 1). Only one of the antimicrobial genes differently expressed between IBS patients and healthy subjects was associated with faecal microbiota in immunoo-norm IBS patients (Conserved Helix-Loop-Helix Ubiquitous Kinase (CHUK) with Anaerovorax r = -0.76, p < 0.01). In the immuno-active IBS group 11 associations were identified, including TNF
Receptor Superfamily Member 1A (TNFRSF1A) with Bifidobacterium (n = 0.9). p = 0.08). 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.

P0418 EFFECT OF INTERNAL AND EXTERNAL BILARY DRAINAGE ON INTESTINAL MUCOSAL BARRIER FUNCTION IN BILIARY OBSTRUCTION RATS

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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-mediated 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 ligature 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, GP-BAR1 mRNA, RD-5 mRNA were measured by Reverse transcription polymerase chain reaction (RT-PCR). The expression was evaluated by Chi’s method was 2.158 0.579, 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 were remarkably more dramatic 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 GP-BAR1 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 GP-BAR1 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 GP-BAR1 was increased significantly in the intestinal mucosal of OJ group, which was higher than that of SH group (P < 0.01). After internal and external biliary drainage to alleviate OJ respectively, the GP-BAR1 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, GP-BAR1 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 regulatory mechanism between GP-BAR1 and intestinal immune-related index, which thus appears to be a key factor in maintaining function of intestinal mucosa barrier.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0420 RISK FACTORS ASSOCIATED WITH RECURRENCE OF CLOSTRIDIUM DIFFICILE INFECTION IN THE ELDERLY

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Introduction: The old age is one of the most important risk factors for recurrent C. difficile Infection (CDI). However, risk factors among the elderly patients are largely unknown.

Aims & Methods: The purpose of this study was to investigate risk factors associated with recurrent CDI in the elderly. Patients 65 years of older with positive CDI toxin test between January 2005 and December 2016, who received either oral metronidazole or oral vancomycin therapy were included. Recurrent CDI was defined as another positive laboratory result for C. difficile toxin between 15 days and 90 days after initial positive diagnostic test. Clinical charts of relevant factors in 633 patients with positive CDI toxin tests were reviewed. Continuous variables were tested via Student’s t-test, and categorical data was analyzed via Chi-Square test. All variables with P < 0.1 in the univariate analysis were included in the multivariable logistic regression analysis.

Results: The overall mean age was 77.0 ± 7.0 years. In 96 (15.2%) of 633 patients, C. difficile toxin was detected again after the initial test. The length of hospital stay was longer in recurrent CDI group than in non-recurrent group (80.54 ± 89.44 vs. 43.81 ± 65.42, P < 0.001). Patients with eGFR < 60 ml/min/1.73 m² were at higher risk for the development of recurrent CDI than those with normal renal function (OR 1.844; 95% CI, 1.139–2.985; P = 0.015). There were no significant differences on mean age (77.21 ± 6.65 in recurrent CDI group vs. 77.01 ± 7.04 in non-recurrent CDI group, P = 0.799) and proton pump inhibitor therapy (OR 1.277; 95% CI, 0.825 to 1.977, P = 0.272) between both groups. Renal function and length of hospital stay were significantly associated with recurrence of CDI.

Conclusion: In this study, impaired renal function and prolonged hospitalization were related to the increased risk of recurrent CDI.

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

References

P0421 CLINICAL CHARACTERISTICS OF CYTOMEGALOVIRUS COLITIS: 15 YEAR-EXPERIENCE IN A TERTIARY MEDICAL CENTER

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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 known or 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]. The case number of CMV colitis in immunocompetent patient seemed increasing in our hospital these years. There was no single study showing comprehensive clinical characteristics, identifying the independent factors of in-hospital mortality and comparing the differences between immunocompetent and compromised patients with CMV colitis. Therefore, we tried to clarify the issue in this study.

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. IUCA admission (P = 0.010), requisite 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 ≥ 59 mg/dL (P = 0.011) negatively impacted on overall survival. There were older and more comorbidities in immunocompetent group. However, the in-hospital mortality rate and overall survival rate was similar to immunocompromised group. Besides, Clostridium difficile infection or steroid use 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

Characteristic | Odd ratio | 95%CI | P-value
--- | --- | --- | ---
Univariate analysis | | | |
Age ≥ 65y | 2.071 | 0.691–6.209 | 0.194
Gender (male/female) | 0.545 | 0.184–1.619 | 0.275
Immunocompromised status | 0.986 | 0.328–2.969 | 0.981
Intensive care unit admission | 6.871 | 2.068–22.833 | 0.002*
Requisite time of diagnosis (day after admission) | 1.034 | 1.002–1.066 | 0.034*
General condition | | | |
Sepsis | 1.039*10^10 | 0.000–>10^12 | 0.998
Shock | 5.714 | 1.793–18.210 | 0.003*
Respiratory failure | 4.062 | 1.389–12.610 | 0.015*
Operation before diagnosis | 5.200 | 0.583–17.553 | 0.180
Underlying diseases | | | |
Inflammatory bowel disease | 0.000 | 0.000 | 0.999
Systemic lupus erythematosus | 4.900 | 0.747–32.123 | 0.038
Solid organ transplantation | 2.941 | 0.147–49.636 | 0.454
Solid organ malignancy | 0.941 | 0.092–9.671 | 0.959
Hematological malignancy | 2.941 | 0.174–49.636 | 0.454
Liver cirrhosis | 0.941 | 0.092–9.671 | 0.959
Chronic kidney disease | 2.067 | 0.576–7.421 | 0.265
End stage renal disease | 3.357 | 0.742–15.181 | 0.116
Diabetes mellitus | 1.682 | 0.543–5.205 | 0.367
HIV infection | 0.000 | 0.000–>10^13 | 0.999
Immunosuppressive medication | | | |
Immunosuppressant | 3.200 | 0.583–17.553 | 0.002
Chemotherapy | 4.846*10^10 | 0.000–>10^13 | 1.000
Steroid | 1.124 | 0.336–3.764 | 0.849
Shocked over 1 month | 2.350 | 0.472–11.708 | 0.297
Laboratory data | | | |
Total WBC count (×/mcL) | 1.000 | 1.000–1.000 | 0.419
ANC (×/mcL) | 1.000 | 1.000–1.000 | 0.254
ALC (×/mcL) | 0.999 | 0.998–1.000 | 0.018*
Hemoglobin level (g/dL) | 0.668 | 0.485–0.918 | 0.013*
Platelet count (×/1000/mm³) | 0.995 | 0.990–1.001 | 0.100
Creatinine (mg/dL) | 1.448 | 1.059–1.978 | 0.020*
ALT (IU/L) | 0.995 | 0.958–1.033 | 0.787
Bilirubin (mg/dL) | 1.370 | 0.965–1.944 | 0.030
Albumin (g/dL) | 0.625 | 0.231–1.687 | 0.354
C-reactive protein (mg/dL) | 0.109 | 0.000–1.018 | 0.047*

Viral markers (continued)
Analysis of the clinical factors associated with in-hospital mortality in all patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-reactive protein (mg/dL)</td>
<td>1.021</td>
<td>0.752 to 1.367</td>
<td>0.692</td>
</tr>
<tr>
<td>Cytomegalovirus pp65 antigenemia</td>
<td>0.657</td>
<td>0.371 to 1.164</td>
<td>0.165</td>
</tr>
<tr>
<td>Cytomegalovirus IgG positive</td>
<td>1.000</td>
<td>0.738 to 1.355</td>
<td>1.000</td>
</tr>
<tr>
<td>Cytomegalovirus IgM positive</td>
<td>0.656</td>
<td>0.333 to 1.293</td>
<td>0.228</td>
</tr>
</tbody>
</table>

Conclusion: Immunocompromised 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 CDAD.

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

References
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P0423 A RANDOMISED CONTROLLED TRIAL OF RIFAXIMIN TO PREVENT RELAPSE OF CLOSTRIDIUM DIFFICILE INFECTION ASSOCIATED WITH CLOSTRIDIUM DIFFICILE INFECTION: META-ANALYSIS OF PIVOTAL RANDOMIZED CONTROLLED TRIALS

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Introduction: Clostridium difficile associated diarrhea (CDAD) is a common nosocomial infection. The most commonly prescribed treatments, metronidazole and vancomycin, have a primary cure rate of 90% but in 1 out of 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 diarrhea 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 type 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 NCT01670179; 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. 13% had a prior recorded episode of CDAD in the previous 12 months. 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 reduced within 12 weeks compared to 11/69 (15.9%) on rifaximin, a difference between groups of –13.7% (95% CI –28.1% to 0.7%, p = 0.06). The relapse also was 0.54 (95% CI 0.28 to 1.05, p = 0.07).

During 6-month safety 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 fidaxomycin 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 traditional fear that every acute appendicitis will eventually perforate leads to prompt surgery, but this fear may be outdated. In-hospital delay of surgery for acute appendicitis has been subject of a large number of studies. However, consensus about the consequences of delaying appendectomy is lacking, which is reflected in variety or absence of recommendations in guidelines.

Aims & Methods: This study was to assess in-hospital delay of surgery and determine risk factors for perforation 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 hours or more, the adjusted odds ratio was 1.32 (95% CI 1.20–1.44) compared with 24 hours or less. 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 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 threefold 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 threefold, 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**


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**P0428 THE PROPHYLACTIC CLIP APPLICATION BEFORE SNARE POLYPECTOMY DECREASES IMMEDIATE POST-POLYPECTOMY BLEEDING IN LARGE PEDUNCULATED POLyps**

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Introduction: Bleeding (BB) is the most common complication following polypectomy, especially in cases with large pedunculated polyps. Although the clip application before snare polypectomy may decrease PPB, there were few prospective randomized studies to confirm the efficacy of prophylactic clip application. This study aimed to investigate whether prophylactic clip application for large pedunculated colorectal polyps could decrease PPB and to evaluate associated risk factors of BB.

**Aims & Methods:** We enrolled 137 pedunculated polyps (≥1 cm in size) in 116 patients who underwent polypectomy. Polyps were randomized into the two groups with or without prophylactic clip application. Immediate PPB was defined as bleeding that continued for over 30 seconds from the polypectomy site and graded from grade 1 to 4, and delayed bleeding was defined as a history of haematochezia from the day of procedure to the day of first visit of outpatient clinic.

**Results:** Sixty-seven polyps were included in the clip group and 70 polyps in the control group. Immediate PPB occurred in 6 cases (9.0%) of the clip group vs. 9 cases (12.9%) of the control group (P = 0.008). Delayed bleeding occurred in five polyps in both groups (P = 0.943). The prophylactic clip application was a significant factor for lowering immediate PPB in the univariate (OR 0.215, 95% CI 0.081–0.571, P = 0.002) and multivariate analysis (OR 0.210, 95% CI 0.074–0.591, P = 0.003). The occurrence of immediate PPB of grade 3–4 which needed endoscopic treatment was lower in the clip group than in the control group (4.5% vs. 20.0%, P = 0.008). However, that of grade 1–2 was not different in both groups (4.5% vs. 11.4%, P = 0.208).

**Conclusion:** The prophylactic clip application in large pedunculated polyps ≥1 cm is effective in reducing immediate PPB. Polyp size and stalk diameter are associated with PPB.

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

**References**


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**P0429 DOES CONTINUATION OF WARFARIN BECOME A POST-POLYPECTOMY ALTERNATIVE METHOD TO HEPARIN REPLACEMENT IN COLONIC POLYPECTOMY/ENDOSCOPIC MUCOSAL RESECTION?**

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Introduction: Heparin replacement (HR) during periprocedural periods is described in various guidelines as the recommended method while discontinuing warfarin. However, the rate of post-colonic 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.

**Aims & Methods:** This is a prospective multicenter single-arm exploratory study in Japanese patients who received warfarin for the purpose of prevention of thrombosis were prospectively enrolled and underwent colon 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 haematochezia 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 prophylactic 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 recorded lesions was 3.9% (3/76), but may range to 9.9% (8/81). There were no other adverse events.

**Conclusion:** The rate of post-colonic polypectomy/EMR bleeding in patients without discontinuation of warfarin single therapy was comparable to that in patients undergoing HR. Conventional polypectomy/EMR with 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**


(2.98% vs 1.49%, respectively). No patients experienced recurrent bleeding and a 18-month follow-up.

### Discussion of Interest
All authors have declared no conflicts of interest.

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**P0432 EARLY VERSUS STANDARD COLONOSCOPY – A RANDOMIZED CONTROLLED TRIAL IN PATIENTS WITH ACUTE LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE BLEED STUDY**

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**Introduction:** The incidence of acute lower gastrointestinal bleeding (LGIB) is estimated at 0.9 to 2.0% per 100,000 person years and male/female ratio of 1.18. In the developed world, 55% of LGIB cases are in the elderly. The incidence of LGIB is observed at 21 adults per 100,000 person years and male (82.1%) in the anticoagulant group were higher than those in the normal group (67.7%:11.2 years and 64.1%). There was no significant difference between the groups in size of poly and morphology. In the anticoagulant group, 34 patients received heparin bridging therapy with warfarin 30, warfarin + antiplatelet 1, rivaroxaban 1 and 33 patients discontinued anticoagulants (warfarin 8, warfarin + antiplatelet 1, rivaroxaban 10, apixaban 8, dabigatran 4, edoxaban 2). The incidence of PPC was no difference between two groups (1, 1 patient, respectively). There was no difference between the groups in age, sex, size of polyp and morphology. Recurrent bleeding didn’t occur. In the discontinued group, 1 patient developed acute myocardial infarction in next day after colonoscopy polypectomy.

**Conclusion:** Patients taking anticoagulants had an increased risk of PPC compared with the control even if the anticoagulants are discontinued. Heparin-bridge therapy might be responsible for increased PPC in patients taking anticoagulants.

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

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**P0433 THE COMPARISON OF DIRECT ORAL ANTICOAGULANTS (DOAC) AND WARFARIN FOR ANTAGOCULATION IN THE PATIENTS WITH GASTROINTESTINAL BLEEDING**


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**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 in the patients with gastrointestinal bleeding from January 2011 to March 2017 on the basis of single-center experience in Japan. We analyzed controlled red cell (CRC) and fresh frozen plasma (FFP) transfusion rate, 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.
Thrombotic embolism during hospitalization, n (%) 0 (0.0%) 1 (1.7%) 0.47

The duration from bleeding to discharge, days 9.8/C6 6.2/C6 longer in Warfarin group (9.0/C6 5.6% vs 20.0%, p/C6 0.11). The duration from bleeding to endoscopy had no significant difference between both group (5.5 days vs 3.2/C6 0.2 days, p = 0.52), but the duration from endoscopy to discharge was significantly longer in Warfarin group (9.0/C6 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/C6 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 the group of the patients with gastrointestinal bleeding, and the rate of FFP transfusion in Warfarin group of the patients with gastrointestinal bleeding was 31 (51.7%) of Warfarin group. Hemoglobin tended to be lower both groups. Upper gastrointestinal bleeding occurred 6 (33.3%) of DOAC group and 31 (51.7%) of Warfarin group. Hemoglobin trended to be lower in both groups. DOAC group had no difference regarding prothrombin time (PT-INR) was significantly prolonged in Warfarin group.

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

**P0435 INCREASED INCIDENCE OF OVARIAN CANCER FOLLOWING COLORECTAL CANCER: A KOREAN NATIONWIDE COHORT STUDY**

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Introduction: In Korea, colorectal cancer is the most common cancer among old 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 habits. Furthermore, due to advancements in medicine, the survival rate of those with advanced colon cancer is increasing. An increased risk of malignant tumors 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 women diagnosed with colorectal cancer than in the general population. If a woman diagnosed with colorectal cancer indeed has a higher incidence of ovarian cancer, a screening test can be performed on high-risk patients.

Aims & Methods: This was 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-age- and region-matched population were recruited. Propensity score matching methods 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 up 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. The 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 288,119 (0.12%) colorectal cancer patients and 258 out of 288,119 (0.09%) 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) = 5.05–10.04]. The colorectal cancer group 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), ovarian cancer was no difference in cancer group and control 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.

**P0436 WORLD ENDOSCOPY ORGANISATION CONSENSUS STATEMENTS ON POST-COLONOSCOPY/POST-IMAGING COLORECTAL CANCER**


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Introduction: Colonoscopy is an imperfect tool. Several publications confirm colorectal cancer may manifest after a negative colonoscopy.(1) 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 (PCCCR) 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. PCCCR can be thought of as the overarching term. PCCCR can be subcategorized 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 is 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- PCCCR/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 panel consisted of 20 voting members. The following topics were addressed by 2 working groups (WGs):

1. Aetiology WG
   a. Terminology of aetiology categories
   b. Risk factors/potential explanations of PCCCR
   c. How to ascribe potential explanations
d. Minimal colonoscopy, history and radiology datasets to examine PCCCR
   e. Molecular tests to be performed to examine PCCCR
   f. Prevention of PCCCR in high-risk groups

2. Performance WG
   a. PCCCR calculation & reporting
   b. PCCCR monitoring
   c. PCCCR papers-peer review
d. Post-imaging CRC A literature search was performed in MEDLINE and Cochrane using terms “colorectal cancer AND interval cancer”, “healthcare quality assurance AND colorectal cancer” and “healthcare quality assurance AND colorectal cancer AND interval cancer”. The final output consisted of 391 articles. Proposed statements were subjected to anonymous voting via e-mail correspondence. Each statement was scored on an scale of 1 (strongly agree) to

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**A317**
Excess risk of second primary cancers in young-onset colorectal cancer survivors

Introduction: 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 (up to 60% for young CRC patients) [2–3]. Excluding rate of young-onset CRC, coupled with increased survival relapse, 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 were at high risk of second malignancies (SPCs) in certain cancer survivors, including CRC. Several population-based studies revealed that patients with a history of CRC were at high risk of SPCs, with increased age. There is a growing study reporting the risk of second primary cancers (SPCs) in certain cancer survivors, including CRC.

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 1973 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, localized stage, SEER stage, cancer subsite, radiation therapy. 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 Zhijiang Institute of Gastroenterology, Sir Run Run Shaw Hospital, China.

Results: In total, there were 54,472 survivors who developed 51,084 SPCs during the follow-up, including 3283 young (young aged 50). 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 = 3.86), colon (SIR = 3.77), rectum (SIR = 3.36), bile ducts (SIR = 3.70) were the most observed, a recommendation for or against a particular statement required both >50% of participants in favour in <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 consensus aiming to standardise terminology around PCCRC. Each previous study defined PCCRC differently, making its use for aetiology attribution and quantitative assessment of cases. A Root-Cause Analysis Approach to SPCs in certain cancer survivors, including CRC. Several population-based studies revealed that patients with a history of CRC were at high risk of SPCs, with increased age. SIRs of all solid tumors and hematological disease were significantly increased in the young.

References

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

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FOBT is two-fold higher in gFOBT than in FIT, which supports the use of FIT over gFOBT as 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. Wienet: 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
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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-hip ratio (WHR), weight-height ratio (WHR), weight-hip-height ratio (WHHR), 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 WHHR significantly predicted CRC in men but the association was weaker in women and differed between studies. We identified WC as 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 WHHR 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 participants, body composition measures predicted CRC in men but not in women. WC was the best predictor in men, in women WC was the best predictor of CRC and CC in men and the association was only significant in overweight/obese men in stratified analyses. Gender difference in the interplay between sex and measures of adiposity in the adipose tissue may explain the lack of associations in women.

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

Reference

P0440 TH17 CELLS INDUCE EPITHELIAL-MESENCHYMAL TRANSITION VIA IL-17/PI3K/AKT/SNAIL PATHWAY IN COLORECTAL CANCER
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Introduction: T helper 17 (Th17) cells participate in the progression of various 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.

Aims & Methods: The study aimed to clarify the role of Th17 cells in CRC and identify the underlying molecular mechanisms. The percentage of Th17 cells and IL-17 expression were evaluated via flow cytometry, enzyme-linked immunosorbent assay and immunohistochemistry in tissue samples and peripheral blood. Effects and underlying molecular mechanisms of IL-17 cells on epithelial-mesenchymal transition (EMT) process were explored in vitro using IL-17 transfection and in nude mice by implanting IL-17 overexpressed CRC cells. To detect the expression of Th17 cells in CRC, SW480 cells were co-cultured with Th17 cells via transwell system. Cancer signaling phospho antibody microarray was used to explore the potential signaling pathway. The clinical significance of Th17 cells was investigated in tissue microarrays containing CRC tissues from 90 patients following surgery using immunohistochemistry.

Results: A higher percentage of Th17 cells and serum IL-17 level were found in CRC patients than healthy controls, and Th17 cells presented a gradual upward trend in normal epithelium-adenoma-carcinoma sequence. The overexpression of IL-17 significantly promoted cell proliferation and cancer cell invasion, and induced apoptosis in vitro and in vivo. IL-17 overexpression reduced the expression of E-cadherin and induced the expression of Snail, β-catenin, and Vimentin in both SW480 cells and tumor xenografts, suggesting that IL-17 could induce the EMT process in CRC. When co-cultured with Th17 cells, SW480 cells could directly promote the EMT process of tumor cells. Furthermore, using cancer signaling phospho antibody microarray, we found that PI3K/AKT/Snail signaling pathway played a key role in the regulation of EMT. EMT process could be reversed by LY294002 and IL-17 mAb intervention, suggesting that IL-17/PI3K/AKT/Snail pathway played a vital role in Th17 cells-induced EMT in CRC. Supporting these findings, in human CRC tissues, immunostaining indicated that the percentage of Th17 cells was significantly associated with E-cadherin expression and AKT phosphorylation. The clinical significance of Th17 cells was authenticated by revealing that the combination of intratumoral Th17 cells and E-cadherin served as a better prognosticator for postoperative tumor recurrence than either marker alone.

Conclusion: Th17 cells promote EMT process and facilitate tumor progression via activating IL-17/PI3K/AKT/Snail signaling pathway in CRC.

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

References
INTRODUCTION

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 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 statin use 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 alleles. The scores were specific for low density lipoprotein cholesterol (LDL), high density lipoprotein cholesterol (HDL) or triglycerides (TG). We tested on regular statin use and the genetic lipid scores with logistic regression models, adjusted for potential confounders.

DISCLOSURE OF INTEREST: All authors have declared no conflicts of interest.

References

P0444 LINC00152 LONG NON-CODING RNA FACILITATES CELL PROLIFERATION AND DNA HISTONE HYPERMETHYLATION AND PROMOTES THE TUMORIGENICITY OF KRAS-MUTANT COLORECTAL CANCER

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Introduction: Colonoscopy surveillance of polyps is based on their size, number and pathological features. The role of their genetic profile to predict advanced risk of AML, and shorter interval to their development. Genetic profile of polyps emerges as useful tool for colonoscopy surveillance. Disclosure of Interest: All authors have declared no conflicts of interest.

P0445 GENETIC PROFILE OF POLYPS AND RISK OF ADVANCED METACHRONOUS LESIONS

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Introduction: Colonoscopy surveillance of polyps is based on their size, number and pathological features. The role of their genetic profile to predict advanced risk of AML, and shorter interval to their development. Genetic profile of polyps emerges as useful tool for colonoscopy surveillance. Disclosure of Interest: All authors have declared no conflicts of interest.

P0446 MITOCHONDRIAL GLUTAMATE TRANSPORTER (SLC25A22) MEDIATES DNA AND HISTONE HYPERMETHYLATION AND PROMOTES THE TUMORIGENICITY OF KRAS-MUTANT COLORECTAL CANCER

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Introduction: Mitochondrial glutamate transporter (SLC25A22) is a key regulator in glutamine metabolism with reported roles in DNA methylation via histone and DNA hypermethylation. The role of SLC25A22 in DNA and histone methylation in CRC, its underlying mechanisms, and the association of SLC25A22 with epigenetic dysregulation in human CRC cohorts.

Aims & Methods: We aim to 1) evaluate the impact of mutant KRAS on DNA and histone methylation in CRC; 2) examine the role of SLC25A22 in DNA and histone methylation in KRAS-mutant CRC; 3) elucidate the underlying mechanisms that underlies SLC25A22-mediated epigenetic dysregulation; and 4) investigate the clinical implication of SLC25A22 in CRC.

Results: Using three pairs of isogenic cell lines harbouring wild-type and mutant KRAS (DKS80/WT vs DLD1(mutant); HKEC3/WT vs HT29(mutant); ICTC/WT vs ICT-KRAS(mutant)), we demonstrated that significant DNA and histone H3 hypermethylation in cell lines expressing mutant KRAS. DNA hypermethylation was associated with the up-regulation of 5-hmC, indicating sup- pressive DNA demethylation in KRAS mutant CRC cell lines. Metabolomic analysis revealed that KRAS mutation modified glutaminolysis via TCA cycle leading to high succinate and fumarate to -ketoglutarate, which was to pivotal in suppressing the enzymatic activity of dioxygenases such as TET and ALKBH, thereby leading to hypermethylation in CRC patients. DNA methylation was determined by the Illumina 880K methylation array and Methyl Light qMSP assays. Histone methylation was determined by Hi-C. Consistently, SLC25A22 expression was identified to be highly correlated with Glut1 expression and correlated with H3K9me3 and H3K4me3. Interestingly, simultaneously APC-loss and KRAS activating mutations synergistically up-regulated the expression of SLC25A22, a key regulator of glutamine metabolism via the TCA cycle. CRISPR-Cas9-mediated knockout of SLC25A22 knock- out cells significantly decreased DNA hypermethylation in KRAS-mutant CRC cell lines. Moreover, histone H3 hypermethylation was reduced at multiple histone marks after the knockout of SLC25A22. These data implied that SLC25A22 inhibited DNA and histone demethylases by promoting the produc- tion of active form of fumarate and succinate and suppressed the expression of SLC25A22 knockdown on DNA and histone methylation in KRAS-mutant CRC 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).
Conclusion: SLC25A22 promotes the tumorigenicity of KRAS mutant CRC by up-regulating ATP synthesis and histone hyperacylation, an effect further enhanced 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 COLONS CANCELL GROWTH AND SURVIVAL
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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 AS. Western blotting, neuraminidase treatment, expression of proteins involved in cell cycle progression, poly ADP-ribose polymere (PARP), caspase-9 and active caspase-3. Moreover, the effect of FSTL1 knockdown on cell death was evaluated in 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
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Introduction: TP53 mutation in colon 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) 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 equally in accelerated cell growth, enhanced invasiveness and the resistance against DNA-damaging 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: We 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 TP53Ex10 but also TP53Ex3 mutation, might promote malignant potentials including cancer stemness at the late phase of carcinogenesis. In general, TP53 protein in cancer region is represented as TP53Ex10 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
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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 morphiceptin analog with mu- and kappa-opioid receptor affinity, resulted in the development of acute phase of experimental colitis (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 intraperitoneal 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 colonic tumors as well as colon thickness and width after 14 weeks of disease induction. Myleoperoxidase activity, a marker of neutrophil infiltration, was inhibited by P-317 injections. Hematoylin and eosin staining confirmed inflammation and 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 HMGBI EXPRESSION CORRELATES WITH HIGHER EXPRESSION OF C-IAP2 AND PERK IN COLORECTAL CANCER
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Introduction: Colorectal cancer (CRC) is the third most common type of cancer worldwide and is the second leading cause of death due to cancer. The expression of C-IAP2 and PERK are associated with increased risk of colorectal cancer. High expression of C-IAP2 and PERK is known to be correlated with disease progression and poor prognosis. Several recent studies have shown that HMGBI is over-expressed in various types of cancers, including CRC, and those cases with higher expression of HMGBI are associated with lymphatic metastasis, distant metastasis and poor prognosis. Studies have shown that HMGBI is over-expressed in various types of cancers, including CRC, and those cases with higher expression of HMGBI are associated with lymphatic metastasis, distant metastasis and poor prognosis. Additionally, several recent studies have shown that HMGBI is over-expressed in various types of cancers, including CRC, and those cases with higher expression of HMGBI are associated with lymphatic metastasis, distant metastasis and poor prognosis. Additionally, several recent studies have shown that HMGBI is over-expressed in various types of cancers, including CRC, and those cases with higher expression of HMGBI are associated with lymphatic metastasis, distant metastasis and poor prognosis.
secreted by cancer cells may be involved in occurrence of tumor metastasis. 

In a study by Lu et al., the authors found that HMGB1 secreted by the primary tumors had an apoptotic effect on the Kupffer cells which promoted development of liver.

Furthermore, some researchers have shown that increased levels of c-IAP2 and pERK, the downstream effector molecules of HMGB1 are found in tumors of different stages. AUC 55 metabolites 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: In order to investigate 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. Serum HMGB1 concentration was 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 tissue.

Results: The CRC patients and CRC and 50 healthy subjects underwent HMGB1 testing. Resected specimen of CRC patients for HMGB1 mRNA and protein expression analysis. Serum HMGB1 levels in CRC patients were higher than that of the control group (8.42 ± 1.79 μg/L, P < 0.05).

The serum HMGB1 levels in CRC patients with distant metastasis were significantly higher (13.32 ± 6.12 vs. 7.57 ± 5.14 μg/L, P < 0.05). The expression of HMGB1 mRNA and protein expression in CRC tissues were 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 < 0.05), 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 node metastasis. It may inhibit apoptosis by inducing activation of pERK and cIAP2.

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

References

P0452 THE MICRONAS EXPRESSION PROFILES OF MULTIPLE COLORRECTAL TUMORS

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Introduction: Accumulating data indicate that some microRNAs (miRNAs or miRs) function as tumor suppressors or oncogenes in cancer development. We previously reported that certain miRNAs (miR-143, -145, -7, and -34a) were differentially expressed in samples of tumors and paired non-tumorous samples taken from the same patients with colorectal tumors, and there was a close relationship to adenoma-carcinoma sequence for these miRNAs expression.

Aims & Methods: In this study, we examined the miRNA expression profiles of multiple colorectal adenomas comparing between sporadic colorectal adenoma and familial adenomatous polyposis (FAP). We examined the miRNA expression profiles (miRs-143, -145, -7, and -34a) and morphological appearance of 102 sporadic colorectal adenomas (SA), 27 tumors of multiple colorectal adenoma (over 10 adenomas/one patient, MA), 21 tumors of FAP and 114 sporadic cancer (SC).

Results: The expression levels of miRs-143 and -145 were reduced in all tumors compared with the paired non-tumorous samples in the same patient. Especially, these miRNAs were significantly reduced in MA (P = 0.042 and P = 0.004) and FAP (P = 0.027 and P = 0.022) compared with SA. The expression levels of miR-7 were significantly up-regulated in cancers compared with adenomas (P < 0.001). The expression levels of miR-34a were significantly down-regulated in CA (P < 0.001). MA (P < 0.001), and FAP (P = 0.006) compared with SA.

Conclusion: These findings suggest that the malignant potential of MA and FAP was higher than SA, therefore MA needs strict follow-up like FAP.

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

Reference
Results: MPV, PCT, NLR and PLR were significantly higher in Group III compared to Group II. However, only MPV was significantly lower in Group II compared to group 1 (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 specificity and sensitivity of 80% and 91% respectively (r = 0.892). MPV and PCT were also significantly higher in patients with neoplastic polyps compared to patients with non-neoplastic polyps (MPV: 8.7±1.1 vs 8±1, p < 0.001 and PCT: 0.23±0.07 vs 0.19±0.05, p = 0.003).

Conclusion: MPV and PCT may have a role as useful and simple markers in the diagnostic evaluation of patients with colorectal cancer from patients with normal colonoscopic findings. In the clinical settings, these simple markers may be useful in selecting older patients for colonoscopic examination.

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

References
Kilincalp S et al. 2015;24(4):328-33.

**P0454 IMPROVING THE SELECTION OF COMPLETE RESPONDERS FOR WATCHFUL WAITING AFTER CHEMORADIOThERAPY FOR RECTAL CANCER: WHAT CAN WE LEARN FROM THE ‘MISSED’ PATHOLOGIC COMPLETE RESPONDERS AFTER SURGERY?**

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Introduction: Rectal cancer patients with clinical evidence of a complete response after chemoradiotherapy may be selected for watchful waiting instead of surgical resection (although currently mainly within the scope of clinical trials). The clinical selection of potential candidates for watchful waiting to date is mainly done using a combination of imaging (MRI) and endoscopy. However, it is known that with this strategy up to 29% of complete responders may still be missed. Failure to identify complete responders will deny these patients the option of watchful waiting as a result of which they will receive potentially unnecessary surgery. Investigating the reasons why some complete responders are missed with current selection tools can help to further optimize our selection strategy and help improve the identification of potential candidates for watchful waiting in the future.

Aims & Methods: Aim of this study was to assess what can be learned from operated (‘missed’) pathologic complete responders by re-evaluating their post-surgery results, suggesting that the selected features are robust and do not necessarily correlate to neoadjuvant treatment response and may be used as imaging biomarkers in the clinical setting.

The standard MRI protocol included T2-weighted (T2W) and diffusion-weighted imaging (DWI) sequences, as well as quantitative apparent diffusion coefficient (ADC) maps derived from the DWI scans. For each patient, the whole volume of the rectal tumour was delineated on pre-treatment T2W-MRI and ADC maps. For the four manual delineations across different readers/delineations. For the four manual delineations ±300/300 features per reader remained significantly performafter FDR correction. However, these features did not sustain after FDR correction for the fully automated segmentation. A final subset of 266 features remained stable and perform

**Table 1: Endoscopic features of patients with ‘missed’ complete response (pCR after surgery)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Present in (%) of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross residual tumour</td>
<td>33%</td>
</tr>
<tr>
<td>Polypoid tissue</td>
<td>38%</td>
</tr>
<tr>
<td>Ulcer with irregular border</td>
<td>29%</td>
</tr>
<tr>
<td>Flat ulcer</td>
<td>25%</td>
</tr>
<tr>
<td>White scar (with telangiectasia)</td>
<td>33%</td>
</tr>
</tbody>
</table>

Conclusion: Main reasons for missing a complete response after CRT are heterogeneous T2W-MRI signal, massive/spiculated fibrosis, residual diffusion-signal, yTN+ disease and residual mucosal abnormalities at endoscopy. Knowledge of these advanced features referring to help improve the selection of patients for watchful waiting in the future.

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

Reference

**P0455 RADIOIMAGING AS A NOVEL TOOL FOR PRE-TREATMENT RESPONSE PREDICTION IN RECTAL CANCER**


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Introduction: In patients with locally advanced rectal cancer (LARC) that show a very good response to neoadjuvant treatment, organ-preserving treatments such as watchful waiting may be a good alternative to surgery and can improve functional outcome and quality of life. If we can predict upfront (i.e. before start of CRT) how patients will respond to treatment this may create opportunities to further personalize and optimize the neoadjuvant treatment to enhance the chance of a good response, thereby ultimately offering more patients the chance of organ preservation. A promising new tool in this regard is ‘Radiomics’.

Radiomics refers to a collection of analytical methods to convert images into high dimensional data via a set of quantitative descriptors called ‘features’. These features have the potential to uncover disease characteristics that cannot be detected by means of conventional (visual) imaging evaluation. The aim of this study was to develop a Radiomics signature1 of patients with LARC and evaluate its potential value for pre-treatment prediction of the response to neoadjuvant chemoradiotherapy.

We retrospectively assessed the primary staging MRI’s (1.5T of 124 LARC patients treated with CRT. The standard MRI protocol included T2-weighted (T2W) and diffusion-weighted imaging (DWI) sequences, as well as quantitative apparent diffusion coefficient (ADC) maps derived from the DWI scans. For each patient, the whole volume of the rectal tumour was delineated on pre-treatment MRI. A final subset of 266 features remained stable and perform

**Table 1: Endoscopic features of patients with ‘missed’ complete response (pCR after surgery)**

<table>
<thead>
<tr>
<th>Feature</th>
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Reference

P0456  CORRELATION OF ELECTRICAL AND VISCOELASTIC PARAMETERS OF ERYTHROCYTES WITH FATTY ACID COMPOSITION OF THEIR MEMBRANES AND SERUM IN PATIENTS WITH COLORECTAL CANCER

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Introduction: An analysis of the efficient implementation of the guidelines for screening colorectal cancer (CRC) in patients with first diagnosed CRC (according to the archival case histories of the two medical institutions in Novosibirsk) was performed in 2013-2016, and leading reasons of late CRC diagnostics were identified.

Aims & Methods: We aimed to investigate the correlation of the electrical and viscoelastic parameters of erythrocytes with the fatty acid composition of their membranes and blood serum in patients with colorectal cancer (CRC) of different stages. 46 patients (median age of 53+9 years old) with CRC of various localizations and stages and 16 conditionally healthy patients were examined. Electrical and viscoelastic parameters of erythrocytes have been observed by dielectroviscosimetry. Fatty acid composition of erythrocyte membranes and serum has been studied using GC/MS system triple quad Agilent 7000B USA.

Results: Erythrocytes of patients with CRC were characterized by increasing the proportion of deform cells with reduced strain amplitude and surface charge (low levels of cell velocity to electrodes and dipole moment) (p<0.001:0.05). Metastasis was associated with an increase in the cell electrical conductivity, a sharp decrease of polarizability, and an increase in the tendency to hemolysis (p<0.0001:0.03). Saturated fatty acids prevailed in composition of erythrocyte membranes in patients with CRC; omega 6/omega 3 fatty acid index was decreased, while the level of linoleic acid was significantly increased as related to oleic acid in serum of the patients with CRC compared to the healthy people (p<0.01:0.04). The observed shifts correlated with a disease stage (r=0.04; p=0.04). The erythrocyte strain amplitude was associated with the level of unsaturated fatty acids in erythrocyte membranes (r=0.58; p<0.05), as well as with summarized viscosity (r=-0.47; p=0.03) and rigidity (r=-0.41; p<0.05). While the level of hemolysis of erythrocytes and their tendency to aggregate correlated with the level of lysofatty acids of fatty acids (r=0.54, p<0.04; r=0.42, p<0.05). The surface charge of erythrocytes more closely correlated to the level (C16:2 and C18:1) in the blood serum (r=-0.42; p=0.06). There was a sharp decrease in the crossover frequency to the high-frequency range (p=0.03), a decrease of the cell capacity (p<0.01), and a decrease of polarizability at high frequencies (106, 0.5 x 106 Hz) (p=0.02:0.05), as well as a decrease of C18:3, C20:2, C20:5 and C22:6 levels in erythrocyte membranes (but not in blood serum) at stages of CRC.

Conclusion: Revealing changes in the parameters of erythrocytes and fatty acid composition in blood serum associated with a stage of the disease can be promising for diagnostics and the case follow-up of patients with CRC.

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

References

P0457  CLINICOPATHOLOGICAL STUDY OF LATERALLY SPREADING TUMORS OF THE COLORECTUM

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Introduction: Laterally spreading tumors (LSTs) of the colorectum are classified into four subtypes according to their morphologic and histologic characteristics: (a) non-adenomatous type (LST-NG), (b) granular nodular mixed type (LST-GM), (c) non-granular flat-elevated type (LST-NFG), and (d) non-granular pseudo-depressed type (LST-NGP). Clinical features of each subtype of LSTs have not been fully evaluated.

Aims & Methods: The aim of this study was to clarify the clinicopathological characteristics and 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 assessed the clinical features (mean age, size, location, Incidence of concomitant carcinoma) according to their subtypes.

Results: Of these 422 lesions, a total of 11 (2.6%) were LST-NG, 34 (8.1%) LST-GM, 106 (24.9%) LST-NGM and 28 (6.6%) LST-NGP. Mean age of patients with each subtype was 68.3 years old for LST-NGH, 67.1 for LST-GM, 67.9 for LST-NFG, and 67.2 for LST-NGP. Male to female ratio (M/F) was 1.21 for LST-NGH, 2.05 for LST-GM, 1.95 for LST-NFG, and 1.65 for LST-NGP. Mean size of LST-NGH (21.2 mm) and LST-NGP (21.2 mm) was significantly larger than that of LST-NFG (17.0 mm) and LST-NGPD (15.1 mm). All subtypes were located predominantly in the proximal colon. Incidences of concomitant carcinomas in LST-NGH, LST-GM, LST-NFG, and LST-NGP were 2% (1 out of 151), 16.3% (34 out of 209), and 57.1% (16 out of 28), respectively. Incidences of concomitant submucosal carcinomas in LST-NGH, LST-GM, LST-NFG, 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. Therefore 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

P0458  POST-INVESTIGATION COLORECTAL CANCER RATES INCLUDING POST COLONOSCOPY COLORECTAL CANCER RATES IN A DISTRICT GENERAL HOSPITAL: THE POOLE EXPERIENCE MARCH 2015 TO FEBRUARY 2017

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Introduction: Post-colonoscopy colorectal cancer (PC-CRC) rates are proposed as a quality indicator of a colorectal screening programme. Literature is growing but important to assess local practise and to compare with recent published National Data. We aimed to calculate the PC-CRC and the post CT CRC rates in Poole Hospital using the number of colonoscopies or CT scans done within 3 years of a CRC diagnosis as the denominator for post-investigation PI -CRC calculations as outlined in a previous study1.

Aims & Methods: Retrospective audit of all patients diagnosed with CRC during a two year period 1st March 2015-28th February 2017 identified via the Somerset Cancer registry database for Poole Hospital using Crystal software. Previous colonoscopy and CT Colonoscopy (CTC) or CT abdomen results in the 3 years preceding the diagnostic investigations were reviewed across two neighbouring hospitals sharing the same electronic patient records. If patients had multiple surveillance colonoscopies the latest was counted as false negative as in previous studies.

Results: 416 patients were identified, 67 were excluded (39 non adenocarcinoma, 3 out of area, 12 patients where earlier decision was best supportive care, 6 patients diagnosed at laparotomy, 2 patients with abnormal PET scans and 6 with incomplete datasets). 348 patients were included for analysis. Colorectal cancer was diagnosed by colonoscopy in 200 patients and by CTC or CT in 148 patients. The PC-CRC rates in Poole hospital were 2.6% (95% CI 1.8-3.4) in the surveillance group and 0.3% (95% CI 0.2-0.5) in the diagnostic group. The overall PC-CRC rate was 6.5 (+3.6, –2.2) % (90% confidence interval). In the surveillance group, 1 patient with a high grade polyp was detected, but did not transfer to assessing quality indicators at a local level. All patients with each subtype was 68.3 years old for LST-GH, 67.1 for LST-GM, 67.9 for LST-NFG, and 67.2 for LST-NGP. Male to female ratio (M/F) was 1.21 for LST-NGH, 2.05 for LST-GM, 1.95 for LST-NFG, and 1.65 for LST-NGP. Mean size of LST-NGH (21.2 mm) and LST-NGP (21.2 mm) was significantly larger than that of LST-NFG (17.0 mm) and LST-NGPD (15.1 mm). All subtypes were located predominantly in the proximal colon. Incidences of concomitant carcinomas in LST-NGH, LST-GM, LST-NFG, and LST-NGP 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. Therefore 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
All other authors have declared no conflicts of interest.

Reference

P0459 RISK OF DETECTION OF GASTROINTESTINAL NEOPLASMS AND DEATH IN SYMPTOMATIC PATIENTS WITH A POSITIVE FECAL IMMUNOCHEMICAL TEST WITHOUT COLORECTAL CANCER
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Introduction: The fecal immunochromometric 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 ≥20mg hemoglobin/g of feces threshold. We performed a descriptive analysis of the differences 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.

Result: 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 (67.5±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 eosinophilic gastritis, 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 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 CSL.

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

Reference

P0460 LONG-TERM OUTCOMES OF TRANSLATIONAL COLORECTAL TUBE PLACEMENT FOR DISTAL STAGE II/III COLORECTAL CANCER WITH ACUTE COLORECTAL OBSTRUCTION
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Introduction: A new indication for translational colonic obstruction (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. Stent endoscopic treatment and emergency surgery were the other performed TCT placement as the standard treatment for CRC with ACO. To analyze the efficacy of TCT placement, we compared long-term outcomes for stage II/III CRC with ACO among patients in the two institutions.

Result: In total, 764 patients with distal stage II/III CRC were identified for this study. Among the 764 patients, 690 did not have ACO (non-ACO group), and 74 had ACO (ACO group). In the non-ACO group, we confirmed that the surgical quality was equivalent between the two institutions, with no significant differences in overall survival (OS) (P=0.271) or disease-free survival (DFS) (P=0.184). Among the 74 patients with ACO, 27 underwent emergency surgery (surgery group) and 47 underwent TCT placement (TCT group). The rate of primary resection/anastomosis was higher in the TCT group than in the surgery group (91.5% vs. 22.2%; P<0.001). No significant differences were noted between the two groups in OS and DFS (surgery vs. TCT: 5-year OS, 65.9% vs. 58.1%; P=0.452) or DFS (surgery vs. TCT: 5-year DFS, 47.6% vs. 43.1%; P=0.755). Subset analysis also showed no significant differences in OS and DFS between patients with stage II and stage III CRC.

Conclusion: TCT placement can achieve similar long-term outcomes to those of emergency surgery, with a high rate of primary resection and anastomosis for distal stage II/III CRC with ACO.

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

Reference

P0461 FACTORS ASSOCIATED WITH THE TECHNICAL DIFFICULTY OF DOUBLE-WIRE WOVEN UNCOVERED SELF-EXPANDABLE METALLIC STENT PLACEMENT FOR MALIGNANT COLORECTAL OBSTRUCTION

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Introduction: Self-expandable metallic stent placement for malignant colorectal obstruction has been widely used; however, factors affecting the technical difficulty of stenting remain unclear.

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 placement technique in each patient. Stent deployment time was defined as the time from reaching a lesion with a colonoscope to finish stenting. Technically difficult cases of stenting were defined as independent factors of the technical difficulty in stenting. We defined the technical difficulty of stenting for malignant colorectal obstruction. The median total procedural 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 stenting: presence of ascites (odds ratio, 2.483; 95% confidence interval [95% CI], 1.17–5.29; p=0.02), placement of stent over lesion (odds ratio, 4.80; 95% CI, 1.10–21.1; p=0.04).

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 were men (51.3%). The median age was 72 years old (interquartile range (IQR), 62–82 years old). One hundred eleven patients (57%) underwent stenting as a bridge to surgery, and 85 (43%) underwent stenting for palliation. The technical and clinical success rates were 98.5% and 97.0%, respectively. None of the patients required colostomy. For colonic perforation, the median total and clinical success rate of double-wire woven uncovered stent placement for malignant colorectal obstruction. Clinicians should perform this procedure carefully in patients with presence of ascites.

Disclosure of Interest: I. Maetani: Lecture fee: Century medical inc., Boston Scientific Japan., Piolax Medical Device, MC Medical
T. Yamada: personal fees: Century Medical Inc
T. Kuwai: personal fees: Boston Scientific Japan., Century Medical Inc
S. Saito: personal fees: Century Medical Inc., Boston Scientific Japan

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

Reference
P0462 PROGNOSIS AND CLINICOPATHOLOGICAL FACTORS OF PATIENTS WHO SELECTED THE FOLLOW-UP OPTION AMONG HIGH-RISK TI COLORECTAL CANCER PATIENTS AFTER ENDOSCOPIC RESECTION BASED ON JAPANESE CLINICAL PRACTICE GUIDELINE: A RETROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Colorectal cancer is the third most common cancer in the world and the fourth leading cause of cancer death. Treatment strategy for colorectal cancer is selected considering clinical stages. TI 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 considered to be at high risk of lymph node metastasis based on the indication of Japanese Society for Cancer of the Colon and Rectum guideline. 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’ 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 diagnosed as “high-risk” and clinicopathological features, presence or absence of recurrence and the final state 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 records.

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) 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 diagnosed as “high-risk” and clinicopathological features, presence or absence of recurrence and the final state 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 records.

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. (p value=0.81) between FU and AS groups. From provider’s notes in electric medical records, factors considered in selection of FU were extracted as follows: Patient’s values and preferences 8, sole presence of “depth” risk factor 7, possible intensive surgery due to T1CRC located in the lower rectum 3, other advanced malignancy 1, and perioperative risks: advanced age 5, past history of abdominal surgery or radiation 2 and severe comorbidities 12 (chronic heart failure 4, chronic kidney disease 2, connective tissue disease 2, lung disease 1 and abdominal surgery or radiation 2). In the other two groups, 12 patients were non-e-curable patients and 3 patients were non-e-curable patients.

Conclusion: Among high-risk group after endoscopic resection of T1CRC, no significant difference in OS, CSS nor RFS are detected between FU and AS groups. Factors considered in selecting FU were patient values and preferences, sole presence of “depth” risk factor and severe comorbidity including perioperative risk. Shared decision making should be achieved subsequent option in the high-risk group.

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

References
Results: In this study we developed and tested a controlled-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. A fully apposed, laser-cut nitinol stent was 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 cholangioscopy 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 matrix allowing slow release of paclitaxel. Naïve Yucatan swine were assigned to one of three standard dose animal. Stents in one standard dose animal migrated out of the bile duct between 15 and 30 days post-implant. Given the observed 60% reduction in tissue ingrowth and improve biliary stent patency rates.

Aims & Methods: In this study we developed and tested a controlled-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. At 60 days post-implant, moderate mucus and biofilm formation was observed within the stent, however in only 3 animals biliary ductal dilation was observed. At 60 days post-implant, no apparent differences in outcome were observed among the 3 stent control group by 60 days post-implant. Given the observed 60% reduction in tissue ingrowth and improve biliary stent patency rates.

Results: At 30 days post-implant, no significant tissue reaction to any stent was observed. However, all animals displayed mild bioloin formation and increased intraductal mucus production. Substantial dilation of the common bile duct was noted in 51% animals with no apparent relationship between drug coating and duct dilation. At 60 days post-implant, moderate mucus and biofilm formation was observed within the stent, however in only 3 animals biliary duct dilation persisted and majority of stents were fully apposed to the duct wall. Although some animals displayed minimal tissue hyperplasia at the proximal end of the stents, no tissue overgrowth or stent embedding was observed in any animal. Up to 60 days post-implant, no persistent clinical symptoms were observed in any animal. Some rapid dose animal out of the bile duct between days 15 and 30, this animal is not included in patency results. At both 30 and 60 day timepoints, no apparent differences in outcome were observed among the three study groups.

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 the cause 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 tissue overgrowth and all stent groups, which was expected to occur in the bare stent control group by 60 days post-implant. Given the observed 60% reduction in diameter of dilated ducts between days 30 and 60, we expect increased rate of apposition. Ongoing efforts include controlled follow-up for an additional 120 days, and in a second cohort, determination of in vivo drug release rates in the bile duct over a 30 day period. Future cholangioscopic and histopathological assessment of these swine will further clarify the safety and effectiveness of paclitaxel stent coatings to mediate bile duct tissue ingrowth. A total of 33 (64.7%) patients underwent subsequent surgery after EMR, and 18 (35.3%) chose endoscopic follow up. The histological characteristics of these swine will further clarify the safety and effectiveness of paclitaxel stent coatings to mediate bile duct tissue ingrowth.


References
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Introduction: Cholangiocarcinoma and pancreatic adenocarcinoma account for over 190,000 new cases of pancreaticobiliary malignancy worldwide annually. For palliation of obstructive jaundice in these patients, plastic or self-expanding metal stent (SEMS) is placed. However, re-occlusion rates for covered SEMS range from as high as 36% for uncovered metal stents, 25% for covered metal stents and 52% for plastic stents. Tissue ingrowth accounts for up to 76% of obstructions of bare metal stents. Stent occlusion can result in recurrent obstruction and typically requires endoscopic re-intervention. Therefore there is a real clinical need to reduce tissue ingrowth and improve biliary stent patency rates.

Aims & Methods: In this study we developed and tested a controlled-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. An expanded nitinol stent was 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 cholangioscopy 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 matrix allowing slow release of paclitaxel. Naïve Yucatan swine were assigned to one of three standard dose animal. Stents in one standard dose animal migrated out of the bile duct between days 15 and 30, this animal is not included in patency results. At both 30 and 60 day timepoints, no apparent differences in outcome were observed among the three study groups.

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 the cause 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 tissue overgrowth and all stent groups, which was expected to occur in the bare stent control group by 60 days post-implant. Given the observed 60% reduction in diameter of dilated ducts between days 30 and 60, we expect increased rate of apposition. Ongoing efforts include controlled follow-up for an additional 120 days, and in a second cohort, determination of in vivo drug release rates in the bile duct over a 30 day period. Future cholangioscopic and histopathological assessment of these swine will further clarify the safety and effectiveness of paclitaxel stent coatings to mediate bile duct tissue ingrowth.
Aims & Methods: In this prospective study, we evaluated the overall survival (OS) of CRC patients treated with first-line chemotherapy and undergoing surveillance at our institution. The study population consisted of 131 patients with colorectal cancer (CRC). The patients were divided into two groups: Group A (n=71) consisted of patients who underwent surgical resection of colorectal cancer, and Group B (n=60) consisted of patients who underwent first-line chemotherapy. The patients in both groups were followed for a median of 58.6 months and 69.1 months, respectively. The median survival times for Group A and Group B were 112.6 and 106.4 months, respectively.

Conclusion: The results of this study suggest that surgical resection is associated with overall survival benefit compared to first-line chemotherapy for patients with colorectal cancer. However, further studies are needed to confirm these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.
incidences of metachronous colorectal neoplasms were compared with each other group. 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 neoplasm were 24.1% (100 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 differences between group A and B (p < 0.005), B and C (p < 0.001), and A and C (p < 0.001). The cumulative incidences of metachronous index lesion were 7.2% (42 patients with 45 high-grade adenomas or cancers) in group A, 5.1% (25 with 27) in group B, and 2.3% (12 with 15) in group C, respectively. The prevalence of metachronous index lesion was highest in group A followed by those in group B and C, and significant difference was observed between group A and C (p < 0.001), 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 differences 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 long-term 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 colonoscopy were at very low risk of advanced neoplasia within five years during follow-up.

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 reduced physical activity (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 hypochondrisis, 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 hypochondrisis.

<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>
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<tr>
<td>Self-distraction</td>
<td>.34(0.06)** n.s.</td>
<td>.22(0.06)** n.s.</td>
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<tr>
<td>Denial</td>
<td>.24(0.06)** n.s.</td>
<td>.28(0.05)** n.s.</td>
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<td>Ventiang</td>
<td>.36(0.07)** n.s.</td>
<td>.32(0.06)** n.s.</td>
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<td>Substance-use</td>
<td>.40(0.07)** n.s.</td>
<td>.19(0.06)** n.s.</td>
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<tr>
<td>Disengagement</td>
<td>.52(0.06)** n.s.</td>
<td>.55(0.06)** n.s.</td>
<td></td>
</tr>
<tr>
<td>Self-blame</td>
<td>.53(0.06)** n.s.</td>
<td>.62(0.04)** n.s.</td>
<td></td>
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<tr>
<td>Somatisation</td>
<td>.62(0.09)** (n.s.)</td>
<td>.60(0.07)** ***</td>
<td>.17(0.04)** n.s.</td>
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<td>Not applicable n.s.</td>
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<tr>
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<tr>
<td>Denial and somatisation</td>
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<td>Not applicable n.s.</td>
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<tr>
<td>Denial and hypochondrisis</td>
<td>Not applicable n.s.</td>
<td>Not applicable n.s.</td>
<td>Not applicable n.s.</td>
</tr>
</tbody>
</table>

Results: Significant standardised path model coefficients involving neuroticism across the two studies. In Study 1, neuroticism exerted indirect effects on sympotm 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 hypochondrisis. 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 < .05, **p < .01, *p < .05. n.s. denotes non-significant coefficients).

Conclusion: Somatisation and hypochondrisis were found to be intercorrelated in the relationship between neuroticism, avoidant coping (through substance-use, disengagement and denial) and GI symptom burden. Two interpretations of the findings are: (1) avoidant coping can stimulate somatisation, leading to reduced physical activity, which can interfere with digestion; and (2) GI symptoms are among the wide range of functional somatic symptoms that can arise from avoidant coping. These findings open new avenues for multidisciplinary treatment of disengagement and denial and GI symptom burden through substance-use-based coping and somatisation, as well as neuroticism through self-blame and somatisation, with the two intermediary effects on symptom burden via row variables.

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

References

**Disclosure of Interest:** The expression of CRF1 and CRF2 on HT29 cell surfaces was blocked by irrelevant polyclonal RT-PCR, and CRF1 and CRF2 receptor antagonist treatment with 100 nM CRF for 72h, the transmission of FITC-labeled Dextran was measured by using a transwell chamber; the structural changes of tight junctions were observed under transmission electron microscopy; the Messenger RNA expression of CK8, F-actin, occludin, claudin-1, and ZO-1 and their protein expression of CK8, F-actin and ZO-1 were detected by immunoblotting and immunofluorescence. The activity of RhoA was detected by immunoprecipitation. Furthermore, effects of CRF on intestinal epithelial permeability were examined in CK8-silenced HT29 cells, which were constructed by shRNA interference.

**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, together with structural disruption. The expression of F-actin, occludin and claudin-1 was downregulated. RhoA activity peaked at 30 min after CRF treatment. The increased permeability and the downregulation of claudin-1 and occludin induced by CRF treatment were not blocked by CRF8 silencing. Nevertheless, CK8 silencing blocked the effects of CRF with regard to decrease in the expression of F-actin and ZO-1 and increase in RhoA activity.

**Conclusion:** CRF may increase intestinal epithelial permeability by upregulating CK8 expression, activating the RhoA signaling pathway, promoting intestinal epithelial cytoskeleton remodeling, and decreasing the expression of the tight junction protein ZO-1. Other CRK8-independent pathways may lead to decreased expression of claudin-1 and occludin, which also contributes to increased intestinal epithelial permeability.

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

**Introduction:** The complex pathogenesis of irritable bowel syndrome (IBS) is not well understood. Drossman et al., in the Rome III Diagnostic Criteria, suggested that IBS is a functional bowel disorder and a category of functional GI disorders. The diagnosis of IBS is based on symptom assessment and the Rome III Diagnostic Criteria. According to an epidemiological study, IBS mainly affects young adults of 20–40 years old, and the quality of their lives is seriously affected. The pathogenesis of IBS has not been clarified. Consequently, the usual treatment of the disease in Western medicine involves symptomatic therapy, 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. A series of randomized, block-controlled trials have shown that TongXie-YaoFang(TXYF) formula can significantly improve the clinical symptoms, such as diarrhea and abdominal pain or discomfort, of patients with IBS and improve the quality of their lives. However, the specific mechanism of it has not been completely elaborated. The purpose of this paper is to observe the regulating effects of TXYF-formula on colonic epithelial secretion via relevant ion transporters.

**Aims & Methods:** We aimed to investigate the pharmacological effect of TongXie-YaoFang(TXYF) formula, a Chinese herbal formula, on D-IBS rats. A neonatal maternal separation plus restraint stress(NMS+RS) model of D-IBS has been established to study the interference between stress and the development of IBS. The effect of TXYF-formula on colonic epithelial secretion can be used as an indicator of the disease. The treatment of TXYF-formula on D-IBS has been clarified. Consequently, the usual treatment of the disease in Western medicine involves symptomatic therapy, 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 in China have begun to seek treatment with TCM. A series of randomized, double-blind, placebo-controlled trials have shown that TongXie-YaoFang(TXYF) formula can significantly improve the clinical symptoms, such as diarrhea and abdominal pain or discomfort, of patients with IBS and improve the quality of their lives. However, the specific mechanism of it has not been completely elaborated. The purpose of this paper is to observe the regulating effects of TXYF-formula on colonic epithelial secretion via relevant ion transporters.
P0475 DIOSMECTITE CHRONIC TREATMENT SUPPRESSES GUT VISCERAL HYPERSENSITIVITY AND INTESTINAL TRANSIT ACCELERATION INDUCED BY CHRONIC STRESS IN RAT
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Introduction: Stressful life events may trigger the symptoms of irritable bowel syndrome (IBS). Preclinical chronic stress models have been developed in animals 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 silicate clay, is an adsorbent widely used for the treatment of several gastrointestinal diseases, mainly diarrhoea 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. Visceral hypersensitivity was induced by repeated colorectal distension (CRD) (10 cm, n = 10) and stress was 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 was evaluated with colorectal distensions (CRD) 0.8, 1.2 and 2.0 mL placed at 1 cm from the anus. Rectal withdrawal reflexes were tested before and after treatment with diosmectite.

Results: Under basal conditions, chronic oral treatment with diosmectite did not modify visceral sensitivity in response to CRD (20 ± 2 vs. 23 ± 1 cpm/5 mm for vehicle and 20.6 ± 4 vs. 24 ± 2 cpm for 1.2 mL; p = 0.97 and p = 0.75 respectively) or intestinal transit in comparison with control group (p = 0.33). WAS treatment significantly increased the number of abdominal contractions at both 0.8 and 1.2 ml of CRD vs vehicle values (30.1 ± 2.5 vs. 19.7 ± 2.8 at 0.8 ml; p < 0.05) and 34 ± 2 vs. 24 ± 2 cpm at 1.2 ml (p < 0.05). One hour after the beginning of the last WAS session a significant increase of the fecal output in comparison with vehicle was observed (6.3 ± 1.1 vs. 0.3 ± 0.3; p < 0.05) and 5.5 ± 2 vs. 2.0 ± 2 at 1.2 ml (p < 0.05). Under basal conditions and 30 min after the last WAS session.

Conclusion: For the first time, these data illustrate in wistar rat, that diosmectite treatment is able to suppress WAS-induced visceral hypersensitivity to colorectal distension. This study adds relevant evidence to the use of diosmectite treatment in the management of IBS.

Disclosure of Interest: H. Mathieu-Fortunet: Ipsen employee. All other authors have declared no conflicts of interest.

References

P0477 NEGATIVE EFFECTS OF BIFIDOBACTERIUM BIFIDUS ON THE RAT WITH COLONIC VISCERAL HYPERSENSIVITY INDUCED BY ACETIC ACID PERFUSION
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Introduction: Bifidobacterium with appropriate doses has been suggested to improve the gut transit in patients with IBS. Bifidobacterium bifidus has 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 colonic injection of 0.5% acetic acid (AA) in 10-day old rats while control (NS) induced with 0.9% normal saline. The abdominal withdrawal reflexes (AWR), induced by colorectal distension (CRD), was used to quantify the level of colonic sensitivity in adult rats. The CVH rats in 42-day old were treated by gavage administration with Bifidobacterium bifidus (1010 CFU/day) for two weeks (CVH-Bifi). Other CVH rats were treated with 0.9% NaCl (CVH-NS). A group of control with normal sensitivity was treated with sham gavage (Con-sham). In day 56th, another AWR was assessed, and the hippocampus and prefrontal cortex (PFC) were separated and used to analyze the c-fos, NMDAR 2A, NMDAR 2B with western-blot.

Results: After two-week gavage, the CVH-Bifi presented lower volume than that of CVH-NS in CRD, though without significant difference (2.35 ± 0.28 vs.2.40 ± 0.64, p = 0.11). No significant difference was found between CVH-Bifi and Con-sham as well. In hippocampus, c-fos of CVH-Bifi was higher than CVH-NS (0.37 ± 0.08, p = 0.032) and CVH-NS (0.77 ± 0.23 vs.0.84 ± 0.10, p = 0.171). The NMDAR2A of CVH-Bifi was higher than that of Con-sham (1.04 ± 0.22 vs. 0.51 ± 0.16, p = 0.055). In PFC, the NMDAR2A of CVH-Bifi was significantly higher than that of CVH-NS (0.63 ± 0.14 vs. 0.21 ± 0.05, p = 0.004) and Con-sham (0.63 ± 0.14 vs.0.20 ± 0.07, p = 0.001).

Conclusion: We reported the negative effects of Bifidobacterium bifidus gavage, which induced higher activation of c-fos and higher expression of NMDAR 2A in hippocampus and PFC. The effects of Bifidobacterium bifidus and its metabolites on visceral sensitivity needs further study to clarify.

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

References
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Introduction: DA-9701, a newly developed prokinetic agent formulated with Biochanin A and Corydalis rhizoma, has been shown to effectively treat functional dyspepsia. Recently, it has also been suspected to improve gastrointestinal motor function.

Aims & Methods: The aims of this study were to assess the effect of DA-9701 on colonic transit time (CCT) and symptoms of functional constipation. We prospectively enrolled 33 patients with functional constipation based on the Rome III criteria. The patients received 30 mg DA-9701 three times a day for 24 days. CCT was estimated initially and at the end of the treatment. We also analyzed symptoms such as spontaneous bowel movements (SBMs), straining, stool form, feeling of incomplete emptying and anorectal blockage, abdominal discomfort and pain, overall defecation satisfaction, and incidence of adverse events.
Results: Twenty-seven patients completed the study. DA-9701 was associated with reduced CTT from 13.0 ± 9.8 to 23.7 ± 9.1 hours (P = 0.001). Segmental CTT also significantly decreased after treatment (right CTT: from 14.0 ± 8.2 to 7.5 ± 4.7 hours, P = 0.001; rectosigmoid transit time: from 14.2 ± 11.9 to 9.5 ± 10.9 hours, P = 0.021). In conclusion, all constipation-related subjective symptoms, including SBM frequency, significantly improved compared to those before treatment. Serious adverse events did not occur.

Conclusion: DA-9701 accelerates colonic transit and safely improves symptoms in patients with functional constipation. Therefore, we suggest that this novel agent could help to treat patients with this condition.

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

References

P0484 WHAT DETERMINES WHETHER INDIVIDUALS WITH IRRITABLE BOWEL SYNDROME IN THE GENERAL POPULATION SEEK MEDICAL CARE FOR THEIR DISORDER?
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Introduction: No studies have investigated how commonly individuals meeting the new Rome IV IBS criteria seek medical care for their bowel symptoms, or what factors determine medical consultation.

Aims & Methods: We aimed to characterize health care-seeking behaviour in Rome IV IBS subjects in a large multi-national population sample. Data was retrieved from a large Internet survey. The survey was completed by 6300 individuals distributed equally between United States, United Kingdom and Canada. Equal sex, age and education distribution across the countries was ensured by use of quota-based sampling. The survey included questions on demographics, the Rome IV diagnostic questionnaire, the Patient Health Questionnaire (PHQ-12), the 8-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 (1949 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 sex distribution (63.6% vs. 69% female (p = 0.4) and somatization scores (p = 0.34) as non-consulters, but were older (mean age 47.1 ± 14.8 vs. 40.5 ± 13.1 years), more concerned about their bowel function (p < 0.001), more frequently bloated (p = 0.001), and experienced greater impact on social activities (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), prescribed 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>
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<th>IBS consultants</th>
<th>IBS non-consulters</th>
<th>p-value</th>
</tr>
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<tbody>
<tr>
<td><strong>Most bothersome symptom</strong></td>
<td>75 (38.5)</td>
<td>48 (43.6)</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>40 (24.6)</td>
<td>22 (20.9)</td>
</tr>
<tr>
<td>stools/low frequency</td>
<td>46 (29.5)</td>
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<td>bloating</td>
<td>8 (4.1)</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>of the above frequency</td>
<td>72 (36.9)</td>
<td>31 (28.2)</td>
</tr>
<tr>
<td>Abdominal pain &gt;3</td>
<td>158 (81.0)</td>
<td>74 (67.3)</td>
</tr>
<tr>
<td>times/week Bloating &gt;3</td>
<td>12 (6.2)</td>
<td>25 (22.7)</td>
</tr>
<tr>
<td>times/month</td>
<td>106 (54.4)</td>
<td>70 (63.3)</td>
</tr>
<tr>
<td>bowel function Not at all</td>
<td>77 (39.5)</td>
<td>15 (13.6)</td>
</tr>
<tr>
<td>Somatization</td>
<td>PHQ-12 score 7 or above</td>
<td>147 (65.4)</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>past 4 weeks (SF-8)</td>
<td>18 (9.2)</td>
<td>15 (13.6)</td>
</tr>
<tr>
<td>Very poor/poor Fair/very good</td>
<td>39 (17.3)</td>
<td>32 (29.2)</td>
</tr>
<tr>
<td>Good/very good/excellent</td>
<td>110 (56.4)</td>
<td>58 (52.7)</td>
</tr>
<tr>
<td>Mild/moderate Severe/very severe</td>
<td>63 (32.3)</td>
<td>33 (30.0)</td>
</tr>
<tr>
<td>Limitation in social activities</td>
<td>24 (12.3)</td>
<td>29 (26.4)</td>
</tr>
<tr>
<td>due to physical health or emotional problems past 4 weeks (SF-8)</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>

(continued)
## Medication use

<table>
<thead>
<tr>
<th>Frequency of doctor visits</th>
<th>At least one visit/year</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS consultors</td>
<td>159 (81.5)</td>
<td>0.19</td>
</tr>
<tr>
<td>IBS non-consultors</td>
<td>82 (74.5)</td>
<td></td>
</tr>
</tbody>
</table>

## Frequency of doctor visits

<table>
<thead>
<tr>
<th>For GI related issues</th>
<th>For pain, over the counter</th>
<th>For pain, prescribed by doctor</th>
<th>For depression</th>
<th>For anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>For GI related issues</td>
<td>146 (74.9)</td>
<td>69 (35.4)</td>
<td>92 (47.2)</td>
<td>37 (19.5)</td>
</tr>
<tr>
<td>For pain, over the counter</td>
<td>48 (56.4)</td>
<td>45 (40.0)</td>
<td>30 (27.3)</td>
<td>14 (12.7)</td>
</tr>
<tr>
<td>For pain, prescribed by doctor</td>
<td>&lt;0.001</td>
<td>0.34</td>
<td>&lt;0.001</td>
<td>0.06</td>
</tr>
<tr>
<td>For depression</td>
<td></td>
<td></td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>For anxiety</td>
<td></td>
<td></td>
<td></td>
<td>0.11</td>
</tr>
</tbody>
</table>

## Surgery

<table>
<thead>
<tr>
<th>Cholecystectomy</th>
<th>Appendectomy</th>
<th>Hysterectomy Other</th>
<th>abdominal surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 (19.5)</td>
<td>30 (15.4)</td>
<td>26 (13.3)</td>
<td>41 (21.0)</td>
</tr>
<tr>
<td>12 (10.9)</td>
<td>8 (7.3)</td>
<td>5 (4.5)</td>
<td>12 (10.9)</td>
</tr>
<tr>
<td>0.13</td>
<td>0.06</td>
<td>0.03</td>
<td>0.04</td>
</tr>
</tbody>
</table>

## 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 their bowel symptoms, are more likely to consult doctors about their bowel symptoms. In contrast, IBS consultors and non-consultors do not differ in their abdominal pain severity or extra intestinal symptom burden. [Support: The Rome Foundation].

## Disclosure of Interest

All authors have declared no conflicts of interest.

## References

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 SLC7A8 (LAT2) tended to be lower in IBS patients compared to controls (P = 0.08). 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.

References


M. C. Reicher1, J. Kupcinskas2, M. Krawczyk1, C. Jungs1, B. Appenrodt1, S. N. Weber1, V. Zimmer1, A. Tamelis3, J. J. Lukosiene4, N. Pauziene4, G. Kiudelis5, L. Jonaitis6, C. Schramm7, T. Goessler8, M. Glanemann9, L. Kupcinskas9, F. Lammert1.1

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Introduction: Colonic diverticulitis is one of the most common gastroenterological diseases. Though diverticulitis 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 collagens of the connective tissue in the development of diverticulitis. Genetic polymorphisms COL3A1 (rs1334464, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulitis and 285 controls of Caucasian descent using TaqMan assays.

Results: All genotype distributions did not deviate from the Hardy-Weinberg equilibrium. Overall, rs1334464, rs1800255 and rs1800012 were associated with diverticulitis. 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 rs1334464 remained significantly associated with diverticulitis in men (P = 0.007).

Conclusion: Our study shows that a variant of COL3A1 rs1334464 is associated with risk of developing colonic diverticulosis in Caucasian men, while COL1A1 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.

References

M.C. Reichert1, J. Kupcinskas2, M. Krawczyk1, C. Jungs1, B. Appenrodt1, S. N. Weber1, V. Zimmer1, A. Tamelis3, J. J. Lukosiene4, N. Pauziene4, G. Kiudelis5, L. Jonaitis6, C. Schramm7, T. Goessler8, M. Glanemann9, L. Kupcinskas9, F. Lammert1.1

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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.

Aims & Methods: In this study, we aimed to determine risk factors for complications of colonic diverticulitis in Japan. Two hundred and eighty-two patients with acute diverticulitis who were hospitalized from November 2011 to November 2016 in our hospital were studied. Diagnosis of diverticulitis was based on symptoms, physical examination, blood tests, and results of computed tomography. We retrospectively collected data of medical history, examinations, and therapy. Risk factors associated with complications were analyzed by using logistic regression.

Results: Of the 282 patients, 183 (64.9%) patients had right-sided diverticulitis, and 70 (24%) had complications; perforation (n = 55), fistula (n = 8), abscess (n = 5) and 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 (0.38–1.67) when compared with other locations; ascending colon (10%), transverse colon (1.4%), and descending colon (0%).

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.
P0490 THE USE OF ENDOCOSCPIC CLASSIFICATION “DICA” MAY HAVE A SIGNIFICANT COST-SAVING ON THE BURDEN OF DIVERTICULAR DISEASE OF THE COLON

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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 treatment (or rifaximin, or any other treatment, including probiotics, fibers, systemic antibiotics and spasmylinics) in DICA 1, DICA 2 and DICA 3 population. Analysis of diverticulosis prevalence was estimated according to data population provided by Italian Institute of Statistics (ISTAT). Cost of treatments is evaluated according to data on drugs’ consumption collected during the DICA study.

Results: According to 2015 ISTAT population data, we estimated that >8 million of Italian people >60 years may have diverticulosis. According to our endoscopic assessment that about 75% of diverticular 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, >387 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.

P0491 NATURAL HISTORY OF SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE: A 13-YEAR PROSPECTIVE STUDY

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Introduction: Symptomatic Uncomplicated Diverticular Disease (SUDD) is a clinical entity that, although benign, significantly affects quality of life of patients. Acute diverticulitis may occur in those patients, sometimes needs of surgical treatment, and may cause mortal complications, although not frequent.

Results: All authors have declared no conflicts of interest.

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

P0492 IMPACT OF TREATMENTS ON FECAL MICROBIOTA AND FECAL METABOLIC PROFILE IN SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE OF THE COLON

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Introduction: Fecal microbiota and metabolome may be altered in patients with Symptomatic Uncomplicated Diverticular Disease (SUDD). In particular, we found that Akkermansia muciniphila species was 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/g/day fiber supplementation (3 patients), 1.6 grams/day of mesalazine (3 patients), 900 billion of day of probiotic mixture VSL#3 (currently available in Europe as VivoMix)5, 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 microorganisms. High-resolution proton nuclear magnetic resonance (NMR) spectroscopy associated to Multivariate Analysis with partial least square discriminant analysis (PLS-DA) were applied on the metabolite data set.

Results: The overall bacterial quantity did not differ before and after treatment (p=0.449). 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=0.9). The amount of Lactobacilli group was increased in all groups but not significantly at T1 and T2, while at T3 it became similar to that of T0. All treatments showed the same behaviour and 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.

Conclusion: This preliminary study confirms that Akkermansia muciniphila may play a pathogenetic role in the occurrence of SUDD. We found also that current treatments for SUDD patients are able to influence metabolic activity in those patients except for rifaximin.

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

P0493 5-YEARS ITALIAN REGISTER OF DIVERTICULOSIS AND DIVERTICULAR DISEASE (REMDA): A LOW PROGRESSION RATE INTRODUCTION: FECAL MICROBIOTA AND METABOLIC PROFILE IN SYMPTOMATIC UNCOMPLICATED DIVERTICULAR DISEASE OF THE COLON

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Introduction: Natural history of colonic diverticulosis and diverticular disease (DD) is poorly known, and available data derived mostly from retrospective cohort studies.
Aims & Methods: Aim of this study was to assess, in a cohort of patients with colonic diverticula, the incidence of new cases of symptomatic uncomplicated diverticular disease (SUDD) and diverticulitis, and recurrence of diverticulitis after 1-year of follow-up. GRIMAD (Italian Diverticular Disease Group) promoted the creation of REMAD (Register of Diverticular Disease) a prospective, 5-years, no-profit, cohort study involving 47 Italian centers. Each center enrolled at least 20 consecutive patients during a period of two months. Inclusion criteria were: informed consent; age ≥18 years and endoscopic/radiological-confirmed colonic diverticula. Outpatient/telephone visits were scheduled every 6 months. The clinical data (patients’ characteristics and habits, characteristics of DD, comorbidities and therapies) collected by participating centers were reported on an electronic Case Report Form managed by CD Pharma, Milan. At entry, patients were categorized according to the following criteria: i) diverticulosis (presence of diverticula in the absence of abdominal symptoms); ii) SUDD (recurrent abdominal symptoms as abdominal pain and/or changes in bowel habit, in the absence of overt inflammation); iii) PD (patients who experienced at least one episode of acute diverticulitis in the past). Patients were allowed to continue their therapy for DD, if any. Logistic regression was performed to identify patients’ features associated with new occurrence of SUDD and diverticulitis.

Results: 1217 patients were enrolled. Characteristics of each subgroup of patients are reported in the table.

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**Disclosure of Interest:** R. Cuomo: Speaker and consultant for Alfa Wassermann, G. Barbara: Speaker and consultant for Alfa Wassermann, F. pace: Speaker and consultant for Alfa Wassermann, B. Annibale: Speaker and consultant for Alfa Wassermann, A. Andreozzi: Speaker and consultant for Alfa Wassermann, M. Carabotti: Speaker and consultant for Alfa Wassermann. All other authors have declared no conflicts of interest.

**Introduction:** Patients with symptomatic uncomplicated diverticulosis (SUD) and those with diverticulitis share similar clinical patterns characterized by abdominal pain or change of bowel habits. In clinical practice, differential diagnosis between the two conditions may be useful in the diagnostic approach and therapeutic management.

Aims & Methods: Our aim was to assess the features of abdominal pain in patients with SUD and PD. Patients were categorized according to the following criteria: 1) diverticulosis (presence of diverticula in the absence of abdominal symptoms); 2) SUDD (recurrent abdominal symptoms as abdominal pain and/or changes in bowel habit, in the absence of overt inflammation); 3) PD (patients who experienced at least one episode of acute diverticulitis in the past). Patients were allowed to continue their therapy for DD, if any. T test was used to compare QoL scores. Logistic regression was performed to identify patients’ features associated with the presence of subtypes of DD. A p value <0.05 was considered statistically significant.

**Conclusion:** These data showed that, with respect to diverticulosis, female gender and presence of GI comorbidities are associated with SUD, 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 SUD and PD, suggesting that SUD and PD reduced QoL of the affected patients.

**Disclosure of Interest:** R. Cuomo: Speaker and consultant for Alfa Wassermann, D. Santambrogio: Speaker and consultant for Alfa Wassermann, F. pace: Speaker and consultant for Alfa Wassermann, B. Annibale: Speaker and consultant for Alfa Wassermann. All other authors have declared no conflicts of interest.

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filled in long-lasting pain questionnaire. Abdominal pain lasting <24 h was reported by patients with SUDD (86.3%) and 119/134 with PD (77.3%) (p = 0.026). Symptom severity score was higher in PD group than in SUDD 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 23.7%; p = 0.002), whereas long-lasting pain was more prevalent in patients with SUDD (29.6% vs 20.8%; p = 0.058). Pain lasting > 24 h was more prevalent in PD group compared to SUDD group (62.1% vs 52.6%; p = 0.029). Pain severity was higher in patients with PD and the presence of fever was significantly more often associated with pain in SUDD patients (53.6% vs 23.7%; p < 0.01), whereas more frequently was diffuse in SUDD patients (17.3% vs 71.5%; p < 0.001). Moreover, in patients with PD, pain lasting > 24 h and fever was associated to 2.6 ± 5.9 vs 2.4 ± 0.9 (p = 0.64) inhibition of contraction. VIP-induced relaxation was significantly decreased in PD patients and should be carefully assessed in clinical work-up of diverticular disease.

Intrinsic myogenic alterations are present in colonic asymptomatic diverticulosis and complicated diverticulitis, both in the circular and longitudinal layers characterized by a myogenic pro-inflammatory state and an impaired contractile activity that, in complicated diverticulitis, ended in a muscular synthetic pro-fibrotic switch.

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

P0497 THE ONCOCENIC MIR-491-5P/MIR-875-5P NOTCH3-PHLDB2 AXIS IN GASTRIC TUMORIGENESIS

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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 in GC was achieved from online available dataset. The mRNA and protein expression of NOTCH3 was 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 prediction of miRNAs which potentially target NOTCH3 was performed by www.microRNA.org and TargetScan. The regulation of NOTCH3 by putative miRNAs was confirmed by qRT-PCR, Western blot and dual luciferase activity assay through ectopic overexpression of miR-491-5p and miR-875-5p. The functional downstream targets of NOTCH3 were identified by gene expression microarray.

Results: NOTCH3, but not 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 or miR-875-5p overexpression in AGS cells exerted tumor-suppressive function by inhibiting cell proliferation and inducing apoptosis. More importantly, the expression of miR-491-5p showed negative correlation with NOTCH3 mRNA expression in primary GC samples and over-expression of NOTCH3 rescued the inhibitory effect of miR-491-5p and miR-875-5p. Pleckstrin Homology Like Domain Family B Member 2 (PHLDB2) is identified as the functional downstream target of miR-491-5p and miR-875-5p. PHLDB2 knockdown significantly inhibited cell proliferation and promoted apoptosis, which phenocopies NOTCH3 knockdown or miR-875-5p overexpression. In primary GC samples, the expression of PHLDB2 and NOTCH3 showed positive correlation in The Cancer Genome Atlas (TCGA) cohort. Thus, the miR-491-5p-miR-875-5p-NOTCH3-PHLDB2 oncogenic cascade was constructed.

Conclusion: NOTCH3 is over-expressed and plays an oncogenic role in gastric carcinogenesis through its direct downstream PHLDB2. The activation of NOTCH3 in GC is partly due to the silence of tumor-suppressive miRNAs, miR-491-5p and miR-875-5p. These findings comprehensively revealed the activation of Notch signaling pathway and provided clinical translational potential for GC.

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

P0498 FOXF2 SUPPRESSES WNT SIGNALING PATHWAY IN GASTRIC CARCINOGENESIS THROUGH TRANSCRIPTIONALLY REGULATING E3 LIGASE TRIM28 AND PROMOTING BETACATENIN DEGRADATION

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Introduction: We found that tumor suppressor gene FOXF2 was silenced in gastric cancer (GC) through promoter hypermethylation. Restoration of FOXF2 suppressed GC tumorigenesis through inhibition of canonical Wnt
signaling pathway. However, the molecular mechanism of FOXX2 in GC is still unknown.

**Aims & Methods:** We hypothesize that FOXX2 transcriptional upregulates a novel E3 ligase that targets β-catenin for degradation. We aim to investigate the molecular mechanism of FOXX2 in GC and identify such E3 ligase by PPI Chromatin Immunoprecipitation (ChIP) assay and luciferase assay.

**Results:** FOXX2 significantly decreased both nuclear and cytosolic levels of β-catenin in a dose-dependent manner. The overexpression of FOXX2 suppressed the TOP-flash luciferase reporter and reduced Wnt target gene expression in GC cells.

**Conclusion:** Overexpression of FOXX2 significantly increased luciferase reporter and reduced Wnt target gene expression in GC cells.
**P0502** THE OBESTATIN/G PROTEIN-COUPLED RECEPTOR 39 SYSTEM REGULATES PEPINSIN I SECRETION IN HUMAN STOMACH

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**Introduction:** Obestatin, a 23-amino acid peptide derived from the ghrelin peptide precursor, was originally isolated from human stomach and characterized to bind selectively to the G protein-coupled receptor GPR39. Obestatin is expressed in healthy stomach, 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 pepsinogen secretion in the healthy human stomach.

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

**References**

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**P0503** SERUM EXOSOMAL miRNAs EXPRESSION AS NOVEL BIOMARKERS FOR DETECTION OF ESOPHAGEAL ADENOCARCINOMA

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**Introduction:** Novel biomarkers for diagnosis of esophageal adenocarcinoma (EAC) are 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. 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.

**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.

**References**
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**P0504** COMPARATIVE STUDY BETWEEN THE EFFICACY OF REBAMIPIDE, SUCCRALFATE AND PANTOPRAZOLE IN TREATMENT OF POST-BANDING VARICEAL ULCERS

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**Introduction:** Endoscopic variceal band ligation (EVBL) 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 most empirical with drugs used for peptic ulcer disease. An effective protocol for the prevention of variceal bleeding complications after EVL is desirable.

**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; pan- toprazole group, they received pantoprazole 40 mg/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 to pantoprazole and sucrafate (P < 0.01). 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 no significant effect on post banding ulcer formation. Rebamipide can be used routinely in settings of post-EVL as a good alternative to pantoprazole and sucrafate.

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: 7–12). 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 30.6%, 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 percent for the necessity for endoscopic treatment, 1 points was about 30 percent, 0 point was about 10 percent. 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.

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

References

operative bleeding is still one of the most important adverse side effects. 1, 2

Proton pump inhibitors (PPIs) have been widely used for the treatment of endoscopic submucosal dissection-induced gastric ulcers. However, post-EOBD bleeding compared with EPZ.

Aims & Methods: We compared the incidence of bleeding after gastric ESD between subjects treated with VPZ 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 of two or more sites. 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 perform second-look endoscopy on the day after ESD. A case in which hemostasis was needed with hemorrhage of Forrest Ib or more when we underwent second-look endoscopy was defined as “next-day hemostasis case”. We investigated retrospectively post-ESD bleeding rate and next-day hemostasis rate in the VPZ group and the EPZ group.

Results: Gender, age, resected specimen diameter, oral antiemetic administration, and drainage 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 (p = 0.678) and next-day hemostasis (p = 0.197). However, next-day hemostasis was somewhat higher in the EPZ group than that in the VPZ group. That is possibly because EPZ or VPZ was first administered mostly from the day before ESD in both groups in our hospital, moreover, VPZ rapidly inhibited gastric acid secretion after administration compared with PPIs.

Table: Incidence of post-ESD bleeding and next-day hemostasis

<table>
<thead>
<tr>
<th></th>
<th>VPZ group</th>
<th>Esomeprazole group</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-endoscopic submucosal dissection bleeding compared with EPZ.

Disclose 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: 0.99–3.7, 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 ANTICOAGULANT (NOAC) THERAPY AND COMPARISON TO CONTROLLED APPROVAL STUDIES

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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.

Aim: The current study aimed at including consecutively 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% 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 in the controlled NOAC approval studies that included selected patients (8%-3.6% GIB). In these NOAC studies a lower rate of upper 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


P0514 CLINICAL CHARACTERISTICS OF FUNCTIONAL DIARRHEA DEPENDING ON WHETHER THEY ARE CHEMOSENSITIVE OR NOT

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Introduction: Augmented chemosensitivity to capsaicin has been demonstrated in a proportion of dyspeptic patients, as can be determined by an oral capsaicin capsule test (Hammer et al, JGMS 2008). Sensations induced by gastric capsaicin are distinct from sensations induced by stimulation of mechanoreceptors (Hammer & Vogelsang, JGMS 2007).

Aims & Methods: The aim of the study was to determine clinical characteristics of FD patients with and without chemical hypersensitivity at baseline and after capsaicin ingestion for 4 weeks. N = 49 outpatients with confirmed FD received an oral sensitivity test with 0.75 mg capsaicin at two occasions, before and after ingestion for 4 weeks. Symptomatic responses to capsaicin at the initial test allowed stratification to a capsaicin positive (chemosensitive) and a capsaicin negative (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: 33% 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 (4.1;7.5)) than in capsaicin negative patients (6.6; 4.1 (8.1) (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/~2.0; p < 0.001) in capsaicin positive and ~2.6 (~4.6/~2.0; p < 0.01) than 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 FD, but compared to controls a dysregulation in TGM-1 activity levels throughout our GORD biopsies. This result also correlates with an observed reduction in the expression of ADAM17, a regulator of TGM-1 activity.

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

Reference

P0516 INFLUENCE OF PRUCALOPRIDE ON SECONDARY PERISTALIS IN REFLUX PATIENTS WITH INEFFECTIVE ESPHAGEAL MOTILITY

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Background: Prucalopride, a 5-hydroxytryptamine (5-HT₃) receptor agonist, is useful in the treatment of chronic constipation by improving colon motility. Prucalopride also promotes secondary peristalsis in healthy adults (Clin Transt Gastroenterol. 2016).

Aims & Methods: We aimed to determine whether prucalopride would augment secondary peristalsis in reflux patients with IEM. After a baseline recording of primary peristalsis, secondary peristalsis was stimulated by slow and rapid mid-esophageal injections of air in 15 patients. Two separate sessions with 4 mg oral prucalopride or placebo were randomly performed.

Results: Prucalopride significantly increased primary peristaltic wave amplitude (68.1 ± 10.0 vs. 55.5 ± 8.8 mmHg, p = 0.02). The threshold volume for triggering secondary peristalsis was significantly decreased by prucalopride during slow (9.3 ± 0.8 vs. 12.0 ± 0.8 mL, p = 0.04) and rapid air injection (4.9 ± 0.3 vs. 7.1 ± 0.1 mL, p = 0.01). Secondary peristalsis was triggered more frequently after application of prucalopride (55% [43–70%]) than placebo (45% [33–50%]) (p = 0.008). Prucalopride didn’t change pressure wave amplitudes during slow air injection (84.6 ± 1 vs. 57.4 ± 13.8 mmHg, p=0.19) or pressure wave amplitudes during rapid air injection (84.2 ± 8.6 vs. 69.5 ± 12.9 mmHg; p = 0.09).

Conclusion: Prucalopride enhances mechanosensitivity of secondary peristalsis and promotes motor properties of primary peristalsis in IEM patients. Our study suggests that prucalopride could be a therapeutic option in the management of GERD patients with significant esophageal hypomotility.

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

Reference

P0517 EFFECTS OF PRIOR JEJUNAL FEEDING ON GASTRIC MOTILITY ONCE RECOMMENDED FOR PATIENTS WITH DIABETIC GASTROPARESIS (J4G STUDY): A RANDOMIZED, DOUBLE BLIND CONTROLLED CLINICAL TRIAL

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Introduction: Symptoms compatible with diabetic gastroparesis (DG) affect up to 1 in 5 patients with type I diabetes mellitus. Those affected suffer postprandial

and control biopsies using a targeted assay combined with subsequent IF analy-
sis (66). Compared to controls, prucalopride dysregulated in TGM-1 activity levels throughout our GORD biopsies. This result also correlates with an observed reduction in the expression of ADAM17, a regulator of TGM-1 activity.

Conclusion: The observed increase in nuclear LOR combined with the sporadic cytoplasmic INV localisation, dysregulation of TGM-1 activity and reduced A17 enzyme functions to reinforce barrier function through its ability to crosslink involucrin (INV), revealed sporadic regions of cytoplasmic localisation in multiple GORD biopsies, different from the specific membranous localisation observed in all control samples analysed. The transglutaminase-1 (TGM-1) enzyme functions to reinforce barrier function through its ability to crosslink LOR and INV during terminal differentiation in epithelial tissues at the cellular membrane. Analysis of TGM-1 enzymatic activity was performed in all GORD...
nasea, vomiting, abdominal pain and impaired gastric control. Repeated hospital admissions are common. Endoscopic normality is in most patients. Impaired gastric function is thought to cause the condition. DG does not respond reliably to intensive insulin regimes or prokinetic medications. Jejunal nutrition (JN) is an option in patients that cannot maintain their weight. The benefits are thought to follow improved nutrition and glucose control and glycaemia; however, we have observed that some DG patients eat normally during and after JN (i.e. a quasi-pharma-cological effect). One explanation could be that DG represents a failure of oral nutrition to "switch" the stomach from the fastest to the fed state. According to this hypothesis, nutrients delivered direct to the small bowel triggers the release of peptide hormones that induce normal gastric function.

Aims & Methods: The study tests the hypothesis that JN prior to a test meal improves postprandial symptoms (primary outcome) and gastric function. Diabetic patients with severe symptoms (gastroparesis cardia symptoms 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 1). Symptoms were documented by VAS, gastric function by MRI and the GL-peptide response was monitored over 120 min using published methodology. Bayesian methods 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 ingestion of the NTM than diabetic and healthy controls (p < 0.05). Sensuations were not affected by NG in the controls; however, fullness, bloating and pain were reduced by JN in DG patients (p < 0.05). Compared to water, JN induced a greater GL-peptide response (e.g. PP, GLP-1) and initial liquid GE was slower (gastric content volume after meal: GCSI > 31 ± 13 mL higher, p = 0.019). Subsequent liquid GE was similar in both study conditions (T30 = 3 ± 8 min, p = 0.727). Anticholinergic 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 to 3) beads emptied ≤60 min) and, again, was highest in diabetic controls (3 (1 to 7) beads emptied ≤60 min).

Numerically the GL-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 JN on fullness, 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 identified. Few patients in DG group 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

P0518 PER-ORAL ENDOSCOPIC MYOTOMY IN TREATMENT NAIVE VERSUS PRIOR TREATMENT FAILURE CASES – OUTCOME IN OVER 500 PATIENTS

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Introduction: Per-oral endoscopic myotomy (POEM) has emerged as an efficacious treatment modality for achalasia cardia (AC). Prior treatment (PT) may affect the outcomes of subsequent. The impact of prior treatment on clinical and technical success of POEM is not well known. Small studies with short follow-up indicate that POEM is safe and feasible in PT failure cases. However, there is paucity of large studies with long-term follow-up.

Aims & Methods: In this study we aim to compare the safety and efficacy of POEM in treatment naive (TN) cases versus prior treatment (PT) failure cases.

The data of consecutive patients with AC who underwent POEM at a single tertiary care center from (January 2013 to November 2016) was analysed retrospectively. A comparative analysis was performed between TN and PT failure cases. Technical and clinical success, adverse events (AE), operative time (OT) for POEM were compared between TN versus PT failure cases.

Results: Overall, 502 patients with AC underwent POEM during the study period. 260 patients (51.8%) were TN and 242 (48.2%) patients had PT. Type II AC was the most common subtype in both the groups (TN -63.5% vs PT – 57.8%) followed by type I and type III. There was no significant difference with regards to AC subtypes between the two groups. The distribution of patients according to prior treatment history is as follows – PHD (205), LHM (23), LHM and PBD both (7), botulinum toxin injection (4) and POEM (3). Significantly more patients in the PT group had sigmoid oesophagus (47 vs 18). Mean OT was significantly more in the PT group when compared to the TN group (PT vs TN -74.9 ± 30.6 vs 67.0 ± 27.1 min; P = 0.002). On multivariate analysis- type of AC, dilated esophagus (> 6 cm) and type of knife used were significant predictors of OT. Technical (98.1% vs 97.1%, P > 0.05) and clinical success (94.9% vs 91.9% of POEM were similar in TN and PT cases. Gas related events and mucosotomies were equal in both groups (TN-35.7% vs PT-33.1%; p=0.57). Objective evidence of gastroesophageal reflux was found in 17/53 patients (32.1%) in PT group as compared to 11/44 (25%) in TN group (p=0.50).

Conclusion: POEM is equally efficacious and safe in treatment naive and prior treated cases. POEM should be considered in treatment failure cases.

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

References

P0519 ESOPHAGEAL REFLUX BURDEN IN RELATIONSHIP TO ESOPHAGOGLASTRIC JUNCTION (EGJ) AND ESOPHAGEAL BODY FUNCTION ON HIGH RESOLUTION MANOMETRY (HRM)


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Introduction: Both EGJ and esophageal body motor abnormalities are found on esophageal HRM in reflux disease, and contribute to reflux burden assessed using acid exposure time (AET) on ambulatory reflux monitoring. Mean nocturnal baseline impedance (MBNI) represents a new paradigm that may assess longitudinal esophageal reflux burden, but its precise role in clinical esophagology, particularly in relation to AET, remains unclear.

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Purpose: To compare the MBNI and AET at EGJ and esophageal body level in patients with normal and high reflux burden.

Methods: A total of 135 consecutive patients were prospectively enrolled. The MBNI and AET at EGJ and esophageal body were calculated and compared with the symptom score and AET at the entire esophageal body level. The AET at EGJ and esophageal body were calculated by the number of symptom-related reflux events at each level.

Results: The MBNI at EGJ were statistically higher than esophageal body in patients with high reflux burden (55.8% vs 32.1%, p=0.001). There was no difference at the esophageal body level in patients with normal and high reflux burden. The MBNI at EGJ was also higher than esophageal body in patients with normal reflux burden (51.8% vs 44.6%, p=0.002).

Conclusion: The MBNI at EGJ is a useful parameter to assess the reflux burden at EGJ level. Further studies are needed to confirm these findings.

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

References
Aims & Methods: Our aim was to evaluate the complex interrelationships between disrupted 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 each in Europe and US) for this preliminary report. EGJ morphology was categorized using HRM into hypotensive (EGJ-CI <4 mmHg/cm), hiatus hernia (HH, manometric separation between lower esophageal sphincter and crural diaphragm) and intact EGJ (normotensive EGJ-CI, no HH). Esophageal body 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 EGJ and esophageal body abnormalities were highest (p <0.05) compared to concordant and normal AET/MNBI, and discordant studies. On multivariable regression with categorical (p =0.0001), increasing HH size (p =0.002), lower EGJ-CI (p =0.04), and increasing numbers of ineffective supine 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 supine 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%</th>
<th>AET &lt;4%</th>
<th>MNBI &gt;2292</th>
<th>n=431</th>
<th>n=642</th>
<th>ohms &lt;596</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGJ findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact EGJ (n=280)</td>
<td>25.7%</td>
<td>60.7%**</td>
<td>58.3%</td>
<td>(63/268)</td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ (n=482)</td>
<td>36.5%*</td>
<td>49.2%**</td>
<td>56.3%</td>
<td>(259/460)</td>
<td></td>
</tr>
<tr>
<td>Hiatus hernia (n=422)</td>
<td>49.0%*</td>
<td>36.5%**</td>
<td>69.8%</td>
<td>(138/199)</td>
<td></td>
</tr>
<tr>
<td>Both (n=342)</td>
<td>49.4%*</td>
<td>34.8%**</td>
<td>70.9%</td>
<td>(124/175)</td>
<td></td>
</tr>
<tr>
<td>Esophageal body motor findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact esophageal body (n=696)</td>
<td>31.0%</td>
<td>56.9%**</td>
<td>46.5%</td>
<td>(158/340)</td>
<td></td>
</tr>
<tr>
<td>IEM (n=256)</td>
<td>41.4%*</td>
<td>44.8%</td>
<td>69.6%</td>
<td>(94/135)</td>
<td></td>
</tr>
<tr>
<td>Absent contractility (n=43)</td>
<td>53.5%*</td>
<td>39.5%</td>
<td>88.2%</td>
<td>(15/17)</td>
<td></td>
</tr>
<tr>
<td>Combined EGJ &amp; esophageal body motor findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intact EGJ and body (n=170)</td>
<td>25.3%</td>
<td>61.2%**</td>
<td>49.3%</td>
<td>(36/73)</td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ, IEM (n=105)</td>
<td>56.2%*</td>
<td>24.8%**</td>
<td>83.0%</td>
<td>(44/53)</td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ, HH, absent contractility (n=7)</td>
<td>71.4%*</td>
<td>14.3%</td>
<td>100%*</td>
<td>(5/5)</td>
<td></td>
</tr>
</tbody>
</table>

*p <0.05 compared to intact EGJ and/or esophageal body function **p < 0.05 compared to AET > 6% EGJ: esogastrogastic 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 EGJ and esophageal body metrics adds accuracy to categorization of esophageal reflux burden.

Disclosure of Interest: All authors have declared no conflicts of interest.
achalasia type II. The mean integrated-relaxation pressure (IRP) decreased from 27 (±13) mmHg to 13 (±5) mmHg (p < 0.0001). The presence of 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 <3).

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

P0522 WHAT IS THE EFFECT OF MYOTOMY SITE ON PER-ORAL ENDOSCOPIC MYOTOMY? COMPARISON OF ANTERIOR AND POSTERIOR MYOTOMY
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Introduction: Medical treatments, endoscopic balloon dilatation, Botox and Heller myotomy are treatment modalities for managing achalasia. Recently per oral 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 to 225 achalasia patients at the gastroenterology clinics under general anesthesia.

Demographic features and results of POEM procedures

<table>
<thead>
<tr>
<th>Demographic features and results of POEM procedures</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>58/53</td>
<td>0.639</td>
</tr>
<tr>
<td>Age mean (SD)</td>
<td>41.05 ± 14.89</td>
<td>42.24 ± 13.52</td>
<td>0.905</td>
</tr>
<tr>
<td>(median; range) year</td>
<td>(41.5-12-73)</td>
<td>(41.8-75)</td>
<td></td>
</tr>
<tr>
<td>Prior achalasia treatment, n (yes or No)</td>
<td>48/66</td>
<td>37/65</td>
<td>0.087</td>
</tr>
<tr>
<td>Achalasia sub-type; Unknown I/II/III, n</td>
<td>3/6/94/11</td>
<td>0/17/86/8</td>
<td>0.029</td>
</tr>
<tr>
<td>Tunnel length, mean (SD), cm (median; range)</td>
<td>17.07 ± 2.63</td>
<td>17.32 ± 2.49</td>
<td>0.278</td>
</tr>
<tr>
<td>(17.12-27)</td>
<td>(17.12-25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myotomy length, mean (SD), cm (median; range)</td>
<td>13.79 ± 2.46</td>
<td>14.04 ± 2.44</td>
<td>0.235</td>
</tr>
<tr>
<td>(14.10-25)</td>
<td>(14.8-21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure Time, mean (SD), (median; range) min</td>
<td>58.63 ± 21.47</td>
<td>46.58 ± 13.49</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(53; 27-153)</td>
<td>(44; 26-107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel time, mean (SD), min (median; range)</td>
<td>34.60 ± 14.67</td>
<td>27.02 ± 9.74</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(30; 12-82)</td>
<td>(25; 10-68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myotomy time, mean (SD), min (median; range)</td>
<td>12.11 ± 6.67</td>
<td>10.08 ± 2.89</td>
<td>0.012</td>
</tr>
<tr>
<td>(10; 4-40)</td>
<td>(9; 3-30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysphagia Score preoperative/postoperative (median; range)</td>
<td>(3.3-4.0)/(0.0-2)</td>
<td>(3.3-4.0)/(0.0-1)</td>
<td></td>
</tr>
<tr>
<td>Eckardt Score, preoperative/postoperative (median; range)</td>
<td>(6.6-12)/(0.0-2)</td>
<td>(8.5-12)/(0.0-2)</td>
<td></td>
</tr>
<tr>
<td>38 3</td>
<td>33 0</td>
<td>0.176</td>
<td></td>
</tr>
</tbody>
</table>

Continuous

Demographic features and results of POEM procedures

<table>
<thead>
<tr>
<th>Adverse events, n</th>
<th>Group Anterior N = 114</th>
<th>Group Posterior N = 111</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Capnoperistoneum -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mucosal injury</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Eckardt scores were significantly low in all patients (p < 0.0001). Demographic features and data of the procedures are shown in the table below. Mucosal damage during the procedure occurred in 3 patients and capnoperistoneum developed in 71 patients. All complications were treated endoscopically. Controls at 3rd month was performed to 151 patients among which revealed esophasitis 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.

References
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Introduction: 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
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-alcoholic 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 pHimpedance 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/min, 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 punitation 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 register. 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 intervention weeks 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>CONTROL VISIT (MEAN)</th>
<th>INTERVENTION VISIT (MEAN)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBSTUDY 1 (Regular beer)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min 5- Min 0</td>
<td>–0.1 (0.73 (–2–1))</td>
<td>0</td>
<td>0.65</td>
</tr>
<tr>
<td>Min 10- Min 0</td>
<td>–0.1 (0.73 (–2–1))</td>
<td>2 (0.42 (1–0))</td>
<td>0.18</td>
</tr>
<tr>
<td>Min 15- Min 0</td>
<td>0.2 (0.63 (0–2))</td>
<td>4 (0.51 (1–0))</td>
<td>0.317</td>
</tr>
<tr>
<td>Min 20- Min 0</td>
<td>0.5 (0.97 (0–3))</td>
<td>8 (0.63 (2–0))</td>
<td>0.18</td>
</tr>
<tr>
<td>Min 25- Min 0</td>
<td>1.1 (1.9 (1–3))</td>
<td>1.2 (0.78 (0–2))</td>
<td>0.655</td>
</tr>
<tr>
<td>Min 30- Min 0</td>
<td>1.3 (1.41 (0–4))</td>
<td>1.3 (0.82 (0–2))</td>
<td>1.25</td>
</tr>
<tr>
<td>Min 33- Min 0</td>
<td>1.2 (1.31 (0–4))</td>
<td>1.5 (0.83 (0–3))</td>
<td>0.18</td>
</tr>
</tbody>
</table>

| SUBSTUDY 2 (Non alcohol beer)           |                      |                          |         |
| Min 5- Min 0                           | 0 (0.3 (0–1))        | 1 (0.3 (0–1))            | 0.157   |
| Min 10- Min 0                          | 0.3 (0.47 (0–1))     | 0.5 (0.6 (0–2))          | 0.132   |
| Min 15- Min 0                          | 0.65 (0.67 (0–2))    | 0.8 (0.76 (0–2))         | 0.454   |
| Min 20- Min 0                          | 1.15 (0.93 (0–3))    | 1.30 (0.98 (0–4))        | 0.521   |
| Min 25- Min 0                          | 1.75 (1.12 (0–4))    | 1.85 (1.26 (0–4))        | 0.685   |
| Min 30- Min 0                          | 2.15 (1.06 (0–4))    | 2.3 (1.45 (0–5))         | 0.38    |
| Min 33- Min 0                          | 2.57 (2.11 (0–5))    | 2.8 (2.14 (0–5))         | 0.131   |

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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 1, 2. Recently, duodenal eosinophilia has been described both in adult and pediatric patients with FD 3–5. Because of the significant symptomatic overlap between FD and rumination syndrome we hypothesized that histological changes similar to those described in FD might exist 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 and/or lactating females were excluded. Duodenal biopsies obtained were routinely processed to formalin fixed paraffin-embedded tissue blocks which were cut at 3μm, 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 from the second part (D1 vs D2) and 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 80% were female. The mean eosinophil counts/biopsy fragment (+/− Brunner’s glands (BG), showed no difference in counts in the sections +/− BG (D1 vs D2), p=0.8. No overt pathology was noted, but IEL counts were significantly higher in rumination patients (mean 15, range 8–29, and 2 cases had lymphocytic duodenosis) vs controls (mean 11, range 11–18), p=0.02. Compared to controls, there was a significant increase in the mean eosinophil count among the patients with rumination syndrome rumination, 26 pm2 (range 16–42), vs 18 mm2 (range 10–28), p=0.006.

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 compared to controls have not previously been described. Therefore, a potential role of duodenal immune mechanisms in the pathophysiology of rumination syndrome warrants further enquiry.

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

References


Results:
A total of 101 gastroparesis patients (71% female, 20-86yrs, mean 55yrs) were prospectively enrolled. Abnormal gastric emptying was defined as a gastric emptying time of greater than 50% of previous meal at 180 minutes. Delay in gastric emptying was significantly associated with a decrease in quality of life (p < 0.01) and an increase in healthcare utilization (p < 0.001). The presence of gastroparesis was significantly associated with lower levels of sleep (p < 0.001), lower levels of physical activity (p < 0.001) and lower levels of exercise (p < 0.001). The presence of gastroparesis was also significantly associated with lower levels of social activity (p < 0.001) and lower levels of work and school activity (p < 0.001).

Conclusion: This is the first study to examine the relationship between gastroparesis and sleep, physical activity, exercise, social activity, work and school activity. These findings suggest that gastroparesis is associated with a decrease in quality of life and an increase in healthcare utilization.

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

References:
**Table 1 Continued**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Factor</th>
<th>Odds ratio</th>
<th>95% Confidence interval</th>
<th>R² value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heartburn</td>
<td>PHQ12</td>
<td>1.074</td>
<td>1.035–1.114</td>
<td>0.315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medication for acid/heartburn</td>
<td>11.427</td>
<td>8.602–15.179</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gastroduodenal disorder</td>
<td>2.789</td>
<td>2.049–3.798</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bowel disorder</td>
<td>2.165</td>
<td>1.632–2.872</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diet rich in pasta</td>
<td>1.113</td>
<td>1.026–1.206</td>
<td></td>
</tr>
<tr>
<td>Dysphagia</td>
<td>Age</td>
<td>0.990</td>
<td>0.980–1.000</td>
<td>0.242</td>
</tr>
<tr>
<td></td>
<td>Medication for diarrhea</td>
<td>1.882</td>
<td>1.100–3.221</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medication for acid/heartburn</td>
<td>1.456</td>
<td>1.007–2.106</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gastroduodenal disorder</td>
<td>4.368</td>
<td>3.146–6.065</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anorectal disorder</td>
<td>1.585</td>
<td>1.072–2.343</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diet rich in rice</td>
<td>1.097</td>
<td>1.006–1.196</td>
<td></td>
</tr>
<tr>
<td>PHQ12</td>
<td></td>
<td>1.110</td>
<td>0.969–1.154</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).

**Aims & Methods:**

Data from an online survey of 6300 individuals aged ≥18 years in the United States, United Kingdom and Canada (2100 in each country) including the Rome IV diagnostic questionnaire for adults and demographic questions was used. Quota-based sampling ensured equal proportions of sex, age groups, and educational distributions across countries. Prevalence and frequency of esophageal symptoms in the past 3 months and putative functional esophageal disorders were retrieved from the Rome IV questionnaire. Symptoms were considered present if they occurred at least weekly for dysphagia, chest pain, and globus, and at least twice weekly for heartburn. Variables with a p ≤ 0.1 in univariate analyses were entered into a multivariate analysis (logistic regression) to identify factors independently related to esophageal symptoms. As endoscopy and pH measurement are parts of the clinical diagnosis of esophageal disorders in the Rome IV criteria, we only describe esophageal symptoms compatible with functional esophageal disorders. Somatization was assessed with the Patient Health Questionnaire (PHQ)-12.

**Results:**

Data from 5177 participants (47.8% female; mean age 46.7 years; 1645 US, 1734 UK, 1798 Canada) were retained for analysis after 369 inconsistent responders and 754 previously diagnosed with gastroesophageal reflux disease (GERD). Exclusion criteria for functional disorders were age <18, GERD, and presence of other FGIDs, using medications for gastrointestinal symptoms, somatization, cannabis use, and certain foods (see table 1). When individuals with GERD were included in re-analyses, GERD was a significant predictor for chest pain and heartburn (OR 1.939 and 1.525), but not globus and dysphagia. The prevalence of symptom constellations consistent with Rome IV esophageal diagnoses was 1% for globus, 3.2% for functional dysphagia, 0.7% for reflux hypersensitivity, 0.8% for functional chest pain, and 5.2% for functional heartburn. There was a significant difference in symptoms consistent with any functional esophageal disorder between USA 7.0%, UK 1.1% and Canada 1% for functional heartburn. There was a significant difference in symptoms consistent with Rome IV esophageal diagnoses was 1% for globus, 3.2% for functional dysphagia, 0.7% for reflux hypersensitivity, 0.8% for functional chest pain, and 5.2% for functional heartburn. There was a significant difference in symptoms consistent with any functional esophageal disorder between USA 7.0%, UK 1.1% and Canada 1% for functional heartburn. There was a significant difference in symptoms consistent with any functional esophageal disorder between USA 7.0%, UK 1.1% and Canada 1% for functional heartburn.
Several studies have provided information on the prevalence of different atopic conditions in adult EoE patients compared to control groups of 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 varied and the selection bias 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. We therefore performed 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 population.

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 by two (AA and AJL) of the authors. A third author (AM) independently extracted 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 2945 references identified, data was collected from 21 studies including a total of 53,542 EoE patients and 54,759 controls. The criteria for defining a diagnosis of atopy in either EoE patients or controls was 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 eosinophilic esophagitis (EoE) patients, and healthy controls, 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 being part of a diagnosis 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 in EoE patients compared to control subjects (OR 5.5 [95% CI: 3.27, 9.53; I2 = 67.9%]) as were 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%), Food allergies and other atopic conditions were also assessed. No significant publication bias was found in 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, 0.78, 1.24).

Conclusion: The present study shows that an accurate diagnosis of asthma 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. Furthermore, we identified a need for more standardized information on indices related to asthma and eczema in the general population and use standard definitions of allergic rhinitis, asthma (including its severity and level of control), skin allergy, and food allergy (rather than mere sensitization) when assessing and documenting concurrent allergic diseases in EoE patients. This would help in defining a diagnosis of atopy in EoE patients and control subjects and assessing the prevalence of allergic conditions in both populations without EoE. These two limitations have hampered researchers in their efforts to clearly assess the magnitude of the association between atopy and EoE. We therefore performed 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 population.

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 Mean (CV%)</th>
<th>AM Fed Geometric Mean (CV%)</th>
<th>AM Fasted Geometric 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>10.00 (2.00-30.00)</td>
<td>5.00 (1.00-10.00)</td>
<td>14.00 (2.00-20.00)</td>
</tr>
<tr>
<td>AUIC0-24 (pg/mL)</td>
<td>366.607 (115.8)</td>
<td>361.277 (105.5)</td>
<td>359.141 (100.5)</td>
</tr>
<tr>
<td>AUIC0-t (pg/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.
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.

Table Continued

<table>
<thead>
<tr>
<th>Eosinophils</th>
<th>Esomeprazole Group (n = 8)</th>
<th>Rabeprazole Group (n = 9)</th>
<th>Pantoprazole Group (n = 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>After-Therapy</td>
<td>Baseline</td>
<td>After-Therapy</td>
<td>Baseline</td>
</tr>
</tbody>
</table>

Histologic Features, n or %

| Median maximum eos count* | 75 | 6 | 87 | 5 | 95 | 6 |
| Median eos count (of 50 HPFs)* | 4 | 68 | 3 | 62 | 5 |
| Degranulation present | 88% | 13% | 100% | 11% | 90% | 18% |
| Microabcesses present | 63% | 13% | 55% | 11% | 48% | 9% |
| Basal layer present | 100% | 26% | 100% | 22% | 100% | 18% |
| Spongiosis present | 88% | 26% | 88% | 11% | 90% | 18% |
| Subepithelial tissue present | 75% | 13% | 55% | 11% | 81% | 9% |
| Lamina propria fibrosis present | 0% | 0% | 0% | 0% | 0% | 0% |

Eos = eosinophils *Calculated for an HPF area = 0.24 mm²

Conclusion: Esomeprazole, rabeprazole and pantoprazole administered at double daily dose were equally effective in determining endoscopic and histologic remission in patients with PPI-REE. These data, although obtained in a small sample of patients, suggest that the pharmacokinetic and pharmacodynamic differences among these drugs do not affect their effect on PPI-REE patients.

Disclosure of Interest: V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD All other authors have declared no conflicts of interest.

Table: Endoscopic and histologic features at baseline and after PPI therapy in PPI-REE

<table>
<thead>
<tr>
<th>Endoscopic Features</th>
<th>Esomeprazole Group (n = 8)</th>
<th>Rabeprazole Group (n = 9)</th>
<th>Pantoprazole Group (n = 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>After-Therapy</td>
<td>Baseline</td>
<td>After-Therapy</td>
<td>Baseline</td>
</tr>
<tr>
<td>Rings</td>
<td>75%</td>
<td>26%</td>
<td>67%</td>
</tr>
<tr>
<td>Linear furrows</td>
<td>62%</td>
<td>13%</td>
<td>55%</td>
</tr>
<tr>
<td>Whitish exudates</td>
<td>50%</td>
<td>13%</td>
<td>44%</td>
</tr>
<tr>
<td>Edema</td>
<td>26%</td>
<td>13%</td>
<td>33%</td>
</tr>
<tr>
<td>Crepe paper</td>
<td>13%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Strictures</td>
<td>13%</td>
<td>13%</td>
<td>22%</td>
</tr>
<tr>
<td>Mean EREFS Score</td>
<td>7.3</td>
<td>1.2</td>
<td>8.1</td>
</tr>
</tbody>
</table>

(continued)
P0538 SYMPTOM PATTERNS AND TYPES OF GASTROESOPHAGEAL REFLUXES SIGNIFICANTLY DIFFER IN GROUPS OF EROSI V ESOPHAGITIS AND NON-EROSSIVE FORM OF GASTROESOPHAGEAL REFLUX DISEASE (GERD) PATIENTS

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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 (Ohmega, MMS, The Netherlands; 2×6-h impedance channels catheters, UnisensorAG, USA) and validated GERD-Q questionnaire. According to baseline esophagitis 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 gastroesophageal refluxes didn’t differ between ERD and NERD groups of patients.

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.

Table 1: Results of the study

<table>
<thead>
<tr>
<th></th>
<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>
<td>0.729</td>
</tr>
<tr>
<td>Number of acid refluxes/day, n</td>
<td>6 ± 1.0</td>
<td>27 ± 2.2*</td>
<td>33 ± 3.7*</td>
<td>0.040</td>
</tr>
<tr>
<td>Number of weak acid refluxes/day, n</td>
<td>7 ± 0.93</td>
<td>22 ± 2.1*</td>
<td>15 ± 2.3*</td>
<td>0.038</td>
</tr>
<tr>
<td>Number of high gastroesophageal refluxes/day, n</td>
<td>2 ± 0.47</td>
<td>15 ± 1.4*</td>
<td>12 ± 2.2*</td>
<td>0.347</td>
</tr>
<tr>
<td>DeMeester score</td>
<td>3.16 ± 1.75</td>
<td>13.3 ± 2.0*</td>
<td>26.92 ± 6.2*</td>
<td>0.0001</td>
</tr>
<tr>
<td>GERD-Q score</td>
<td>5 ± 0.31†</td>
<td>10 ± 0.24*</td>
<td>13.1 ± 0.27*</td>
<td>0.0001</td>
</tr>
<tr>
<td>Extraesophageal symptoms</td>
<td>0</td>
<td>61.5*</td>
<td>31.3*</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

P0540 ASSESSMENT OF EXHALED BREATH CONDENSATE FOR NON-INVASIVE DIAGNOSIS OF GASTROESOPHAGEAL REFLUX DISEASE IN CORRELATION WITH MII-PH AND PEPTEST

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2Department Of Pulmonary Diseases And Tuberculosis, FN Brno, Brno/Czech Republic
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Introduction: Gastroesophageal reflux disease (GERD) is a disease caused by backflow of gastric contents into the esophagus due to the failure of physiological anatomical mechanisms and the presence of extraesophageal symptoms. Exhaled breath condensate (EBC) and saliva are two easily obtainable samples that could be used in monitoring of patients suffering from gastroesophageal reflux disease. 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 acid reflux (pH < 4), weakly acid reflux (pH 4–7) and healthy controls.

Aims & Methods: A portable EBC sampler was used for collection of EBC. 10 mL sample aliquots of EBC were analyzed. For pH measurement, the CO2 from EBC was washed out with Na2CO3 gas for 10 min. A pH value with CO2 washed out was used with a pH microelectrode and total ionic profile (ammonium, cations, organic acids - NH4+, K+, Ca2+, Na+, Mg2+, Cl-, CO3–, NO3–, SO42–, 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 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 Na2CO3) 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 weakly 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 3.31 µM) compared to healthy subjects (mean BA 0.69 µM).

Further statistically significant differences were found in chloride (Cl–), nitrite (NO2–) and sodium (Na+) ions concentration. BA was elevated (p < 0.01) in group with acid reflux vs. healthy controls and NO2– and Na+ were elevated (p < 0.01) in weakly acid reflux group vs. healthy controls. The data of examined parameters showed no statistically significant differences within the groups. In the groups of patients with acid reflux, the incidence of high pepsin concentration (above 75ng/ml) was found only in 50% of the patients.

Conclusion: We found statistically significant difference 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

P0539 LARYNGEAL DISORDERS AND CHRONIC COUGH IN ADULTS WITH AND WITHOUT EROUSIVE ESOPHAGITIS: A CASE-CONTROL STUDY IN ALBANIA

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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 108 patients with erosive esophagitis (aged 46.6 ± 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 were also collected. Binary logistic regression was conducted 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, sedentariness 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 socio-demographic 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 independently related to 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.

Table 1: Results of the study
potentially reduce the diagnostic cost and avoid unnecessary invasive MII-pH testing in future. Unlike the EBC, pepstein analysis using Pepstest did not provide any significant value.

Disclosure of Interest: This work was supported by Ministry of Health of the Czech Republic, grant nr. 17-31945A. All rights reserved.

P0541 GASTRIN 17 MEASUREMENTS IN SINGING OUT PATIENTS WITH DIFFERENT PATTERNS OF REFLUX: A PILOT STUDY USING IMPEDANCE-PH AS REFERENCE STANDARD

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Introduction: Impedance-pH testing is actually considered the gold standard diagnostic tool for reflux assessment. In fact, it allows to characterize any type of gastro-esophageal reflux (GER), namely acid and non-acid, and therefore permits – in presence of typical reflux symptoms – to diagnose functional heartburn (FH) based on the lack of abnormal acidic or non-acidic refluxate (i.e. normal number of reflux episodes and negative reflux-symptom association). Gastrin-17 (G17) has been proposed as a non-invasive marker of GERD, due to the negative feedback between acidic output and this hormone. Indeed, preliminary data showed that intermediate values of G17, between very low to normal levels, may identify patients with abnormal non-acid reflux.

Aims & Methods: We aimed to correlate various patterns of refluxate (i.e. predominant acidic refluxate, predominant non-acidic refluxate and no reflux at all), as assessed by impedance-pH, with different levels of G17 in endoscopy-negative subjects with heartburn. Thirty-five consecutive patients (19F/16M, mean age 47 years, range 31–56 years), all reporting heartburn since 6 months with at least 3 episodes/week, entered the study. All patients underwent upper endoscopy and medication – in presence of typical reflux symptoms – to diagnose functional heartburn (FH), suggesting its use as surrogate marker of NERD or non-acid reflux disease, without the need of performing invasive tests.

Disclosure of Interest: E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

P0542 ANTI REFLUX MUCOSECTOMY (ARMS) FOR REFRACTORY GASTRO ESOPHAGEAL REFLUX DISEASE (GERD) - ARE WE THERE YET?

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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. Linx procedure, Stretta have 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 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. Patients with significant reflux of relux had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probes (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 (EJG) 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 reduction in the DeMeester score, with predominant decrease in the reflux acid exposure. 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 HRA 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 cardio opening, while preserving and/or 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

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of the EGI is shortened with scar formation, and greater curve of EGI (his site) is not restored and therefore retains postprandial acidity as a mucosal flap valve. The quantity of mucosa to be resected to induce appropriate (“not too tight and not too loose”) scar formation is a key issue in this procedure. Total circumferential resection causes strictureing as demonstrated in previous studies, while subtotal dissection, which we have termed crescentic, produces better results in this regard, while still resulting in symptom control. Mucosal flap valve grading is not only a good predictor of reflux in these patients but also is a prognostic marker of effectiveness of ARMs, i.e. higher the grade worse the outcome. Thus, the extent and pattern of mucosal resection (17 vs. ESD) according to the mucosal flap valve grading may be a better predictor of outcome than a box standard procedure. This technique has a potential role in people with oesophageal dysmotility wherein Nissen’s fundoplication is relatively contraindicated.

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

Reference

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
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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, bone mineral density (BMD), true fractional calcium absorption (TFCA), and serum and urine mineral levels in healthy postmenopausal women taking PPIs or placebo for 26 weeks.

Aims & Methods: Postmenopausal women aged 45–75 were randomised to daily oral 60-mg dexlansoprazole (DEX), 40-mg esomeprazole (ESO), or PBO for 26 wks with follow-up at wk 52. Primary endpoints were 26-wk % change vs placebo in procollegen type 1 terminal propeptide (PINP) and C-terminal telopeptide of type 1 collagen (CTX). Additional endpoints included changes in BMD (26 and 52 wks) and serum and urine mineral levels (26 wks). Fractures between baseline and wk 26 were recorded as adverse events. TFCO (0 and 26 wks) was measured in a subset (n = 34) of patients.

Results: Excluding 1 disqualified site, 115 women were randomised and 93 completed the study. There were no substantial differences in age, BMI, baseline serum calcium, or vitamin D levels between groups. The bone turnover markers PINP and CTX were within normal range during 26 wks of PPI therapy. Within each group, there was no statistically significant 26-wk change in bone turnover, except a small increase in CTX levels with DEX (0.12 ng/mL, 95% CI 0.03–0.23). The 26-wk median % increases in PINP from baseline vs PBO (difference in median % change [95% CI] = 19% (7%–30%) for DEX and 18% (7%–30%) for ESO. CTX levels increased vs PBO by 27% (13%–43%) for DEX and 22% (8%–36%) for ESO. PPI effects on BMD, serum and urine mineral levels, and parathyroid hormone were not statistically different vs PBO. Median % change from baseline in TFCO vs PBO was not statistically significant for DEX, but was significant for ESO (6%, 95% CI 2%–11%).

No spontaneous fractures occurred during treatment; 1 traumatic foot fracture (DEX) and 1 humerus fracture (circumstance unknown; ESO) occurred during follow-up.

Conclusion: 26 wks of DEX or ESO therapy increased bone turnover markers, but did not reduce BMD, TFCO, or serum or urine mineral levels. ESO increased TFCO by <1%. Although bone turnover markers increased with PPI therapy, levels remained within the normal ranges. No clear explanation for an association between PPI therapy and fracture risk was found in this study.

Disclosure of Interest: K.E. Hansen: Takeda paid me for my work as a consultant in the design of the study, and for my work in conducting the study at my medical center. D.C. Metz: Takeda - access to writing and data analysis for the purposes of this protocol
M.C. Perez: Employee of Takeda Pharmaceuticals

All other authors have declared no conflicts of interest.

Trial Registration: This study has the ClinicalTrials.gov identifier NCT01216293.

P0544 ALGINATE EFFECT ON POSTPRANDIAL REFLUXES AND PH OF STOMACH CONTENT: RESULTS OF PH-IMPEDANCE MONITORING COMBINED WITH STOMACH PH MONITORING IN REFLUX PATIENTS
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Introduction: pH-impedance reflux monitoring inhibit gastroesophageal reflux; however, remains unexplored effect of alginates on postprandial processes in the stomach.

Aims & Methods: 25 patients (14 F, age 23–69) with typical GERD symptoms, participated in this study. All patients underwent a 3-hour combined gastroesophageal pH-impedance monitoring with standardized breakfast (muffin and coffee). To determine the effect of alginates on postprandial reflux and pH in the esophagus and stomach, all patients underwent a repeat of similar monitoring the next day. On this day, they took alginate after breakfast. The difference in pH in 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 raft-forming alginate on the severity of postprandial reflux in patients with GERD and for the postprandial stomach content.

Results: Monitoring with alginate showed significantly (P < 0.05) less number of acid [average values 5.42 ± 0.69 (M ± s) 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 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 (P < 0.05), 4.08 ± 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 significant (P < 0.05) higher values for the first 60 minutes after intake of alginate [pH 4.3 ± 0.37 vs. 3.04 ± 0.25], during 60-90 min, 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 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 raft-forming alginate 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 alginate 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 of the lower esophageal sphincter, but not the neutralization of stomach acid, unlike nonraft-forming antacids and PPIs.

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

P0545 EFFICACY OF S-PANTOPRAZOLE 10 MG IN THE SYMPTOM CONTROL OF NON-EROSESIVE REFUX DISEASE: A PHASE III PLACEBO-CONTROLLED TRIAL
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Introduction: S-isomer (S) pantoprazole is more bioavailable and less dependent ever, remains unexplored effect of alginates on postprandial processes in the stomach.

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 either 10mg 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.

Methods: Eighty-eight: patients randomly assigned into the pantoprazole group (25 males, 43.7 years old) and 86 to the placebo group (32 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 (33% vs. 14%, P < 0.001). In both groups, symptoms of heartburn, acid regurgitation and epigastric discomfort were 0.66, 1.82, and 0.57. 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.
Despite PPI therapy.

Conclusion: A tailored approach to refractory NERD, guided by MII-pH monitoring. Subjects were subgrouped into 3 categories according to Zerbib's classification: i) Acid reflux (presence of 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 symptom 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 symptoms. Responders were defined by VAS improvement of at least 10%. 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 selected by binomial 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 20:14, mean age 47.4 ± 12.8). Twelve had acid reflux, 7 non acid reflux and 15 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 = 0.31). At univariate analysis, therapy failure directly correlated with dysphagia (OR = 0.15, p = 0.10) and intensity with sensation of slow digestion (OR = 7.70, 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 (25.7 ± 23.5) p = 0.15.

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

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: Organoid cultures are widely used because they mimic in vitro differentiation of self-organizing stem cells and represent the perfect model to study stem cell interaction in basic and translational research. We developed an in vitro organoid model of human BE to investigate the potential to modulate the metaplastic process using an innovative anti-BMP2/4 llama-derived Dwarfbody (DB). Endoscopic BE biopsies were implanted into immunocompromised mice intramuscularly and grown for a period of three months with DB or control serum. These structures were assessed histologically and immunohistochemically (IHC) using panels of squamous, intestinal and stem cell markers.

Results: Biopsies from patients with Barrett’s esophagus formed a columnar epithelial layer containing goblet cells and recapitulated the crypt and villous regions seen within BE glands. IHC validation confirmed that the xenograft structures were of human origin and expressed markers of intestinal differentiation (CKS, CDX2 and villin). In contrast to patients with the BMP inhibitor lead to the formation of multi-layered squamous epithelium expressing both the stem cell maker p63 and the squamous marker CK5.

Conclusion: Preliminary results demonstrate that inhibition of BMP2/4 in vivo leads to inhibition of squamous epithelium. These preliminary results may be translated to the clinical setting in order to improve treatment of BE and as such prevent the development of esophageal adenocarcinoma.

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

References


P0550 GASTRIC CARDIA GLANDS MANIFEST APPARENT BROAD DIFFERENTIATION POTENTIAL, AS EVIDENCED BY HOXA13 EXPRESSION, IMPLICATIONS FOR THE ORIGIN OF BARRETT’S ESOPHAGUS

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Introduction: Metaplastic phenomena in the upper gastrointestinal tract are still poorly understood. A prominent theory is that Barrett’s esophagus originates from metaplastic glandular epithelium. However, in absence of evidence that the gastric stem cell has broad differentiation potential, this theory remains controversial. The gastroesophageal junction is a high prevalence area for metaplasia and subsequent cancer. Characteristic of this area are the gastric cardia glands which feature only the most proximal part of the anatomic gastric cardia. Recent evidence from human and mouse studies has shown Barrett’s esophagus can originate from these gastric cardia glands. 1-3 If it can be shown that gastric cardia glands contain elements associated with positional misspecification, this theory could be substantially bolstered. Hox genes are a family of transcription factors that convey positional information. The 3’ to 5’ sequence of Hox genes corresponds to the sequence in which they act along the anterior to posterior axes of the gut. This property is termed colinearity and links clustering to function. In gastrointestinal physiology, HOXA13 is a 5’ member of the HOX4 cluster, has an expression pattern restricted to the colonic epithelium. However, pathological metaplastic lesions of the esophagus and stomach are also characterized by Hoxa13 expression. This in parallel with the similarities of these lesions with physiological gastric morphology. Hence, investigating Hoxa13 expression in gastric cardia glands appears a rational strategy in assessing the potential of this gastric cardia epithelium to serve as the origin of Barrett’s esophagus.

Aims & Methods: We aimed to determine Hoxa13 expression in physiological gastric cardia glands. Firstly, strips of tissue from surgical specimens containing squamous esophageal epithelium, gastric cardia glands, and oxyntic stomach glands, were collected. These were continuous strips, from proximal to distal, to preserve morphological information. Material from three patients was selected, they suffered from either a neuroendocrine tumor, or decompensated achalasia, or an adenocarcinoma. Antibodies against Hoxa13 were found not to be specific. Therefore, RNA in situ hybridization by RNA-scope was performed to visualize Hoxa13 RNA. Secondly, a Hoxa13 GFP x C57BL/6J heterozygous mutant mouse model was used. In these animals, the cardiac glands were analyzed directly for GFP expression using a fluorescence confocal microscope.

Results: All three patients showed Hoxa13 expression of a portion of gastric cardia epithelial cells. The squamous epithelium, the oxyntic epithelium, and the cardiac glands did not show any signal. The signal is located relatively close to the base of the crypts of the cardiac glands. The Hoxa13 GFP x C57BL/6J heterozygous mice showed GFP expression localized to the nucleus of some of the epithelial cells of the cardiac gland. No nuclear signal was detected in the squamous or oxyntic epithelium. The colonic epithelium of the mouse showed nuclear GFP signal. Rectal squamous epithelium was negative as well as ileal epithelium, in accordance with Hoxa13 colinearity in mouse and human. A littermate negative for Hoxa13 showed no signal in either the gastric cardia glands or in metaplastic ileum. 

Conclusion: Gastric cardia gland epithelial cells in both human and mouse exhibit Hoxa13 expression. All other physiological upper gastrointestinal tract tissues are Hoxa13 negative in line with Hox gene colinearity in the gut. This dichotomy proves positional information in these glands is discordant with their actual location. These findings suggest that gastric cardia glands have a broad differential potential. This is consistent with an origin of Barrett’s metaplasia in the gastric cardia and might be indicative of Barrett’s not being a true transdifferentiation.

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

References

References

P0552 CHARACTERIZING Dipeptidyl Peptidase Specific Activity in Human Barrett’s Oesophagus and in a Panel of Oesophageal Metaplasia, Dysplasia and Cancer Cell Lines
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Introduction: Barrett’s oesophagus is defined as the replacement of the normal stratified oesophageal squamous epithelium with a multilayered columnar intestinal-like epithelium. Dipeptidyl peptidase-4 (DPP4) is an integral membrane glycoprotein that is highly expressed on the small intestinal brush border. 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 oesophagus patient biopsies. FLO-1, OE33 and JH-EsoAd1 (oesophageal adenocarcinoma), OE21 and TE7 (oesophageal squamous cell carcinoma), GihTERT, GoHTERT, ChTERT (dysplastic Barrett’s) and QhTERT (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 Flinders Medical Centre screening endoscopy program (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 inhibitor) and IL-17A

Results: Relatively high DPP activity was detected on the membrane of OE33 (13.92 mm pNA/min/mg protein), GihTERT (6.93 mm pNA/min/mg protein), GoHTERT (2.65 mm pNA/min/mg protein) and QhTERT (1.80 mm pNA/min/mg protein) compared to all other cell lines, where activity was <1 mm pNA/min/mg protein of 1 mM sitagliptin inhibited enzyme activity in OE33 cells, indicating that membrane enzyme activity was specific to DPP4. Cytoplastic DPP activity was highest in FLO-1 (3.77 mm pNA/min/mg protein) and ChTERT (2.39 mm pNA/min/mg protein). Addition of 1 mM sitagliptin did not reduce cytoplastic DPP activity in FLO-1 cells, suggesting the presence of other peptides. High DPP4 activity was detected in the membrane fraction of duodenal biopsies (45.90 ± 8.55 mm pNA/min/mg protein) compared to gastric (3.35 ± 1.59 mm pNA/min/mg protein) and oesophageal biopsies (0.65 ± 0.71 mm pNA/min/mg protein). In contrast, differential DPP activity was detected in the soluble fraction of all duodenal, gastric and oesophageal tissue biopsies. Using 1μM sitagliptin, this was found to be specific to DPP4 in oesophageal samples, but likely derived from other peptides in gastric and duodenum associated with the gut.

Conclusion: Our preliminary in vitro findings suggest a differential pattern of DPP 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 define specific DPP enzyme activity and expression in tissue specimens from Barrett’s metaplasia and dysplasia subgroups compared to normal, non-Barrett’s tissue.

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

P0554 DIFFERENT GLAND PHENOTYPES ARE CLONALLY RELATED IN BARRETT’S EOSPHAGUS AND GLAND PHENOTYPIC DIVERSITY IS INCREASED IN PATIENTS WHO HAVE PROGRESSED TO DYSPLASIA
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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 P63. A panel of antibodies specific to different gland phenotypes was used to classify biopsies completely in Barrett’s oesophagus (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 and as the gland is the unit of selection, we suggest that phenotypic diversity may confer a role in cancer progression. Exploiting mutations in the mitochondrial genome (MtDNA) as a marker of clonality we have demonstrated that the glandular phenotypes seen in Barrett’s represent an evolutionary pathway and that phenotypic diversity also leads to an increased cancer risk.

Results: A total of 112 BE biopsies from patients progressing to dysplasia were classified into 4 distinct gland phenotypes. Genetic diversity was assessed by Next-Generation sequencing of the mitochondrial genome (MtDNA), which showed a significant increase in mtDNA diversity in those biopsies progressing to dysplasia.

Conclusion: During routine endoscopy samples from healthy volunteers were obtained and analysed by flow cytometry as controls (n = 5).

Results: During progression from BE to EAC an increase of CD4+ cells was observed. The number of IL-22+ cells in malignant tissue compared to healthy controls was significantly increased. Addition of 1 mM sitagliptin did not reduce cytoplasmic DPP activity in FLO-1 cells, suggesting the presence of other peptides. High DPP4 activity was detected in the membrane fraction of duodenal biopsies (45.90 ± 8.55 mm pNA/min/mg protein) compared to gastric (3.35 ± 1.59 mm pNA/min/mg protein) and oesophageal biopsies (0.65 ± 0.71 mm pNA/min/mg protein). In contrast, differential DPP activity was detected in the soluble fraction of all duodenal, gastric and oesophageal tissue biopsies. Using 1μM sitagliptin, this was found to be specific to DPP4 in oesophageal samples, but likely derived from other peptides in gastric and duodenum associated with the gut.

Conclusion: Our preliminary in vitro findings suggest a differential pattern of DPP 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 define specific DPP enzyme activity and expression in tissue specimens from Barrett’s metaplasia and dysplasia subgroups compared to normal, non-Barrett’s tissue.

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

P0555 AN ANTI-INFLAMMATORY ENVIRONMENT CHARACTERIZES BARRETT’S OESOPHAGEAL ADENOCARCINOMAS AND INFLUENCES PATIENT SURVIVAL
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Introduction: Barrett’s Oesophagus (BE) is an acquired condition resulting from oesophageal reflux that causes Barrett’s metaplasia, dysplasia and cancer. Risk factors for BE progression to dysplasia and cancer include obesity, nicotine, and alcohol consumption. BE progression may lead to cancer and can progress to dysplastic lesions, which ultimately lead to oesophageal adenocarcinoma (EAC). The incidence of EACs is rising in the Western world and 5-year survival rates are below 20%. Hence, new and prognostic markers are needed. Since levels of interleukin (IL)-22 in IL-17A-producing cells are associated with a poor prognosis in colorectal cancer we wanted to investigate their influence in EACs.

Aims & Methods: None of the patients enrolled in this study received chemoradiotherapy prior to surgery and all patients had pathologically confirmed BE, EAC. mRNA expression levels of interleukin in tumour tissue and non-malignant peritumoral samples of 39 patients were measured. Immunohistochemical analysis was conducted to investigate interleukins during the progression from BE to EAC. Interleukins were investigated in non-malignant tissue samples from healthy volunteers and analysed by flow cytometry as controls (n = 5).

Results: During progression from BE to EAC an increase of CD4+ cells was observed. The number of IL-22+ and IL-17A+ cells as well as the number of FOXP3+ cells/mg tissue increased in oesophageal cancer and in its peritumoral 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 accordance to the latter finding high IL-10 mRNA expression levels were associated with poor survival in EAC patients. Interestingly, high levels of IL-10 mRNA expression levels of IL-10 in the non-malignant peritumoral tissue also correlated with poor survival.

Conclusion: During progression from BE to EAC the infiltration of CD4+ immune cells increases. While the relative amount of pro-inflammatory cells decreases, the amount of FOXP3+ immune cells increases. This suggests a differential pattern of immune cells increases. While the relative amount of pro-inflammatory cells decreases, the amount of FOXP3+ immune cells increases. This suggests a differential pattern of immune cell infiltration.

Disclosure of Interest: All authors have declared no conflicts of interest.
SURVEILLANCE GUIDELINES IN THE MANAGEMENT OF ADHERENCE TO QUALITY INDICATORS AND

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This was a Single-center retrospective study of endoscopies (EGDs) performed for biopsy protocol, (2) identify predictors of practice patterns, and (3) to assess standardized classification (Prague Criteria) and a systematic four-quadrant
The aims of this study were to evaluate (1) adherence to

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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 guidelines1. 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 detection2. 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 those 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 reviewed 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 operations including surgical consultants and 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) was similar in both groups: 8/105 (7.6%) on the DBO list and 6/100 (6%) in the GE group. All (100%) of the dysplasia detected on the GE lists occurred in procedure performed by consultant gastroenterologists.

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 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 endoscope operator since all of the dysplasia detected on GE lists was identified by consultant gastroenterologists. We believe our comparison highlights the additional familiarity of endoscopists and possible greater experience of endoscopists regularly taking BO biopsies. 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

P0555 A DEDICATED BARRETT’S OESOPHAGUS ENDOSCOPY LIST IMPROVES THE ACCURACY OF ENDOSCOPIC REPORTING AND QUALITY OF BIOPSES

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Aims & Methods: We searched our endoscopy software for patients who had an indication for gastroscopy documented as BO and who had an endoscopy on a GE list from 2014–2016. 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 reviewed 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 operations including surgical consultants and 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) was similar in both groups: 8/105 (7.6%) on the DBO list and 6/100 (6%) in the GE group. All (100%) of the dysplasia detected on the GE lists occurred in procedures performed by consultant gastroenterologists.

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 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 endoscope operator since all of the dysplasia detected on GE lists was identified by consultant gastroenterologists. We believe our comparison highlights the additional familiarity of endoscopists and possible greater experience of endoscopists regularly taking BO biopsies. 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

P0556 ADHERENCE TO QUALITY INDICATORS AND SURVEILLANCE GUIDELINES IN THE MANAGEMENT OF BARRETT’S OESOPHAGUS: A RETROSPECTIVE ANALYSIS

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Introduction: Adenocarcinoma near the esophagogastric junction is one of the most lethal GI malignancies known. Surgical treatment of these cancers carry 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 detect expression of TGF-ß and CD-44 in age specific subgroup of patients with adenocarcinoma of gastric cardia.

Results: Elderly patients have statistically significant better survival (median 20.2 month) compared with young patients (median 15.4 month) (p = 0.045). The median survival rate of patients without TGF-ß 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-ß 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

P0557 EXPRESSION OF TGF-B AND CD-44 IN AGE SPECIFIC SUBGROUP OF PATIENTS WITH ADENOCARCINOMA OF GASTRIC CARDIA

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Introduction: Adenocarcinoma near the esophagogastric junction is one of the most lethal GI malignancies known. Surgical treatment of these cancers carry 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.

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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

P0558 BARRETT’S OESOPHAGUS PROFILE AND OUTCOMES IN A LARGE COHORT

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Introduction: Barrett’s oesophagus (BO) is considered a premalignant condition for esophageal 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 biopsy 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 modalities, 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 profile- Our cohort consists of 406 patients, with a mean age of 60.9±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 interactive 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**

Introduction: Barrett esophagus (BE) is a premalignant condition for esophageal adenocarcinoma (EAC) where recommendations for BE surveillance guidelines aim to reduce treatment and improve quality of care. Data on the extent to which level BE surveillance guidelines are followed are scarce.

Aims & Methods: The objectives of this systematic review and meta-analysis were to quantify adherence to BE surveillance guidelines in (1) BE patients with dysplasia and (2) identify factors that are associated with adherence. A systematic literature search was performed using EMBASE, MEDLINE, PubMed, and Web of Science up to September 2016. Studies reporting adherence in at least one of the following four domains were selected: surveillance interval, biopsy protocol, landmark identification, and histopathological information. Relevant publications were assessed using the STROBE statement for observational studies (http://strobe-statement.org/). Adherence was considered a prevalence ratio and reported as a prevalence ratio for the associated factors were reported as odds ratios with analysis of heterogeneity (I² statistic).

Results: From a total of 373 studies, 49 were eligible for this meta-analysis. For BE surveillance in non-dysplastic BE patients, adherence varied from 28.3% (95% CI 20.9%; 35.1%) in patients with low-grade dysplasia, but with large heterogeneity (I² = 98.2%) and T = 100%, adherence to the Seattle protocol was 47% (95% CI 33.6%; 61.3%), T = 100%, length of BE was reported according to the Prague classification in 34% (95% CI 23.3%; 44.4%), T = 98.0% and in 51% (95% CI 27.7%; 65.5%, T = 99%) of patients with dysplastic BE the histology samples were reviewed by a second pathologist. Shorter BE length, an academic practice setting, younger age and the involvement of the clinical set-up incorporating a multifaceted intervention program were associated with better adherence. Endoscopists following the Seattle protocol detected more dysplasia.

Conclusion: Adherence to guidelines for the surveillance of BE is far from optimal and highly heterogeneous. A clinical set-up of a dedicated BE surveillance program is needed, for example follow-up within a research program, involvement of a dedicated nurse managing the program or guideline promotion by using posters stating recommendations. Besides initiating more and better studies to facilitate the creation of evidence-based guidelines, more effort should be directed to stimulate and monitor the implementation of guidelines in clinical practice.

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

References

Disclosure of Interest: All authors have declared no conflicts of interest.
treated by endoscopic resection were prospectively recruited from 16 hospitals throughout Japan. This cohort study was approved by the institutional review board at each hospital, and we obtained written informed consent from all patients. Using Lugol chromoendoscopy, we evaluated the dysplastic squamous epithelium in the esophagus. Lugol voiding lesion (LVL) was graded into 3 categories (A = no lesion; B = 1 to 9 lesions; C = ≥ 10 lesions per endoscopic view). Endoscopic images obtained from eligible patients at study entry were centrally reviewed in a blinded fashion by three endoscopists to determine the grade of LVL. ALDH2 status was determined by questionnaire facial flushing after alcohol drinking (present and past flushing—inactive ALDH2, never flushing = active ALDH2). Lifestyle surveys were conducted using a self-assessment questionnaire. Data collected between July 2000 and Dec 2001 from a different cross-sectional cohort (n = 1042; M/F = 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 LVL were A = 50 (15.2%), B = 174 (52.7%), and C = 106 (32.1%). After adjusting for sex and age, controls and the LVL 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 (4.6%, 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 LVL grade B and C was strongly associated with the amount of alcohol consumption especially in inactive ALDH2. Odds ratio (OR) of LVL grade B associated with heavy drinking was significantly stronger in inactive ALDH2 than in non-inactive ALDH2 (OR = 2.73, p < 0.0001) or LVL grade C associated with heavy drinking was significantly stronger in inactive ALDH2 (OR = 385) 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**

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**P0564 EVALUATION OF THE RISK OF METACHRONOUS SQUAMOUS CELL CARCINOMA OF THE OESOPHAGUS AND THE HEAD AND NECK AFTER ENDOSCOPIC RESECTION FOR SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS BASED ON THE GENETIC POLYMORPHISMS OF ADH1B AND ALDH2**

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**Introduction:** Metachronous multiple squamous cell carcinoma (SCC) of the oesophagus and the head and neck often occurs in patients who previously underwent endoscopic resection (ER) for SCC of the oesophagus. This has become a problem regarding the curability of ER. Katada et al reported that alcohol abstinence significantly decreased the risk of developing a secondary SCC of the oesophagus, based on a prospective study of 330 patients from 16 hospitals. However, there are few studies that have investigated the risk of developing a secondary SCC of the oesophagus and the head and neck based on the genetic polymorphisms of alcohol dehydrogenase-1B (ADH1B) and aldehyde dehydrogenase-2 (ALDH2) which are closely associated with developing oesophageal SCC. No studies have evaluated the risk of developing a third (or more) SCC after ER for SCC of the oesophagus.

**Aims & Methods:** The study group included patients who underwent ER for SCC of the oesophagus. All patients were followed up by using endoscopic examination for ≥ 2 years. Overall, 128 patients were included in the study. The drinking and smoking histories before and after ER were carefully documented. To examine two single nucleotide polymorphisms (SNPs) on ADH1B and ALDH2 genotyping, we obtained approximately 1 ml of blood (serum) from 61 (n = 61) patients. The subjects 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:** Between Sep 2005 and May 2010, 330 patients (M/F = 278/52) were registered. The proportions of the different grades of LVL were A = 50 (15.2%), B = 174 (52.7%), and C = 106 (32.1%). After adjusting for sex and age, controls and the LVL 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 (4.6%, 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 LVL grade B and C was strongly associated with the amount of alcohol consumption especially in inactive ALDH2. Odds ratio (OR) of LVL grade B associated with heavy drinking was significantly stronger in inactive ALDH2 than in non-inactive ALDH2 (OR = 2.73, p < 0.0001) or LVL grade C associated with heavy drinking was significantly stronger in inactive ALDH2 (OR = 385) 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**
they were not recommended additional therapy. The remaining eight patients had lymphovascular invasion or SM2 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 treated with postoperative CRT or ESD 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 were 81.7% and 100%, respectively. Considering ER alone, 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

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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 minimally 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 were 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 pT1a 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 35.0 mm in the ESD group (p < 0.001). The complete resection rate in the ESD group was 95.2% versus 30% (24/80) and 10/68 (68.8%) (p < 0.0001). The mean follow-up period was 22 months. The recurrence rate was 14.2% (19/80 in the ESD group) and 2/68 in the ESD group (p = 0.001). At 12 months, recurrence-free survival rate was 84.4% and 74.6% 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 tumor size > 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 ≥3 m, metastasis free survival rate at 24 months were 100.0% after complementary treatment by radio-chemotherapy, 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 OESOPHAGEAL SQUAMOUS CELL CARCINOMA BASED ON LONG-TERM OUTCOMES

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Introduction: Oesophageal squamous cell carcinoma (ESCC) with invasion into the muscularis mucosa up to the 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 (IN). 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.

Results: We enrolled 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, tumor infiltration pattern (INF) a/b, VM0, ly0 and v0. We evaluated the clinicopathological characteristics of the patients and lesions between the 2
groups. The proportion of patients with additional treatment after ER was significantly lower in the e-curable group (23%, 9/39) than in the non-e-curable group (39.9% (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%) occurred due to primary cancer. The other reasons were as follows: other organ cancer (10 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% (4/49), respectively. The local recurrence rates in the e-curable and non-e-curable groups were 0% (0/39) and 7% (4/49), respectively. The 5-year recurrence-free survival rates in the e-curable and non-e-curable groups were 97% and 98%, respectively. The 5-year recurrence-free survival rates in the group with IFNa and no lymphovascular invasion was higher than the group with INFb, INFc, or lymphovascular invasion was 100% and 87%, respectively. The recurrence-free survival rate was significantly higher in the group with INFα and no lymphovascular invasion than in the group with INFb, INFc, or lymphovascular invasion.

Conclusion: Our outcome data support the clinical validity of the e-curable conditions after ER for MM/SM1 ESCC of the JES guidelines. However, MM/SM1 ESCC with INFα 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.

P5059 ENDOSCOPIC SUBMUCOSAL DISSECTION COMPARED TO LAPAROSCOPIC GASTRECTOMY FOR TREATMENT OF EARLY GASTRIC CANCER – A PROSPECTIVE RANDOMIZED TRIAL

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Introduction: The endoscopic submucosal dissection (ESD) allows en-bloc resection of early gastric cancer (EGC) with wide resection margins [1, 2]. En-bloc resection resulted in adequate resection margins and reduced local recurrence. When compared to gastrectomy, endoscopic resection should theoretically result in better perioperative outcomes and quality of life [3]. There is currently no study in the literature which directly compares laparoscopic assisted gastrectomy against ESD for treatment of intramucosal EGC. The objective of the study is to compare clinical, oncological and immunological outcomes of endoscopic submucosal dissection (ESD) against laparoscopic assisted gastrectomy (LAG) for treatment of early gastric cancer.

Aims & Methods: All patients with endoscopic diagnosis of early gastric cancer (EGC) and biopsy confirmed to be high grade dysplasia or adenocarcinoma were reviewed. They were then staged using investigations including image enhanced endoscopy, EUS and CT and those predicted to be T1a (intramucosal) neoplasms were randomly assigned to receive ESD or LAG. ESD were performed according to the standard procedure, while LAG were performed with D1+ lymph node phadentectomy. The baseline demographics, clinical perioperative outcomes, immunological and oncological outcomes were compared between the two groups. Primary outcome was rate of complication after operation.

Results: From 2011 to 2016, 36 patients with early gastric cancers were randomly assigned to receive ESD (n = 18) or LAG (n = 18). There was no difference between the two groups in terms of age, gender, ASA grade and baseline demographics (Table 1). ESD was associated with significantly shorter operative time (108.4 ± 58.8 vs 266.2 ± 47.8 mins, p = 0.001), hospital stay (4 (3–6) vs 8 (4–14) days; p = 0.001) and lower complication rate (1 (5.6%) vs 7 (4–13); p = 0.041). There was no mortality at 30 days for the two groups while those in ESD group tolerated full diet earlier (2 (1–5) vs 5 (3–12) days; p < 0.001). Patients who received ESD had significantly lower level of CRP as well as VAS pain scores on postoperative days 1, 2, 3 and 7 when compared to LAG. The median follow-up was 41.5 months for ESD group and 36 months for LAG group, and there was no difference in the cancer recurrence and overall survival. 27.8% of patients required re-intervention after ESD.

Conclusion: Our prospective randomized study showed that patients treated by ESD had significantly lower complication rate and better perioperative outcomes when compared laparoscopic assisted gastrectomy. ESD should be the first line 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.

References:

P5070 PREVALENCE OF PRE-MALIGNANT LESIONS IN BIOPSIES TAKEN FROM GASTRIC MUCOSA ENDOSCOPICALLY NORMAL OR WITH GASTRITIS

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Introduction: Pre-malignant conditions and lesions of the stomach (PCLS): atrophy, intestinal metaplasia and dysplasia are risk factors for the development of stomach cancer; therefore, its diagnosis is very important to identify patients with greater probability of this malignant neoplasm. The Clinical Guidelines recommend that during endoscopy procedure, to avoid an under diagnosis, biopsies of different areas of the stomach should be taken even when no lesion is evident in order to identify PCLS that are generally multi-focal. The initial identification of patients with this type of lesions and their subsequent stratification with the OLGA and OLGUIM systems allows defining the subgroup of patients that merit follow-up because they have a higher risk of developing gastric cancer. However, there is a discrepancy between endoscopists, because it is now preferred to take biopsies directed at the lesions and not to do them systematically at fixed sites, so that no lesion is observed.

Aims & Methods: We aimed to evaluate and compare the prevalence of PCLS in biopsies taken from gastric mucosa with or without lesion during the endoscopic examination. A retrospective, cross-sectional study was performed on 356 dyspeptic patients. We reviewed the reports of esophagogastroduodenoscopies at the Trujillo Regional Teaching Hospital-Perú from October 2016 to March 2017. This study included reports which were consigned diagnosis with biopsies of different areas of the stomach. These biopsies were sent in different vials. Permission was obtained from the Hospital’s research committee. Those reports that had a diagnosis of stomach cancer, gastrectomy, and those with not biopsy parameters

Table 1: - Outcomes of ESD vs Lap Gastrectomy

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<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
<th>p value</th>
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<td>Male (%)</td>
<td>7 (38.9)</td>
<td>11 (61.1)</td>
<td>0.317</td>
</tr>
<tr>
<td>Age (mean ±/ SD)</td>
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<td>61.7±/–11.2</td>
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</tr>
<tr>
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<td>2 (0–9)</td>
<td>0 (0–4)</td>
<td>0.905</td>
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<tr>
<td>Smoker (No/Ex/Current)</td>
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<td>11/3.4</td>
<td>0.534</td>
</tr>
</tbody>
</table>

(continued)
or those in which the biopsies were still taken from the different anatomical areas were excluded. A total of 331 patients were included, and 10 of them were excluded.

**Results:** Of 148 patients were admitted to the study. The mean age was 49.7±9.3 years, 60% were female (CE: 52.67, 95%), 264 were sent with biopsies with the different areas of the stomach distributed as follows: 148 of antrum, 54 of antrum, 48 (32.4%) duodenal biopsies 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 104 (74.6, 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**


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**Introduction:** Endoscopic treatment of sporadic duodenal adenoma is mainly performed in 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 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 by EMR for SDA histologically proven were included. Patients with PAF and ampullary adenoma were excluded. All the following outcomes were systematically recorded in both centers: complete endoscopic resection, resection with negative lateral and vertical margins, recurrence, success of the endoscopic treatment and adverse events (Perforation, intra-procedural bleeding, delayed bleeding, others). There were analysed with multivariate analysis.

**Results:** 134 procedures were performed. The mean patient age was 65 years (33–85), 50.7% were women. The mean SDA size was of 20.7 mm (5–50 mm), mostly located in the second duodenum (61.2%). 64.9% of the adenomas had a villous component, 33.4% with high grade dysplasia and 7.5% with in situ or intramucosal adenocarcinoma. 61.5% were upgraded significantly the lesion size and its endoscopic resection rate of 96.2% which was associated in multivariate analysis with the lesion size and depressed en bloc. The en-bloc resection rate of was 44%. Vertical margins 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. Delayed bleeding occurred in 13.4% of the cases and was associated with a larger lesion size and the presence of high-grade dysplasia or adenocarcinoma. Usual use of antplatelet or anticoagulant did not increase the risk of bleeding after pre operative management. A prophylactic hemostasis was realized for 61% of the procedure, by clips alone or associated in 72.3% of the cases. Prophylactic clipping reduced significantly the risk of delayed bleeding. Perforation occurred in 3.7% of case. Median follow-up was of 31.2 months with at least one follow-up endoscopy (78.3%). Final success of endoscopic treatment occurred in 83.8% of the case. 30 patients had a recurrence (28.6%). 13 among them were successfully retreated with endoscopy, 12 still receiving endoscopic treatment with multiple sessions, and 5 were referred to surgery. In multivariate analysis, the main risk factor for recurrence was the lesion size.

**Conclusion:** Endoscopic treatment of SDA appears to be effective and relatively safe in tertiary centers. The bleeding complications were endoscopically controlled and their occurrence could be reduced with clipping prophylactic hemostasis. Perforation is rare. Recurrence rate is frequent and associated with piece meal resection but can be endoscopically managed.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
PHOTOM CANNOT BE THE PATIENT WITH NON-CURATIVE ESD FOR EARLY GASTRIC CANCER RESCUED BY SURGERY AFTER RECURRENCE?


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7Nara Medical University, Nara/Japan
8Japanese Red Cross Society Kyoto Daichi Hospital, Kyoto/Japan
9Shinshu University School Of Medicine, Nagano/Japan
10Teyama Prefectural Central Hospital, Teyama/Japan
11Gifu University Graduate School of Medicine, Gifu/Japan
12Hiroshima University Hospital, Hiroshima/Japan
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Introduction: Additional surgery should be recommended in patients with non-curative endoscopic resection for early gastric cancer (EGC). However, this decision has often been hesitated according to patient condition such as advanced age or comorbidities. After the recognition of recurrence, the salvage surgery has been considered difficult. However, little has been reported on it. Aim of this study was to clarify the results of salvage surgery for recurrence after non-curative ESG for EGC using data from multicenter retrospective study (EAST study). Of 15,785 patients who underwent ESD for EGC at 19 participating institutions from January 2000 to August 2016, we collected data for patients who met the current curative criteria for EGC 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. A total of 15 patients with recurrence were only local site (7 recurrence site alone 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. One only 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 5 months from recurrence. 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 was 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 ANTITHROMBOTIC THERAPY

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Introduction: Due to the increase of elderly patients who are often receiving antithrombotic therapy for cardio- and cerebrovascular diseases, postprocedure 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 antplatelet agent before endoscopic treatments including endo- scope 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. Postprocedure bleeding was defined as: (1) hematochezia, melena for which an emergency endoscopy was required and (2) bleeding which were confirmed with a repeat endoscopy after a drop ≥2 g/L of haemoglobin level.

Results: The total number of patients undergoing antithrombotic therapy was 78, out of whom 38 patients were taking antiplatelet agents only, 29 were taking anticoagulants only, and 11 were taking the both. The antithrombotics were suspended in 22 cases (Group A), substituted with heparin in 18 (Group B), and kept continued in 38 (Group C). Postprocedure 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 postprocedure bleeding and those without concerning 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 postprocedure bleeding (odds ratio = 15.926, 95% confidence interval: 7.415-34.280, p = 0.001). However, the rate of postprocedure 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 postprocedure 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
**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**


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**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 was defined by a positive result on any of these tests. Multivariate logistic analysis was performed for the age, sex, smoking, alcohol and family history of GC.

**Results:** GC patients had more high-risk OLGA stages (25.9%) than controls (6.8%, P < 0.001) and high-risk OLGIM stages (18.3%) than controls (4.9%, P < 0.001). In the multivariate logistic analysis, Old age (odds ratios (ORs), 1.932; P < 0.001), Male (1.193; 0.847–1.679; P = 0.312) were independent risk factors for GC as well as intestinal type (Table). High-risk OLGA stages were significantly associated with increased risk of GC in comparison to low-risk (OR, 3.778; P < 0.001): intestinal-type (OR, 4.318; P < 0.001) and diffuse-type (OR, 2.920; P < 0.001) (Table). High-risk OLGIM stages were also significantly associated with increased risk of GC in comparison to low-risk (OR, 3.051; P < 0.001): intestinal-type (OR, 3.981; P < 0.001).

**Conclusion:** High-risk OLGA and OLGIM stages were useful for intestinal type as well as diffuse type. This usefulness will be increased when combined with H. pylori infection and family history of GC in regions with high prevalence of GC. Analysis regarding specific interaction among these three factors is undergoing.

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

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**References**


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**Abstract No: P0576**

<table>
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<tr>
<th>Gastric cancer patients (n = 607)</th>
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<th>Diffuse-type (n = 233)</th>
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<td><strong>OR</strong> 95% CI p-value</td>
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<td>7.266 2.570–20.544 &lt;0.001</td>
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<tr>
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<td>4.318 2.899–6.431 &lt;0.001</td>
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P0578 RISK FACTORS FOR LYMPH NODE METASTASIS OF ULCERATIVE TYPE INTRAMUCOSAL EGC
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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 = 0.001) was significantly associated with LNM. There was no significant association between tumor size, histopathologic type of tumor, and lymphovascular invasion (p > 0.05). 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 the LNM after ESD for ulcerative type intramucosal EGC.

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

P0579 THE FEASIBILITY STUDY USING KUMUC ROBOTIC MANIPULATOR IN ENDOSCOPIC SUBMUCOSAL DISSECTION
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Introduction: Gastrointestinal cancers are one of the most common malignancy worldwide. Especially endoscopic submucosal dissection (ESD) for early gastrointestinal cancers have been considered as the current standard cancer treatment. However, lack of counter traction during dissection procedure is one of major difficulty. To overcome this problem, we developed new endoscopic technique using robotic manipulator and conducted study about efficacy and safety in vitro animal study.

Aims & Methods: A novel robotic suture manipulator is composed of control panel and a working arm, which grasp and move objects at the end of scope. A total of 10 pig stomachs were used for the test. Porcine stomachs were assigned randomly to two groups and ESD was performed on mucosa of stomach using conventional technique and endoscopic technique with robotic manipulator. Endoscopic experts and novice endoscopists performed ESD in 2 parts (antrum & body) of stomach. During procedure, robotic manipulator lifts up dissected tissue of stomach to make better visibility. Procedure time, complete resection rate, and complication such as perforation were recorded.

Results: The average procedure time for the robotic manipulator and conventional ESD was 42 minutes and 45.9 minutes. In novice endoscopists, the average procedure time using robotic manipulator is faster than conventional ESD group (p = 0.05). Both endoscopic expert and novice endoscopist completed the ESD procedure for en bloc resection of target lesions using KUMC robotic manipulator. There was no difference in complete resection rates between two groups. No complication such as perforation was occurred in both groups during the procedures. There was no difference depending on resected location in stomach.

Conclusion: The robotic manipulator, which can perform ESD more easily showed feasible result comparing with conventional ESD. ESD using robotic manipulator could be helpful, especially in novice endoscopists. This research proposes a novel approach for safe and feasible method during ESD.

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

P0580 DEVELOPMENT OF NOVEL ENDOSCOPIC IRREVERSIBLE ELECTROPOORATION ABLATION DEVICE
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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 several clinical trials for applying IRE ablation for gastrointestinal tumors also have been conducted recently. Here, we developed new endoscopic IRE device, and studied about its effectiveness and feasibility in animal model.

Aims & Methods: Newly developed endoscopic IRE ablative catheter works with single channel of endoscope. A pair of dipolar electrodes consist of pre-shaped f 0.63 mm nitinol wire and the distance between each electrode is 10 mm. The electrodes are loaded within banded tube for stent delivery system then deployed when the 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 2 pigs in vitro stomachs were used in this study. The tissue with H&E stain showed diffuse cell death 24 hr after IRE ablation.

Abstract No: P0577

Dietary cancer mortality associated with baseline BMI to BMI ranges

<table>
<thead>
<tr>
<th>All participants (per 5 kg/m² increase in BMI)</th>
<th>12-24.9 kg/m²</th>
<th>25-47 kg/m²</th>
</tr>
</thead>
<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>
</tr>
<tr>
<td>Digestive cancer</td>
<td>Deaths</td>
<td>Deaths</td>
</tr>
<tr>
<td>Esophagus</td>
<td>310</td>
<td>252</td>
</tr>
<tr>
<td>Stomach</td>
<td>2,032</td>
<td>1488</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>1328</td>
<td>866</td>
</tr>
<tr>
<td>Colon</td>
<td>835</td>
<td>536</td>
</tr>
<tr>
<td>Rectum</td>
<td>493</td>
<td>330</td>
</tr>
<tr>
<td>Small intestine</td>
<td>61</td>
<td>49</td>
</tr>
<tr>
<td>Liver</td>
<td>2365</td>
<td>1577</td>
</tr>
<tr>
<td>Pancreas</td>
<td>929</td>
<td>603</td>
</tr>
<tr>
<td>GB and Biliary tract</td>
<td>749</td>
<td>471</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, 500, 500-999, 1,000, 1,000-1, 490, 000, ≥ 1, 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 complete cell death 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.

References

P0582 ENDOSCOPIC SMALL CAPACITY FORCEPS INCREASE THE PATHOLOGICAL DIAGNOSIS OF GASTRIC INDEFINITE NEOPLASIA

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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 counted the number of GIN and gastric carcinoma lesions. Patient characteristics, lesion characteristics (e.g., size, macroscopic appearance, and color tone), endoscopist experience level, biopsy samples, and diagnostic procedures were investigated in both groups diagnosed as GIN. 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 8420 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, 4, 204 (26.3%) underwent gastric biopsy with SmF. Gastric carcinoma was diagnosed in 7.93% (205/2584) and 7.54% (317/4124) of the SIF and SmF groups, respectively (P = 0.556). GIN was diagnosed in 34.2% (883/2584) and 43.2% (1755/4124) of the SIF and SmF groups, respectively. The difference was significant (P = 0.048). The two groups diagnosed as GIN did not differ significantly in terms of the patient characteristics, lesion characteristics, endoscopist experience level and biopsy-related hemorrhage. The mean minor-axis lengths of the biopsy samples were 1.50 ± 0.50 mm and 1.38 ± 0.40 mm in the SIF and SmF groups, respectively. The SmF group samples tended to be shorter (P = 0.008). In both groups, 40% of the final diagnoses were epithelial neoplasia; no significant differences were observed.

Conclusion: SmF use may increase the rate of GIN. Thus, SmF 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 METASTASIS IN RATS

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Introduction: Stomach cancer is a leading cause of cancer-related death in the world. It is well known that stress and nitrosamines can play an important role in the cancer. However, 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 evidence that the 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 (over-population during 9 months); 2) the daily using of toluidine (2 g/kg) in food and water with nitrates (2 g/l); 3) the combined effects of stress + nitrates. The
upper endoscopy was performed using our in-room 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 mucousa during the first 3 months. In the third month 35% (7 of 20) of animals demonstrated small percent 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 (small, 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 (30 of 40). These rats showed symptoms of atrophic gastritis. Other 25% (5 of 20) of animals did not demonstrate any changes in gastric mucosa. 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. As 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 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 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).

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

References

P0985 RELEVANCE OF PTGS1 AND PTGS2 GENES POLYMORPHISMS TO GASTRIC CANCER RISK AND PHENOTYPE IN CAUCASIANS
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Tecnologìàs Biomeààs (ITB), Centro de Investigacio òn Biomeààsica de Canarias (CIBICAN), Tenerife/Spain
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Introduction: Gastric cancer (GC) is a major burden worldwide accounting for 7% of all cancer cases and 5% of all cancer-related deaths. The etiology of GC is multifactorial and involves carcinogenic agents (e.g., Helicobacter pylori (H. pylori) infection), dietary habits, and genetic factors. Understanding the molecular mechanisms underlying the complex interactions between environmental factors and host genetic predisposition is essential for the development of effective preventive and therapeutic strategies.

Aims & Methods: In the current study, we aimed to investigate the association between single nucleotide polymorphisms (SNPs) in the PTGS1 and PTGS2 genes and the risk and phenotype of GC. We included 603 unrelated Spanish individuals with GC and 603 age- and sex-matched healthy controls. Genotyping was performed for 20 SNPs, including 12 from the PTGS1 gene and 8 from the PTGS2 gene. The association analysis was performed using logistic regression, and the significance level was set at p < 0.05.

Results: Our results showed a significant association between the PTGS1 -2578C allele and an increased risk of GC (OR: 1.70; 95% CI: 1.16–2.48). However, no significant association was found between the PTGS2 -1195G allele and GC risk.

Conclusion: Our findings suggest that the PTGS1 -2578C allele may be a potential biomarker for the risk of GC. Further studies are needed to replicate these findings and to better understand the underlying mechanisms.

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

References

P0986 GASTRIC JUICE FREE AMINO ACID PROFILING AS A METHOD FOR DISCOVERING POTENTIAL BIOMARKERS OF GASTRIC CANCER
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2United European Gastroenterology Journal 5(5S)

Introduction: Gastric cancer (GC) contributes a heavy burden to the global health, especially in Asian countries. Early diagnosis is crucial to improve patients’ outcome, but reliable biomarkers are desperately needed. In our previous studies, we established several endogenous fluorescence spectra of gastric juice for GC diagnosis and screening [1, 2], isolated and identified three fluorescénes candidates (aromatic amino acids, AAAs), which can be used to distinguish GC patients from controls. However, the characteristic fluorescence of the whole metabolic spectra of gastric juice free amino acids (GFJAs) in GC patients remains unclear. Most previous investigators have reported on the changes of amino acids’ concentrations in the peripheral blood, urine and tissues of GC patients [3, 4].

Aims & Methods: In order to determine the metabolic patterns of GFJAs in GC and NGD patients, gastric juice samples were collected from GC patients (n = 47) and age-matched NGD patients (n = 83) from December 2015 to May 2016, and then measured by an automatic amino acid analyzer. Orthogonal partial least squares discriminant analysis (OPLS-DA) and Mann-Whitney U test are used for data analysis. The diagnostic value of GFJAs was evaluated by ROC curve. Furthermore, significantly altered metabolic pathways were identified by pathway analysis using public databases such as KEGG and MetaboAnalyst 3.0.

Results: GFJAs profiles significantly differed between the GC and NGD patients. A total of 14 kinds of GFJAs, whose first principal component of variable importance in the projection (VIP) value exceeding 1 and P-value less than 0.05, were screened as differential GFJAs. Compared with the NGD patients, GC patients had higher levels of threonine, serine, alanine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, lysine and arginine,
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 combined AUC of 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 alterations in gastric juice.

Table 1: Differential GJFAAs between GC and NGD patients and their dis- criminating performance

<table>
<thead>
<tr>
<th>Number</th>
<th>Abbreviation</th>
<th>Median GC</th>
<th>Median NGD</th>
<th>P-value</th>
<th>VIP</th>
<th>PCC</th>
<th>AUC</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA01</td>
<td>Pser</td>
<td>0.028</td>
<td>0.037</td>
<td>0.002</td>
<td>1.058</td>
<td>0.768</td>
<td>0.561–0.771</td>
<td></td>
</tr>
<tr>
<td>AA02</td>
<td>PeIN</td>
<td>0.007</td>
<td>0.018</td>
<td>&lt;0.001</td>
<td>1.028</td>
<td>0.666</td>
<td>0.715–0.820</td>
<td></td>
</tr>
<tr>
<td>AA04</td>
<td>Urea</td>
<td>0.178</td>
<td>0.604</td>
<td>&lt;0.001</td>
<td>1.058</td>
<td>0.484</td>
<td>0.729–0.880</td>
<td></td>
</tr>
<tr>
<td>AA06</td>
<td>Thr</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>
<td></td>
</tr>
<tr>
<td>AA07</td>
<td>Ser</td>
<td>0.016</td>
<td>0.005</td>
<td>&lt;0.001</td>
<td>1.420</td>
<td>2.671</td>
<td>0.831–0.959</td>
<td></td>
</tr>
<tr>
<td>AA12</td>
<td>Ala</td>
<td>0.033</td>
<td>0.016</td>
<td>&lt;0.001</td>
<td>1.238</td>
<td>1.973</td>
<td>0.783–0.965</td>
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</tr>
<tr>
<td>AA15</td>
<td>Val</td>
<td>0.025</td>
<td>0.013</td>
<td>&lt;0.001</td>
<td>1.025</td>
<td>1.763</td>
<td>0.712–0.814</td>
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</tr>
<tr>
<td>AA17</td>
<td>Met</td>
<td>0.017</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.178</td>
<td>2.148</td>
<td>0.791–0.877</td>
<td></td>
</tr>
<tr>
<td>AA18</td>
<td>lle</td>
<td>0.026</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.343</td>
<td>2.674</td>
<td>0.812–0.887</td>
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</tr>
<tr>
<td>AA19</td>
<td>Leu</td>
<td>0.075</td>
<td>0.020</td>
<td>&lt;0.001</td>
<td>1.626</td>
<td>2.697</td>
<td>0.888–0.933</td>
<td></td>
</tr>
<tr>
<td>AA20</td>
<td>Tyr</td>
<td>0.066</td>
<td>0.026</td>
<td>&lt;0.001</td>
<td>1.580</td>
<td>2.933</td>
<td>0.765–0.902</td>
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</tr>
<tr>
<td>AA21</td>
<td>Phe</td>
<td>0.066</td>
<td>0.032</td>
<td>&lt;0.001</td>
<td>1.515</td>
<td>1.754</td>
<td>0.803–0.887</td>
<td></td>
</tr>
<tr>
<td>AA31</td>
<td>Lys</td>
<td>0.044</td>
<td>0.015</td>
<td>&lt;0.001</td>
<td>1.091</td>
<td>2.321</td>
<td>0.848–0.725</td>
<td></td>
</tr>
<tr>
<td>AA32</td>
<td>Arg</td>
<td>0.036</td>
<td>0.008</td>
<td>&lt;0.001</td>
<td>1.332</td>
<td>2.722</td>
<td>0.772–0.686</td>
<td></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

P0508 THE ASSOCIATION BETWEEN MMP-2/9 AND TYPE IV COLLAGEN LEVELS OF AMINIC ACIDS IN GASTRIC JUICE OF GASTRIC CANCER PATIENTS

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Introduction: It is reported that aromatic amino acids (AAAs) in gastric juice could be used as potential diagnostic biomarkers to screen gastric cancer (GC) [1–3]. However, the underlying mechanism remain elusive [4]. Our group had conducted several studies on the correlations on the reasons to cause such phenomenon before. The candidate molecules: 1) L-type amino-acid transporter 1 (LAT1), which is involved in the enhancement transport of amino acids and the accumulation of AAAs near cancer foci; 2) intracellular amino acid-metabolizing enzymes, such as indoleamine 2, 3-dioxygenase (IDO) and monoamine oxidase (MAO); 3) proteins involved in intracellular protein degradation or autopsy, (e.g., SQSTM1/p62) had been examined [5]. However, because of the difference in the expression of the above proteins in different pathological classifications of GC, it is impossible to explain the phenomenon that the elevation of AAAs’ levels in gastric juice in almost all types of GC patients.

Aims & Methods: To investigate the role of proteolytic enzymes matrix metalloproteinase-2/9 (MMP-2/9) in the abnormal elevation of AAAs’ concentrations in gastric juice of GC patients, gastric mucosal specimens and gastric juice samples were sequentially collected from 29 GC patients who had a relatively matched non-neoplastic gastric disease (NGD) patients. The expression levels of MMP-2/9 and type IV collagen (Col IV) in gastric mucosal tissues were examined by immunohistochemical staining while the levels of AAAs in gastric juice were measured by liquid chromatography-tandem mass spectrometry (LC-MS/MS). Furthermore, the association between them was evaluated by Spearman correlation analysis.

Results: On the one hand, the expression intensity of MMP-2/9 in GC group were significantly higher than those in NGD group, while Col IV was merely slightly higher than that in NGD group (P < 0.001 for all). Moreover, there was a positive correlation between the expression level of MMP-2 and MMP-9 (rho = 0.439, P < 0.01), but they were both negatively correlated with Col IV (rho = −0.454, P < 0.01; rho = −0.392, P < 0.01). On the other hand, significantly higher levels of AAAs in gastric juice were observed in GC patients than those in NGD individuals (P < 0.001 for all). Ultimately, the expression levels of MMP-2/9 in gastric mucosal tissues were both positively correlated with the concentrations of AAAs in gastric juice (MMP-2; rho = 0.282, 0.295, and 0.293, respectively, P < 0.001 for all; MMP-9; rho = 0.457, 0.455, and 0.417, respectively, P < 0.001 for all), but Col IV was negatively correlated with them (rho = −0.283, −0.280, and −0.273, respectively, P < 0.01 for all) (Table 1).

Table 1: Relationship between the expression levels of MMP-2/9 and Col IV in gastric tissues and the levels of AAAs in gastric juice

<table>
<thead>
<tr>
<th>Variable</th>
<th>MMP-2</th>
<th>MMP-9</th>
<th>Col IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyrosine</td>
<td>0.262**</td>
<td>0.457***</td>
<td>−0.283**</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>0.295**</td>
<td>0.455***</td>
<td>−0.280**</td>
</tr>
<tr>
<td>Tryptophan</td>
<td>0.283**</td>
<td>0.417***</td>
<td>−0.273**</td>
</tr>
</tbody>
</table>

**represents significant correlation using Spearman correlation analysis when the confidence level was 0.01; ***represents significant correlation using Spearman correlation analysis when the confidence level was 0.001.

Conclusion: The overexpression of MMP-2/9 resulting in the degradation of Col IV in basement membrane and extracellular matrix may lead to the variation of AAAs’ levels in gastric juice of GC patients.

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

References
P0589 INTERFERENCE OF PG2 TATA BOX REGION WITH THE SEP PG2 LEVEL IN GASTRIC CANCER

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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 parameter in population at risk for GC and AGG patients.

Aims & Methods: Genetic 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 PG2 cut-off was 70.15% and 79, 65% sensitivity and specificity, respectively (AUC: 0.75, p < 0.0001). We obtained 26 different PG2 TATA box fragments (630 bp to 479 bp). These fragments were grouped into 4 sized categories (1 = 308–400 bp; 2 = 401–436 bp; 3 = 437–438 bp; 4 = 439–479 bp). A positive correlation among the increase of PG2 sized fragments and the sPG2 level was found in the GC group (linear regression y = 16, 438 + 2, 864 x, p = 0.02)

Conclusion: In the literature, we confirm sPG2 level as a marker discriminating between GC and individuals at risk for GC (ie ACAG and FDR) in our series. We also reported a correlation between the shortest PG2 TATA BOX fragments and the lower PG2 level. Since highest PG2 level was related to the GC condition, our data suggest that carriers having longer TATA BOX region may produce higher sPG2 level than patients with shorter condition. The clinical significance of the differences in PG2 level associated with the TATA BOX fragments, by interfering with the transcriptional factor and then with the expression of other encoding gene, appear to be an intriguing new aspect. This study should be important 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

P0590 HELICOBACTER PYLORI INFECTION ASSOCIATED WITH NONALCOHOLIC FATTY LIVER DISEASE: A LARGE-SCALE COHORT STUDY

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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, eating status, alcohol intake, regular exercise, and education level. H. pylori, helicobacter pylori; HR, hazards ratio; CI, confidence intervals.

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>
<th>Multivariable-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>
<td>1.14 (1.06–1.22)</td>
</tr>
<tr>
<td>H. pylori (-)</td>
<td>34,960.7</td>
<td>1300</td>
<td>37.2</td>
<td>1.00 (reference)</td>
</tr>
</tbody>
</table>

*Estimated 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.

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 pathophysiologic 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.

P0591 HELICOBACTER PYLORI INFECTION STATUS IN HUMAN IMMUNODEFICIENCY VIRUS-POSITIVE PATIENTS


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Introduction: Helicobacter pylori infects the gastric mucosa and causes chronic gastritis via the immunoreaction of the host. By contrast, the human immunodeficiency virus (HIV) infects CD4-positive T lymphocytes and destroys the immune system of the host. Some studies pointed out that the H. pylori infection rate is lower in HIV-positive patients. This is because in these patients, H. pylori is incidentally eradicated by the course of antibiotic therapy for HIV infection and because the supply of nutrients to H. pylori is prevented by the decrease in the number of CD4 lymphocytes.

Aims & Methods: We enrolled 290 HIV-positive patients who underwent esophagogastroduodenoscopy in our Hospital between January 2013 and September 2016. As end points of H. pylori infection examination, we retrospectively examined the presence of gastric mucosa atrophy, H. pylori infection, H. pylori eradication, and comorbidity. As end points of HIV infection examination, we quantified the number of CD4 lymphocytes and the titer of HIV and investigated the presence of acquired immunodeficiency syndrome (AIDS). Based on these data, we examined the relationship between H. pylori and HIV infections.

Results: Of the 290 patients, 281 were men and 9 were women, whose median age was 46 years (range, 22–82 years). Ninety patients had atrophic gastritis or stomach or duodenal ulcer, of whom 40 underwent examination for H. pylori infection. The median number of CD4 lymphocytes in the 21 H. pylori-positive cases was 48,169.3 (range, 108–952/µL), the titer of HIV ranged from non-detection to 1,590,000 copies/mL, and one patient had AIDS. Meanwhile, the median number of CD4 lymphocytes in the 19 H. pylori-negative cases was 331 µL (range, 15–989) and the titer of HIV ranged from non-detection to 1,590,000 copies/mL, and three patients had AIDS. H. pylori eradication therapy was applied in 18 of 21 H. pylori-positive cases. The success rate of primary H. pylori eradication was 37.5% (6/16 patients) and that of secondary eradication was 70% (7/10 patients). In addition, 2 (7.7%) of the 26 patients with stomach or duodenal ulcer needed urgent hemostasis. Five (6.7%) of the 74 cases of atrophic gastritis had gastric cancer, of which two were undifferentiated stomach cancers.

Conclusion: In our study, the number of CD4 lymphocytes was higher in the HIV-positive patients with H. pylori infection, implying that the high CD4 count was suggested to be associated with persistent H. pylori infection. In addition, the success rate of H. pylori eradication was shown to be insufficient in HIV-positive patients.

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

References

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 55,360 patients with hepatic encephalopathy were included in the study, of which 20 had H. pylori infection. The mean patient age was 60 years and 42% were female. After adjusting for confounders using multivariate analysis, patients with and without H. pylori had similar adjusted odds of mortality (adjusted Odds Ratio (aOR): 1.71, 95% CI: 0.62–4.74, p = 0.30). As far as resource utilization, patients with and without H. pylori had similar adjusted odds of hospitalization (aOR: 1.02, 95% CI: 0.88–1.16, p = 0.60), LOS (adjusted mean difference: 1.7 days, 95% CI: −0.02–3.42, p = 0.52), and total hospitalization charges (adjusted mean difference: $16588, 95% CI: $4499–$37675, p = 0.12). However, patients with H. pylori had higher adjusted total hospitalization costs compared with patients without H. pylori (adjusted mean difference: $6128, 95% CI: $1141–$11115, p = 0.01).

Conclusion: Presence of Helicobacter pylori has no impact on inpatient mortality among patients with liver cirrhosis and hepatic encephalopathy. In addition, the presence of Helicobacter pylori is not associated with any increase in resource utilization among this patient population, with the exception of total hospitalization costs. It is surprising to note that, although total hospitalization costs differed between the two groups, they received the same total hospitalization charges from admitting hospitals.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0595 RANDOMIZED CONTROLLED STUDY OF A NOVEL TRIPLE NITAZOXANIDE (NTZ) CONTAINING THERAPEUTIC REGIMEN VERSUS THE TRADITIONAL REGIMEN FOR ERADICATION OF HELICOBACTER PYLORI INFECTION

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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. Overall success (94.6%) of 118 patients who completed the study in group 1 showed complete cure while only 63 cases (60.6%) of 104 patients who completed the study in group 2 showed the same response according to per-protocol (PP) analysis (p = 0.001). 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: NCT02422706)

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

References


P0596 PREVIOUS INTAKE OF MACROLIDES PREDICTS FAILURE TO ERADICATE HELICOBACTER PYLORI WITH CLARITHROMYCIN-CONTAINING REGIMENS

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Introduction: There is some evidence that previous 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 the eradication rates obtained with first-line clarithromycin-containing regimens on our health area. Patients were randomly assigned to one of two regimens: A:Triple therapy (PPI, amoxicillin, clarithromycin, optimized with a double dose of PPI) for 10 days; and B:Concomitant therapy (PPI, amoxicillin, clarithromycin, and metronidazole administered concurrently) for 10 days. The eradication was evaluated by the Stool antigen test or with the Urease test in patients those patients with a gastroscopy performed after the treatment. A total of 113 patients in the group A (58 women; Median age: 54 years; Range: 21–79) and 106 patients in the group B (56 women; Median age: 49 years; Range: 18–81) 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.

Results: 89/219 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></th>
<th>Previous use of Macrolides</th>
<th>No previous use of Macrolides</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Triple therapy (n = 113)</td>
<td>24/45 (53, 3%)</td>
<td>65/68 (95, 5%)</td>
<td>&lt;0, 0001</td>
</tr>
<tr>
<td>B: Concomitant (n = 106)</td>
<td>37/44 (84, 1%)</td>
<td>61/62 (98, 4%)</td>
<td>0, 0085</td>
</tr>
<tr>
<td>Total (n = 219)</td>
<td>61/89 (68, 5%)</td>
<td>126/130 (96, 9%)</td>
<td>&lt;0, 0001</td>
</tr>
</tbody>
</table>

Conclusion: Previous use of macrolide antibiotics predicts a low response to triple 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


P0597 EFFICACY OF THREE-IN-ONE CAPSULE BISMUTH QUADRUPLE THERAPY FOR HELICOBACTER PYLORI ERADICATION IN CLINICAL PRACTICE IN A MULTINATIONAL PATIENT POPULATION

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Introduction: Due to increasing prevalences of clarithromycin resistance in H. pylori infection, current guidelines recommend quadruple therapies as first-line therapy1–3. Bismuth quadruple therapy (BQT) has been proven superior to standard triple therapy in clinical trials4, 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 (Pylarer® + 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 completion 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 including Southern-/Eastern Europe, Eurasia/ Central Asia, Southwest-Asia, Africa, and Central/South America. PCR results were available in 163 patients (50.6%) and identified resistance to clarithromycin and levofloxacin in 29 (17, 8%) and 20 (12, 3%) of cases, respectively. BQT was administered as firstline, secondline and rescue treatment in 74%, 17% and 9% of cases, respectively. 5 patients discontinued treatment prematurely due to side effects (1, 8%) and 43 patients were lost to follow-up (13, 4%). By modified intention-to-treat and per-protocol analysis the H. pylori eradication rates were 94, 9% (95% CI: 92, 1–97, 5%) and 96, 7% (95% CI: 94, 4–98, 8%), respectively. The low number of treatment failures (n = 9) did not allow to identify risk factors for failure.

Conclusion: Three-in-one capsule bismuth quadruple therapy is highly effective and safe for treatment of H. pylori infection in clinical routine practice, irrespective of the patient’s migrational background or the number of previous treatment failures.

Disclosure of Interest: S. Miehlke: Speakers honoraria: Allergan, Kibion, Olympus

All other authors have declared no conflicts of interest.

References

Introduction: Background: Eradication of Helicobacter pylori (H. pylori) infection represents a clinical challenge. The current requirements demand eradication rates above 90%, which has made that the use of triple treatment including clarithromycin or metronidazole had been give 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 125 mg, and tetracycline 125 mg, three capsules four times daily, and esomeprazole 40mg twice daily and probiotic during 30 days. The primary endpoint was H. pylori eradication rate. The H. pylori infection was based on the 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 for 13 years (311, esomeprazole 388 days), which excluded patients who did not complete the study or who had previous protocol violations, were also conducted to confirm the ITT results.

Conclusion: 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) [44.0 to 50.2] years. Twenty-five (25.0%) patients had a prior history of using medications to treat H. pylori eradication, 75 (75.0%) patients had an allergy or intolerance to clarithromycin, amoxicillin, and PPI. In the ITT population, the eradication rates were the 90.7% (68/75) and the 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% (66/67) 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.

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

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 and 400 mg omeprazole) in a Spanish hospital (Hospital Zarzuela, Madrid/Spain) between June 2015 and October 2016. The patients were randomly assigned to receive 7-day P-CAB therapy (vonoprazan 20 mg twice daily, n = 498) were compared with those who received 7-day PPI therapy (lansoprazole 30 mg/day, n = 216, rabeprazole 20 mg/day, n = 138). The primary endpoint was the cure rate, defined as one negative urea breath test performed, at least 28 days, after the end of treatment. Intent-to-treat (ITT) and per-protocol (PP) compliance and adverse events were also assessed for each study group.

Results: ITT and PP analysis of the first-line H. pylori eradication for vonoprazan, lansoprazole, rabeprazole, and esomeprazole were 75.5% (132/175), 63.9% (70/111), 68.0% (79/115), and 63.2% (78/123), respectively. The vonoprazan eradication rates were significantly higher than those of these PPIs (P < 0.05), respectively. There was no significant difference in the adverse events between the two therapies.

Conclusion: 7-day first-line triple therapy is more effective than 7-day PPI based triple therapy as a first-line H. pylori eradication without differences in tolerability.

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

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-years follow-up, with a random sample of the general population from the county of Funen, Denmark. 20,011 individuals aged 40 years and over were invited to participate in the study, with a response rate of 88.7% (17,607). The primary endpoint was the rate of Hp infection when combined with 400 or 800 mg/day clarithromycin (CAM).

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

Introduction: Vonoprazan (VPZ) is a novel, orally bioavailable, potassium-competitive acid blocker and PPI for the treatment and prevention of acid-related gastrointestinal diseases. A Phase III study revealed that VPZ is superior to lansoprazole as part of first-line therapy for Helicobacter pylori (HP) infection when combined with 400 or 800 mg/day clarithromycin (CAM).
the patients with low eGFR, 65.3% [34/53] in the patients with high eGFR [P = 0.034], or 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/scars. 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 400mg/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 triple therapy to identify the optimal breakpoint of amoxicillin resistance.

Introduction:

All authors have declared no conflicts of interest.

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P0604 ASSOCIATION BETWEEN GASTRIC ADENOCARCINOMA OF THE FUNDIC GLAND TYPE AND H. PYLORI INFECTION

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Introduction: Gastric adenocarcinoma of fundic gland type (GAFG) is gastric adenocarcinoma with low-grade atypia occurring in the mucosa of the fundic gland without atrophy, and is recognized that it is not related to H. pylori (Hp) infection. However, GAFG is also found in Hp-infected and past Hp-infected patients as well as in Hp-uninfected patients. It is not often clear the relationship between the progress of GAFG and Hp infection.

Aims & Methods: Ten lesions of GAFG resected endoscopically or surgically in our hospital from December 2010 to October 2016 were classified as Hp-uninfected (n = 3) and past Hp-infected (n = 7). Each endoscopic and clinicopathological features were examined.

Results: Median age of Hp-infected/past Hp-infected/Hp-uninfected were 65/71/54.5 years old, respectively, male ratio was 100/80/0%, occupied site U area infection was not clear. In Hp-uninfected group/past Hp-infected group/Hp-uninfected group (submucosal invasion was found at 80/100/0%, p = 0.035).

According to endoscopic features, background mucosa of gastric fundus gland mucosa without atrophic change was found in 100/100/0%, whitish color in 67/60/50%, submucosal tumor shape in 67/60/60%, dilated vessels with branching architecture in 100/100/50%. The association with Hp infection was not clear. In immunohistochemical staining, MUC6 positive/mucin-1 positive, MUC6 positive, Pepsinogen I positive, MUC2 negative, CD 10 negative in all cases, whereas the rate of MUC5AC positive was significantly higher in the Hp-uninfected group as 0.2/100% (P = 0.045). We reported that black pigmentation is recognized in GAFG (stomach and intestine 50:1521–1531, 2015), but no association between Hp infection and black pigmentation was observed. On the other hand, the rate of PPI administration divided pigmentation (n = 6)/no pigmentation (n = 4) are 50/0%, and it is suggested that the pigmentation in GAFG may relate with PPI (p = 0.091).
Celiac disease (CD) is a life-long autoimmune disease affecting the small bowel of CD patients, and to look for a possible association between mucin profile and gluten-free diet (GFD). It’s now considered as multisystem disorder. A recent study by Zhu et al. [1] has highlighted the importance of mucin expression in the small bowel of CD patients, and its role in the pathogenesis of the disease.

**Materials and Methods:**

This study aimed to assess the current knowledge about mucin expression in the small bowel of CD patients, and to look for a possible association between mucin profile and gluten-free diet (GFD). The evolution of liver disorders after GFD was assessed. The chronic liver disease was often decompensated and the hepatic signs for cirrhosis were in the foreground masking the response to GFD.

**Conclusion:**

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 obvious cause in the clinical setting.

**Disclosure of Interest:**

All authors have declared no conflicts of interest.

**Reference**

Aims & Methods: In this study we investigated the TLRs 2, 4, 7, 9 genes expression in the 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 TLR9 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 data supports the implication of innate immune system in the pathomechanism of celiac disease.

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

References
P0612 FUNCTIONAL DYSPEPSIA SYMPTOMS ARE STRONGLY ASSOCIATED WITH COELIAC DISEASE: RESULTS FROM A POPULATION-BASED STUDY

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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 ¼ 51%). This study evaluated CD patients (n=376) and non-affected cohort (n=3449) and the self report of GI symptoms.

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, distension, epigastric burning and early satiety (see Table). There was no significant difference observed in symptoms of post-prandial fullness, nausea, constipation, 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 1.9–3.7, 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” (**) self report of CD self report of CD - No p value

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Abdominal pain associated with loose bowel motions **</th>
<th>More bowel motions associated with pain **</th>
<th>Bloating *</th>
<th>Distension *</th>
<th>Abdominal pain *</th>
<th>&gt;3 bowel motions per day **</th>
<th>Epigastric burning *</th>
<th>Early satiety *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16/37 (43.2%)</td>
<td>13/38 (34.2%)</td>
<td>13/40 (32.5%)</td>
<td>12/40 (30%)</td>
<td>9/39 (23.1%)</td>
<td>7/40 (17.5%)</td>
<td>8/40 (20%)</td>
<td>8/40 (20%)</td>
</tr>
<tr>
<td></td>
<td>600/3234 18.6%</td>
<td>504/3248 15.5%</td>
<td>436/3381 12.9%</td>
<td>395/3371 11.7%</td>
<td>362/3378 10.7%</td>
<td>740/17 15.5%</td>
<td>165/3380 4.9%</td>
<td>230/3378 6.8%</td>
</tr>
<tr>
<td></td>
<td>** P &lt; 0.001</td>
<td>** P &lt; 0.002</td>
<td>P &lt; 0.001</td>
<td>** P &lt; 0.001</td>
<td>P &lt; 0.014</td>
<td>P &lt; 0.046</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
</tr>
</tbody>
</table>

Conclusion: The prevalence of gastrointestinal symptoms and in particular functional dyspepsia are significantly higher in patients with a doctor diagnosis of CD than unaffected population. Studies using self 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 DIAGNOSES OF COELIAC DISEASE

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Introduction: Osteoporosis is a systemic skeletal disorder characterized by low bone mass 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 (osteopenia 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 years), had atrrophic 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 years). On the basis of DEXA results (codified 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 associated to CD and their duration before diagnosis, autoimmune/non-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 ≥60 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

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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 18–100 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 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% (95/950) of these subjects had received a doctor diagnostic of symptom-related wheat intolerance (SRWS) 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 predominant diarrhea (54.8%), bloating (37.6%) and abdominal distention (30.8%). In a multivariate analysis, a diagnosis or SRWS was significantly associated with irritable bowel syndrome (IBS) and functional dyspepsia syndrome (30.8%).

Conclusion: The prevalence of irritable bowel syndrome (IBS) and functional dyspepsia syndrome (FD) is high in this cohort. SRWS may be one of the causes of functional bowel disease in people who report wheat avoidance symptoms.

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

References
as celecoxib. 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 an abnormal small intestine. The presence of co-morbid systemic disorders 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 distension, 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-2 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 (74.89 ± 5.02 mmol/l) than fasting values (45.34 ± 10.08 mmol/l, p < 0.05). No significant differences were detected in IL-6, glucose, insulin and LPS after the ingestion of the 20 gr gluten oral load. Symptoms were absent after both oral loads.

Conclusion: The ingestion of 2.g. but 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.

Monday, October 30, 2017 09:00-17:00

Nutrition I - Hall 7

P0620 Therapeutic Action of KETOCENIC ENTERAL NUTRITION in OBESE and OVERWEIGHT PATIENTS: A RETROSPECTIVE INTERVENTIONAL STUDY

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Introduction: Ketogenic Enteral Nutrition (KENTM) is a modification of Blackburn’s protein-sparing modified fast, using a hypocaloric, ketogenic liquid diet. The study is about Ketogenic enteral nutrition (KENT) in overweight and obesity at treatment of the metabolic syndrome and the influence of nocturnal hour infusion. It is a retrospective analysis that examines safety, weight loss and body composition changes after three sequential 10-d cycles of KENT therapy.

Aims & Methods: Anthropometric and bio-impedance data from 629 patients were obtained before and after the complete KENT cycle. The study focuses on the change in outcomes from the first cycle to the second cycle and from the first cycle to the third cycle. The following outcomes were evaluated: weight, waist circumference, BMI, fat mass, lean mass, phase angle, wellness marker, water mass as a percentage of total body weight. The cycle 1, 2 and 3 outcomes were analyzed using descriptive statistics (mean, standard deviation, n) summarizing the outcome at each cycle. Statistical tests were used to test for significance between paired cycle 1 and cycle 2 outcomes and also between paired cycle 1 and cycle 3 outcomes. For normally distributed outcomes, the paired t-test was used. Whereas for skewed outcomes, the Wilcoxon signed-ranks test was used. Scatter plots were used to plot percentage of weight loss against phase angle. The Pearson’s correlation coefficient was calculated. Regression analysis for the outcome percent change in weight from cycle 1 to cycle 2 for phase angle and basal metabolic rate (BMR)/Weight ratio as predictors was carried out.

Results: The results suggested significant changes for all analyzed parameters. There were significant decreases in weight, waist circumference, BMI, fat mass, lean mass, dry lean mass and phase angle. Quantitative changes in lean mass and lean mass were negligible with respect to changes in fat mass. There was also a statistically significant increase in water mass as a % of total body weight and wellness marker from cycle 1 to cycle 3. The Pearson’s correlation coefficients r = 0.18, p = 0.004 and r = 22, p = 0.04 indicated changes in cycle 1 and cycle 3 in percentage of weight excess to be significantly, positively correlated to phase angle and BMR/Weight. The Pearson’s correlation coefficient was calculated. Regression analysis for the outcome percent change in weight from cycle 1 to cycle 2 for phase angle and basal metabolic rate (BMR)/Weight ratio as predictors was carried out.

Conclusion: KEN treatment is safe, well tolerated and results in rapid fat loss without detriment to dry lean mass.

Disclosure of Interest: All authors have declared no conflicts of interest.
Mean weight regain was 4 kg during this period. Most patients (62%) regained weight control after IGB removal: lack of psychological support and nutrition counseling were two 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 regained was 4 kg during this period. Most patients (62%) regained 10% to 19% of weight lost during treatment. The mean weight regained increased during follow-up, but without significant difference among groups: 2 years [n = 10]: 4.06 ± 4.91 kg; 3 years [n = 83]: 8.66 ± 8.96 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 HMI at the beginning of the 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 = -0.31, p < 0.001) followed by those in whom balloon withdrawal was undertaken four years before (r = -0.23, p = 0.03). Weight regain group contained more individuals who did not perform psychological and nutritional follow-up and who were also sedentary, during and after treatment. Each year, after removal of IGB, the chance of regaining weight increased 1.5 times. No follow-up with a nutritionist after the procedure increased chance of weight regain in 1.8 times. Lack of follow-up with a psychologist during treatment had a weight regain 1.9 times increased. Multivariate logistic analysis determined risk factors for weight regain according to time span after IGB removal. After 2 years of balloon removal, the significant risk factor was lack of follow-up with a psychologist during treatment; increasing the chance of weight regain 1.13 times compared with those subjects that received psychological counseling. An independent significant risk factor for weight regain after 3 years of IGB removal was the lack of follow-up with a nutritionist after the use of IGB. Chance of weight regain was 3.36 times higher in this group than in patients who did the nutritional follow-up. After 4 years of IGB removal, sedentary behavior was an independent and significant risk factor, increasing the chance of weight regain 3.86 times compared with physically active behavior.

Details of dystrophy, inflammation and necrosis and reduction of the NASH incidence. visceral obesity. In male rats, there were more pronounced changes. It was established that under condition of obesity caused by the introduction of MSG, the level of adiponectin in serum decreased but leptin in VAT was increased. S significantly improvement lipid profiles and histological state of liver: decrease of dystrophy, inflammation and necrosis and reduction of the NASH incidence.
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.

P0624 IMPROVED EMPLOYMENT OF INTRAGASTRIC BALLOON FOR WEIGHT LOSS: A PRELIMINARY ANALYSIS
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Introduction: Endoscopic bariatric approaches are gaining traction as possible treatment modalities for obesity. Especially, intragastric balloon was demonstrated to be associated with a significant weight loss in obese patients. Despite many advances in the design and material of intragastric balloon devices, there still remains a need for improved devices which is safer, faster, and less expensive than before. In the present study, we evaluated feasibility of newly developed intragastric balloon.

Aims & Methods: We used a newly developed intragastric balloon with improved employment for this study. The intragastric balloon was supplied as delicately rolled up inside a thin silicon sheath and mounted by surrounding the endoscope. Endoscopic intragastric balloon placement and positioning was simply performed; a total of 10 pigs were submitted to the novel intragastric balloon placement. We evaluated feasibility of the intragastric balloon and compared procedure time between the novel intragastric balloon and End-ball (Endalis, Brignais, France) intragastric balloon.

Results: In all cases, the novel intragastric balloons were successfully placed under usual sedation of diagnostic endoscopy. The procedures were simple and fast; the mean insertion time was 41.3.12.4 and 153.8 sec in novel intragastric balloon group and end ball group, respectively. The mean inflation time was 412.4±2.12.3 sec in novel intragastric balloon group and end ball group, respectively.

Conclusion: This preliminary data suggest that the procedure with the new intragastric balloon attain technical improvements in the placement without severe adverse events. The new intragastric balloon could offer constantly effective procedure regardless of the ability of the endoscope practitioner.

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

References

P0625 IS RE-IMPLANTATION OF THE DUODENAL-JEJUNAL BYPASS LINER Viable?
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Introduction: The endoscopically implanted DJBL is a 60cm long, impermeable fluoropolymer device which prevents food from making contact with the proximal intestine, thus inducing considerable weight loss and improvement of type 2 diabetes mellitus (T2DM). Both weight and HbA1c levels have been reported to decrease with implantation; however, weight and HbA1c levels decreased one month after re-implantation procedure regardless of the ability of the endoscope practitioner.

Aims & Methods: The aim of this study was to investigate the safety, feasibility and effectiveness of DJBL re-implantation in patients who show a relapse in glucose levels after DJBL explantation. This prospective, observational study was conducted at the Department of Gastroenterology of DGD Clinics Sachsenhausen, Frankfurt (Germany) between 2014 and 2016. Five obese patients was 18 years of age and with a body mass index (BMI) ranging from 35–59 kg/m², who completed follow-up after their first implant and underwent removal of the DJBL after 12 months, were selected for re-implantation after an additional 4 months of follow-up. Weight loss, BMI, and HbA1c were analysed before reimplantation and twelve months thereafter.

Results: In 5 patients, the DJBL was initially implanted and explanted without complications. Re-implantation and re-implantation were also performed without complications. Changes in body weight, BMI and glycaated haemoglobin (HbA1c) are shown in Table 1.

Table 1: Body weight, BMI and HbA1c changes at different timepoints
Table 2:

<table>
<thead>
<tr>
<th>Timepoint (months)</th>
<th>Mean weight (kg) ±SD</th>
<th>Mean BMI (±SD)</th>
<th>Mean HbA1c (±SD)</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; 24.6–51.2)</td>
<td>7.6 (0.8; 6.6–8.3)</td>
</tr>
<tr>
<td>12</td>
<td>95.0 (38.8; 72–164)</td>
<td>33.5 (9.0; 29.4–59.5)</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 (7.9; 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; 23.4–48.6)</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 one month after re-implantation.

Disclosure of Interest: J. Stein; Jürgen 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
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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 modifications 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. The relative effectiveness of 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 MICRONORNA AND INFLUENCE ON THE FECAL MICRONORNA EXPRESSION
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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 that inhibit translation by binding to the 3’ untranslated region of mRNAs and cause degradation of the target messenger RNA. MicroRNAs (miRNAs) are functional, ubiquitously present molecules that inhibit translation by binding to the 3’ untranslated region of mRNAs and cause degradation of the target messenger RNA. In the present work, we evaluated whether miRNAs are present in various foods, and if miRNAs may be degraded during 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.
P0628 NEUROMEDIN U BLOCS GASTRIC EMPTYING THROUGH VAGAL-DEPENDENT MECHANISMS AND IMPROVES ORAL GLUCOSE TOLERANCE

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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 it exerts an incretin-like action. 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 “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. Single laparotomy or a transduodenal laparoscopic pyloromyotomy were performed during OGTT. Blood was sampled to measure insulin secretion. [14]C-glucone 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 immuno-staining on brainstem slides going through the nucleus of the solitary tract (NTS) and the dorsal nucleus of the vagus (DMV). Direct impact of NMU on pyloric emptying was evaluated by isometric chambers. NMU directly induced pyloric contraction in a dose dependent manner (basal contraction +21%, 7% at 0.6-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 IRREVERSIBLE BOWEL DISEASE SYMPTOMS: A RANDOMISED CONTROLLED TRIAL


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Introduction: Dietary restraint causes the low FODMAP diet (LFD) to be 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 if 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. 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 H-NMR), stool SCFA (gas liquid chro- matography (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 discriminant 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). Individual 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 (51.4 mg/100g) and non-responders (31.9 mg/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), however 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 robust tools for responsive 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).

Disclosure of Interest: B. Wilson: BW is funded by a PhD studentship provided by Clasado Biosciences

All other authors have declared no conflicts of interest.

P0630 THE ANALYSIS OF PROTEIN CONSUMPTION PATTERNS IN PATIENTS WITH SIBO

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Introduction: Small intestinal bacterial overgrowth (SIBO) is common in patients with gastrointestinal diseases. SIBO symptoms are improved with antimicrobial treatment, but recurrence rate is high (approximately 40% for 9 months). Dietary modification is essential for prevention of recurrence of SIBO however there are no detailed studies of nutrition in SIBO patients. Protein consumption is considered of importance for personalised therapy for patients with IBS.

Aims & Methods: The aim of the study was to assess the protein consumption patterns in patients with SIBO. Three-day food diary was collected from 574 patients, undergoing CH4/H2 lactulose breath test. The photographs used to estimate the size of the portions eaten. According to food product by food groups. Each food group were compared with the normal levels.

Results: All types of SIBO patients consumed less meat than control (no signs of SIBO), however patients with hyperproduction of CH4 only demonstrated highest consumption of fish, and it was a trend in patients with isolated H2-hyperproduction of fish to consume more fish than other groups. There were no differences between groups in consumption of processed meat foods or eggs.

Conclusion: There are specific animal protein consumption patterns related to the type of the SIBO, which can be used for the planning of dietetic interventions in patients for prevention of SIBO recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.
OF FOODS HIGH IN SHORT-CHAIN CARBOHYDRATES, DAILY PRODUCTS, WHEAT, SPICES ETC.

Although some studies indicate increased rectal sensitivity after duodenal lipid administration in patients with IBS and suggest delayed transit after high fat intake, the effects of dietary supplementation with different types of fatty acids in IBS have not been explored so far.

Aims & Methods: The aim of the study was to evaluate the differences in GI motor function and visceral sensitivity in rats exposed to diet supplemented with either medium-chain (MCFAs) or long-chain fatty acids (LCFAs). Male Wistar rats were fed with control diet (A), and diet supplemented with 3.5% coconut oil (B) (abundant with MCFAs) or 3.5% evening primrose oil (C) (abundant with LCFAs) for 4 weeks. The effects of each diet on GI motility were measured radiographically after contrast administration (p.o; X-rays were taken 0–8h before and after feeding, on day 0 and day 28, respectively), and by performing the colon bead expulsion test. Temporal changes in the size of the stomach and caecum of each rat were analyzed based on digitalized X-rays, using an image processor. Visceral sensitivity was assessed with abdominal withdrawal reflex to colorectal distension. Body weight gain and food/water consumption were measured throughout the experiment.

Results: Diet supplementation in neither group B nor group C affected the GI motor function in comparison to control group (A). The number of contractions and the mean time of each contraction in response to colorectal distension measured during each 5min for 40min were higher in the control group (A), when compared to either B or C groups but the differences were not statistically significant. No changes in morphometric measurements of stomach and caecum, the body weight gain and food/water consumption were found.

Conclusion: Diets differing in MCFAs or LCFAs contents did not induce marked effects on GI motility and visceral pain in rats. Available data and the results obtained herein suggest that the amount of FAs intake, rather than the types of FAs may provoke IBS symptoms.

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

References


P0631 LOW FDOMAP DIET IMPROVES SYMPTOMS AND QUALITY OF LIFE IN PATIENTS WITH RADIATION-INDUCED SMALL BOWEL DISEASE: A PILOT STUDY
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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 pathologic 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 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 (feal 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 ± 60.7 to 171.4 ± 107.2 (p = 0.001) and 27.4 ± 4.1 to 15.7 ± 10.1 (p = 0.002), respectively. The severity of abdominal pain, abdominal distension, belching/flatusulence, 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 ± 9.1 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.

P0632 DIET SUPPLEMENTED WITH MEDIUM- AND LONG-CHAIN FATTY ACIDS DOES NOT AFFECT LOWER GI MOTILITY AND VISCERAL PAIN IN RATS
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Introduction: Dietary interventions are gaining popularity in terms of alleviating symptoms experienced by patients with functional GI disorders (FGID), especially with irritable bowel syndrome (IBS). Available strategies rely on low intake of foods high in short-chained carbohydrates, daily products, wheat, spices etc. Although some studies indicate increased rectal sensitivity after duodenal lipid administration in patients with IBS and suggest delayed transit after high fat intake, the effects of dietary supplementation with different types of fatty acids in IBS have not been explored so far.

Aims & Methods: The aim of the study was to evaluate the differences in GI motor function and visceral sensitivity in rats exposed to diet supplemented with either medium-chain (MCFAs) or long-chain fatty acids (LCFAs). Male Wistar rats were fed with control diet (A), and diet supplemented with 3.5% coconut oil (B) (abundant with MCFAs) or 3.5% evening primrose oil (C) (abundant with LCFAs) for 4 weeks. The effects of each diet on GI motility were measured radiographically after contrast administration (p.o; X-rays were taken 0–8h before and after feeding, on day 0 and day 28, respectively), and by performing the colon bead expulsion test. Temporal changes in the size of the stomach and caecum of each rat were analyzed based on digitalized X-rays, using an image processor. Visceral sensitivity was assessed with abdominal withdrawal reflex to colorectal distension. Body weight gain and food/water consumption were measured throughout the experiment.

Results: Diet supplementation in neither group B nor group C affected the GI motor function in comparison to control group (A). The number of contractions and the mean time of each contraction in response to colorectal distension measured during each 5min for 40min were higher in the control group (A), when compared to either B or C groups but the differences were not statistically significant. No changes in morphometric measurements of stomach and caecum, the body weight gain and food/water consumption were found.

Conclusion: Diets differing in MCFAs or LCFAs contents did not induce marked effects on GI motility and visceral pain in rats. Available data and the results obtained herein suggest that the amount of FAs intake, rather than the types of FAs may provoke IBS symptoms.

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

Table 1: Consumption of protein products in SIBO patients.
is similar to the oral glucose-stimulated secretion of glucagon-like peptide 1 (GLP-1). GLP-1 is an enteroendocrine L cells (EEC) from the distal gut. GLP-1 and glucagon, both originate from the same proglucagon precursor, differentially processed by prohormone convertase 2 (PC2) into glucagon in pancreatic a cells and by prohormone convertase 1/3 (PC1/3) into proglucagon.

Aims & Methods: We hypothesized that, after pancreatectomy, proglucagon can also be processed into glucagon in EEC. We developed a 75% subtotal pancreatectomy model in C57Bl6 mice. Control (Ct) mice underwent a laparotomy. Post-surgery blood glucose was measured. a cell alpha- and a cell glucagon/insulin mass quantification. Proximal and distal intestinal segments were sampled for morphometric analyses as well as measurement of proconvertase and proglucagon mRNA levels. Colonic segments were incubated in a glucose-enriched medium for one hour and glucose-induced secretions of glucagon and GLP-1 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 P mice vs 140 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 >279% in P mice, P < 0.01 vs Ct mice, 1 week post-surgery). During OGTT, intestinal glucose absorption occurred (slope between 0 and 15 min=+69.9% in P mice, P < 0.01). A 1 week post-surgery, glucagonemia increased in fasted pancreatectomized mice (+16.6% in P mice vs P = 0.01 vs Ct mice 1 week post-surgery). After sacrifice, alpha cell mass was decreased in the remaining pancreas (~79.25% in P mice P < 0.05 vs Ct mice, 2 weeks post-surgery). Hypoplasia of the proximal colon to secretes glucagons and GLP1 was observed (+290.6% in P mice P = 0.05 vs Ct mice, 2 weeks post-surgery). In pancreatectomized mice, an hypertrophy of the duodenum was associated with an increase in crypt depth (+77.7%, in P mice P < 0.05 vs control, mice 2 weeks post-surgery) and villus height (+53.3% in P 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 maintain an increased intestinal mass response to a absolute 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.

References


References

P0636 COMPLICATIONS AND EARLY MORTALITY IN PERCUTANEOUS ENDOSCOPIC GASTROSTOMY PLACEMENT IN LOMBARDY: A MULTICENTER PROSPECTIVE STUDY
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Introduction: Percutaneous endoscopic gastrostomy placement (PEG) is currently the method of choice for medium- and long-term enteral feeding and is nowadays one of the most common endoscopic procedures performed worldwide. To date, data on complications and mortality rates are generally retrospective and only few prospective studies have been published on small number of patients.

Aim: To establish the overall mortality of patients after PEG insertion or PEG replacement. This is a few prospective studies have been published on small number of patients.

Endoscopic procedure was necessary in 9.7% of cases. The informed consent buried bumper syndrome (0.2%). PEG replacement was carried out in 330 patients. Indications were: dysphagia for cerebrovascular diseases in 64% of patients. Indications were: dysphagia for cerebrovascular diseases in 64% of patients. Indications were: dysphagia for cerebrovascular diseases in 64% of patients. Indications were: dysphagia for cerebrovascular diseases in 64% of patients. Indications were: dysphagia for cerebrovascular diseases in 64% of patients.

Results:
- Thirty-days mortality was 2.4%. Thirty-days mortality was 2.4%. Thirty-days mortality was 2.4%.
- Conclusion: Our data confirm that PEG placement is a safe procedure with a mortality rate at 30 days of 8%. To our knowledge this is the largest prospective study on the use of PEG. Surprisingly in more than 50% of patients the consent form was not properly signed, leading to possible medicolegal consequences. Moreover, in 9/10 of the cases PEG was placed for an early discharge (more than for clinical indication).

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

P0637 MEDICAL REGISTRAR REPORTING OF CHEST X-RAYS FOR NASOGASTRIC TUBE POSITION: HOW CAN IT BE MADE SAFER?
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Introduction: Nasogastric tube (NG) feeding is an essential part of in-patient care. Tubes can be placed at the bedside with no need for specific equipment or sedation. However placement of NG tubes is not without risk and avoiding the introduction of substances into the respiratory tract through a misplaced NG tube was highlighted as a UK National Patient Safety Agency alert in 2005. In 2011 the NPSA made this a ‘never event’. The only acceptable methods of checking the position of an NG tube are: pH < 5.3 on aspirate or confirmation from chest x-ray (CXR) by competent medical staff. Reporting a CXR for NG tube position is a frequent request particularly for junior doctors out of hours. Practise 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 a 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 a CXR showing an incorrectly sited NG tube and asked to use the sticker to assess 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 tube should not be used.

Conclusion: Use of the sticker increased compliance with NPSA guidance for CXR reporting of 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 statements exactly prompting further review by radiology or removal of the tube. Overall this increases patient safety and avoids use of a misplaced tube in accordance with the NPSA guidance. We suggest the aide-memoir sticker on all wards which use NG tubes to rapidly improve documentation and patient safety. The other option we may consider is developing a pathway for radiology consultants to report all these CXRs before the NG tube is used; this is likely to take considerable time and is unlikely to be available out of hours.

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

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Checking placement of nasogastric feeding tubes in adults (interpretation of x ray images): summary of a safety report from the National Patient Safety Agency *BMJ* 2011;342:d2586
administrative error and has now been seen with micronutrients requested. Two micronutrients checked had them done within the last six months. 6 patients had only recently so did not have results within a year). 32 (61.5%) of those who had of 49 (89.7%) had micronutrients checked within one year (two of the 51 had 57 home parenteral nutrition patients were identified. 51 (89.5%) of

Results: system then the local hospital was contacted for local results if available. 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 parenteral 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 over 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 reviewed within a 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.

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MONDAY, OCTOBER 30, 2017 09:00-17:00
PAEDIATRIC: UPPER GI - HALL 7
P060/1 OUTCOMES OF PER-ORAL ENDOSCOPIC MYOTOMY IN CHILDREN WITH ACHALASIA CARDIA
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Introduction: Per-oral endoscopic myotomy (POEM) is a novel treatment modality for achalasia cardia (AC). The studies are limited in paediatric population.

Aims & Methods: In this study our aim was to analyse the feasibility, safety and efficacy of per-or endoscopic myotomy in children We retrospectively evalu- ated the data of all children (<18 years) who underwent POEM at our institution from September 2013 to February 2017. All POEM procedures were performed under general anaesthesia in an endoscopy suit. Technical feasibility, safety and efficacy were analysed. Clinical success was defined as Eckardt score ≤ 3. Objective parasternal ineluding-time barium swallow and high resolution manometry were assessed and compared before and after POEM.

Results: Thirty children (15-boys, 15-girls) with mean age of 14.1 ± 3.22 (4–18 years), underwent POEM during the specified period. The sub-types of AC were type I (6), type II (19) and type III (1). Eight children had prior treatment with pneumatic balloon dilatation. POEM was successfully performed in all children. Anterior myotomy was performed in majority of children 23 (76.7%). Mean total length of myotomy was 10.9 ± 2.25 cm, with 7.9 ± 2.09 cm on esophageal and
T. Shahinyan
RESISTANCE IN ARMENIAN CHILDREN WITH H. pylori-associated gastroduodenal disease (GDD)

Introduction: The aim of this study is to estimate the role co-infection of H. pylori and its highly pathogenic strains in the gastric mucosa of children. The infection from HP inhibits another microbiota and it is accompanied with the amount of HP.

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P0641 HIGH RATE OF HELICOBACTER PYLORI ANTIBIOTIC RESISTANCE IN ARMENIAN CHILDREN WITH GASTRODUODENAL DISEASE

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Introduction: Because of high prevalence of gastric malignancies in the adult population, high H. pylori pylori (Hp) prevalence in Armenia is suspected. Resistance to Hp antibiotic 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 8.9±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. Antibiotic susceptibility of the Hp strains obtained from children living in Europe. Koletzko S et al. Gut 2012;61:17–25.

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 Hp-associated GDD were diagnosed in 40 patients out of 47: 37 (92.5%) cultured on 5% sheep blood Columbia agar and selective Hp media. Antibiotic susceptibility of the Hp strains obtained from children living in Europe. Koletzko S et al. Gut 2012;61:17–25.

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References


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P0642 GASTRIC MICROBIOTA OF CHILDREN WITH CHRONIC GASTRITIS

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Introduction: Children’s gastric microbiota in the presence or absence of H. pylori (HP) has not been studied well.

Aims & Methods: We aim 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 AMA 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 Actinobacteria, 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 diversity 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 patients with HP presence was 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.

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Recent Insights into Antibiotic Resistance in Helicobacter pylori Eradication. Gastroenterology Research and Practice, Volume 2012, Article ID 723183, 8 pages

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P0643 FEATURES OF CHRONIC GASTRITIS CAUSED BY CO-INFECTION OF HELICOBACTER PYLORI AND EBSTEIN-BARR VIRUS IN PEDIATRIC PATIENTS

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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 severe gastritis and patients with co-infection (highly pathogenic strains of Hp + VE-B).

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-biding 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 pathogenic strains of Hp + VE-B). 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. The infection from HP inhibits another microbiota and it is accompanied with the amount of HP.

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

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Aims & Methods: To assess the relationship between H pylori infection and specific immunoglobulin E (Ig E) antibodies to food allergens in children. We conducted a prospective study of 394 symptomatic children (249 girls, age range 6 months-18 years), mostly with uninvestigated dyspepsia requiring an endoscopic evaluation 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 allergy sensitization was at least one of the food allergens was identified in 134 of 394 patients (34%). The majority of Ig E positive children (109 of 134; 81.3%) were positive for cow’s milk followed by egg (17.9%), wheat (7.46%), peanut (4.5%), soybean (3.73%). The allergic sensitization to food allergens was associated with abnormal levels of specific Ig E antibodies to common inhalatory allergens in 55 of 134 cases (41.04%). Regarding the association of H pylori infection with an elevated serum Ig E level to at least one of the food allergens tested, there was a significant positive correlation (p = 0.14, 77 of 134 (51.30%) patients positive for food specific Ig E antibodies were H pylori infected and 57 of them (38.55%) 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 revealed any statistically significant correlation with the two ends 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 Ig E 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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P0645 CURRENT STATUS OF THE FIRST AND SECOND LINE THERAPY FOR HELICOBACTER PYLORI INFECTION IN SYMPTOMATIC CHILDREN: A SINGLE CENTER STUDY

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Introduction: Current evidence suggests the decline of the eradication rates of H pylori in children treated with standard first line therapy, partly determined by its antibiotic resistance.

Aims & Methods: To evaluate the effectiveness of current first and second-line therapy for H pylori eradication in children. We conducted a prospective open-label study of 158 symptomatic children (age range 6 months-18 years; 106 girls) who required a first upper digestive endoscopy over the past year. Active H pylori infection was documented in 122 of the 158 investigated children (77.2%). Infected children were randomly assigned to receive either a 7-day triple therapy consisting of clarithromycin (CLA), metronidazole (MET), and omeprazole (OMEX) or a sequential therapy based on metronidazole and clarithromycin (5+5) with amoxicillin (AMO) and clarithromycin (CLA) or metronidazole (MET), either a 7–14 days standard empirical triple therapy consisting of omeprazole (ESO) plus amoxicillin (AMO) and clarithromycin (CLA) or metronidazole (MET), either a sequential therapy for 10–14 days. Bismuth salts are not easily available in our country, therefore the efficacy was assessed by follow-up endoscopy 4–8 weeks after the end of anti-H pylori therapy by at least two different invasive tests. In patients failing to be cured through the first treatment a second approach was applied (a triple therapy based on quinolones or metronidazole either sequential therapy was associated with antibiotic susceptibility testing. The primary and secondary outcomes were the rate of H pylori eradication after the first and second line therapy, by intention to treat (ITT) and per-protocol (PP) analysis. Statistical analysis was performed with EPI INFO 7. The differences between eradication rates were analysed by x² test and the Odds Ratio (p < 0.005 was considered statistically significant).

Results: Patients with H pylori infection were treated with an initial empiric first line standard therapy (n = 52) or a sequential therapy (n = 70). Of the 122 children who required follow-up 74 (61.4%) of them completed the standard therapy and 48 (38.6%) of them completed the sequential therapy. Of the 74 patients who completed the standard therapy, 32 (43.2%) were eradicated in 87/122 children (71.32% for ITT analysis versus 76.96% for PP analysis). The first eradication rates were significantly higher using the sequential therapy (55/70 cases; 78.57% for ITT analysis and 55/64 cases; 85.93% for PP analysis) compared with standard first line therapy (32/52 cases; 61.53% for ITT analysis and 32/49 cases; 65.30% for PP analysis). The ITT and the PP eradication rates were significantly higher with sequential treatment (OR = 0.45; 95% CI: 0.19; 0.97; p = 0.04; x² = 3.42; p = 0.06 for ITT analysis and OR = 0.30; 95% CI: 0.12; 0.77; p = 0.03; x² = 5.55; p = 0.021 for PP analysis). A second-line therapy was recommended in 26 of cases with an overall eradication rate of 80.76% (21/26 cases) for ITT analysis and respectively 87.5% (21/24 cases) for PP analysis. The choice of second line therapy was tailored by antimicrobial susceptibility only in some cases (15/26 cases; 57.7%). The eradication rates for PP analysis were: 90% (25/27 cases) based on MET; 80% (8/9 cases) for triple therapy based on quinolones and 80% (4/5 cases) for sequential therapy.

Conclusion: This endoscopic series reveals a high rate of H pylori infection (77.2%). The sequential therapy achieved a significantly higher rate of eradication than the standard empiric triple regimens regardless of using ITT (78.57% versus 61.53%) or PP (85.93% versus 65.30%) analysis. The eradication rates for the second-line therapy was significantly higher (87.5% for PP analysis) compared with first-line therapy (76.96% for PP analysis).

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

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P0646 GUT MICROBIOTA ALTERATIONS UNDER OLIGOFRUCTOSE-ENRICHED INULIN ADMINISTRATION IN PAEDIATRIC COELIAC DISEASE PATIENTS ON A GLUTEN-FREE DIET: RANDOMIZED CONTROLLED TRIAL

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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 microflora, are a promising, 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 % female, mean age 10 years) on GFD who were randomly assigned to probiotic (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 each experimental 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 probiotic group did not show the decreasing tendency along with the time of OEI administration observed in placebo group. These changes were reflected into bacterial number after the intervention that was constant in probiotic group but tended to fall in placebo group. Microbiota counts corresponded well with microbial metabolic activity. In comparison with placebo group, the concentration of short-chain fatty acids (SCFAs) were significantly higher in probiotic group (50.27 vs. 69.95 μg/ml, p < 0.05), mainly due to a significantly higher acetate formation (28.82 vs. 44.06 μg/ml, p < 0.05).

Conclusion: 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 microflora, are a promising, low-risk GFD supplement to remedy the intestinal dysbiosis in CD patients.

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

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P0648 EVALUATING GLUTEN IMMUNOGENIC PEPTIDES AS NON-INVASIVE MARKER OF GLUTEN-FREE DIET ADHERENCE IN PAEDIATRIC CELIAC DISEASE

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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
Aims & Methods: Detection of gluten immunogenic peptides (GIP) in stools as a marker of GFD adherence in CD paediatric patients was evaluated and compared against traditional methods of GFD monitoring.

Results: A total of 195 patients met the eligibility criteria for the meta-analysis. The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of adherence to dietary transgression. Anti-tTG IgA remained in high concentrations in 48, 34 and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP (anti-DGP) IgA antibodies were measured simultaneously, during basal and follow-up visits at 6, 12, 16 and 24 months. Correlations between fecal GIP and serum antibodies were established by Cochran’s and Friedman tests.

Conclusion: The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of adherence to dietary transgression. Anti-tTG IgA remained in high concentrations in 48, 34 and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP (anti-DGP) IgA antibodies were measured simultaneously, during basal and follow-up visits at 6, 12, 16 and 24 months. Correlations between fecal GIP and serum antibodies were established by Cochran’s and Friedman tests.

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

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P0652 CLINICAL SIGNIFICANCE OF TRANSFORMING GROWTH FACTOR - βI AND TUMOR NECROSIS FACTOR - β IN CHILDREN WITH FOOD PROTEIN INDUCED ENTEROCOLITIS SYNDROME


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Introduction: Nowadays food allergy continues to increase, especially in westernized countries and is now recognized as a worldwide problem. Transforming growth factor-β1 (TGF-β1) 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-α appears to have an important role.

Aims & Methods: The aim was to determine the significance of the Transforming Growth Factor - β1(TGF – β1) and Tumor Necrosis Factor – α (TNF – α) in children with food protein induced enterocolitis syndrome. It was examined 38 patients with FFPIES 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-β1 and TNF-α in serum was performed by an enzymelinked immunoassay kits from Rinder Medsystem (Australia).

Results: The level of TGF-β1 in patients with FFPIES 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-α were also increased and amounted to 8.8 ±1.3 ng/ml in comparison with the control group, p <0.001. For statistical evaluation, it was characterized by an increase in specific antibodies IgE to cow’s milk in 18 (47.3%) children. In these patients the index of TGF-β1 increased by 2.64 (p ≥ 0.001).

Conclusion: It is believed that TGF – β1 and TNF-α have a bigger birth weight and increase the risk of newborns’ obesity. Glutathione S-transferase M1 polymorphisms and anthropometrical parameters (p = 0.545 for FFPIES and clinical parameters, p = 0.066 for TST and bacterial infections). The American journal of gastroenterology 107, 730-735, doi:10.1038/ajg.2012.4 (2012).

Conclusion: Mother’s GSTM1 is an independent risk factor for newborn’s 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 Targu Mureş, Romania - “The role of genetic determination of the mother in child’s obesity correlated with measurements of bisepidope and anthropometry” no.275/4/ 11.01.2017. Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0654 SARCOPENIA IN CHILDREN WITH INTESTINAL TRANSPLANTATION

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Introduction: Deficits in lean mass and muscle measures are well described in children with chronic disease e.g. childhood inflammatory bowel disease[1]. Sarcopenia is a poor prognostic biomarker in adults with advanced cancer, liver transplantation and in children with acute lymphoblastic leukaemia [2-4]. Poas muscle cross sectional area (PCA) has been shown to correlate with whole body muscle mass and can be measured from axial imaging [5]. Little is known about sarcopenia in children with intestinal transplantation (IT). Sarcopenia is a poor prognostic biomarker in adults with advanced cancer, liver transplantation and in children with acute lymphoblastic leukaemia. Poas muscle cross sectional area (PCA) has been shown to correlate with whole body muscle mass and can be measured from axial imaging [5]. Little is known about sarcopenia in children with intestinal transplantation (IT).

Aims & Methods: The primary objective was to determine whether children who had IT show differences in total PCA when compared to healthy controls. The secondary objective was to investigate association of PCA and survival after IT. A retrospective, case note review of children who had IT at a single centre since inception in 2009 to May 2016. Controls were identified from abdominal trauma series. Total PCA (mm²) was measured using direct techniques of magnetic resonance imaging in the axial plane at the level of the psoas major. An operator of superior iliac spine. To correct for body size, PCA index was derived for all subjects: PCA divided by height. PCA index was then described according to outcome. Statistical analysis was carried out using Social Sciences (SSPS) version 23.

Results: 16 patients (9 male). The current IT at our centre. Post-transplant axial imaging was available for 12/6 (male), median age 6.2 (range 12.91) years patients in whom the diagnoses (n): Chronic intestinal pseudo-obstruction (3), gastrochisis (3), intestinal ischaemia (1), intestinal lymphangiectasia (1), volvulus (1), progressive familial intrahepatic cholestasis (1), Hirschsprung’s disease (1) and intestinal failure of indeterminate aetiology (9) compared to those who did not (2). Conclusion: Children who underwent IT had sarcopenia of the poas muscle in comparison to healthy controls. Children who died there was a trend toward poas muscle sarcopenia. This study adds to the evidence that body core muscle is consistently deficient in children with chronic disease and is the first to comment about sarcopenia in children with intestinal transplantation (IT).

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

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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 common C/T13910 and G/A22018. Homozygotes (CC or GG) have undetectable lactase levels. In clinical practice only half of people with PLI have symptoms. However, some studies showed that PLI subjects have lower dairy intake.

Aims & 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. We used strip genotyping to identify genetic predisposition to IPL. Subjects were asked to complete a validated questionnaire for quality of life and dairy intake questionnaire. We used Spearman’s to evaluate the correlation between IPL and quality of life and dairy intake.

Results: (51.7%) subjects had a CC genotype, 30 (34.5%) subjects had a GA genotype and 7 (8%) subjects had a GG genotype. Our results were consistent with Hardy-Weinberg equilibrium. We found no correlation between homozgyosity for PLI and dairy intake (CC: r = -0.06, p = 0.54; GG: r = -0.01, p = 0.86). We found no correlation between either CC, or GG genotype and quality of life (r = -0.11, p = 0.3; r = -0.1, p = 0.34).

Conclusion: In our group genetic predisposition to IPL followed European trends. It did not influence 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, PH-C4-TC-2016-08

Aims & Methods: We aimed to investigate the anti-liver fibrosis ability of lourierin B and the molecular mechanisms involved it. After hepatic stellate cells controlling liver fibrogenesis. Its role in a liver fibrosis scenario needs to be further investigated.

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

References


Dushay J, Chui PC, Gopalakrishnan GS, et al. Increased fibroblast growth factor 21 in obesity and nonalcoholic fatty liver disease. Gastroenterology 2010; 139 (2): 456-463 [PMID: 20451522 PMCID: PMC4626267 DOI: 10.1053/j.gastro.2010.04.054]


P0657 HEPATIC FIBROBLAST GROWTH FACTOR-21 AND OMENTIN-1 mRNA LEVELS IN MORBIDLY OBESE WOMEN WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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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 steato- sis 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 (r = 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 our conclusion our study, which focused on hepatic FGF21 and omen- tin-1 mRNA expression, confirmed a marked expression of both molecules in the liver of morbidly obese patients with NAFLD. mRNA levels were affected by biological abnormalities. Increased hepatic 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


Dushay J, Chui PC, Gopalakrishnan GS, et al. Increased fibroblast growth factor 21 in obesity and nonalcoholic fatty liver disease. Gastroenterology 2010; 139 (2): 456-463 [PMID: 20451522 PMCID: PMC4626267 DOI: 10.1053/j.gastro.2010.04.054]

(HSCs), which were separated from Sprague-Dawley rat, were treated with dif-
ferent concentrations of Loureirin B. MTT assay was performed to determine whether autophagy dysfunction has been implicated in lipid accumulation related diseases. This was also accompanied by the reduction of neutrophils, which together can reduce inflammation. Upregulated macrophages were associated with the increased expression of GRP78 and p-IRE1α, and the activation of NF-

cy3a10. Western blot analysis showed that the expressions of Wnt receptor Frizzled-4 and secreted protein and Frizzled-4 receptor protein and 

**Aims & Methods:** We aimed 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 analyzed in in vitro models for FXR binding activity 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 mouse hepatocytes and HepG2 cells with selected BA derivatives. In parallel, BA derivatives were co-incubated with oleic and palmitic acids (2:1) for assessment of cellular cytotoxicity and intracellular lipid accumulation.

**Results:** From the compound library, five BA derivatives showed stronger activation of FXR, comparing with their natural precursors. Incubation of HepG2 cells with FAs led to a ~25% reduction in cell viability and ~35% 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, FGFr19 and VLDLR mRNA levels, and repressed PARP1, LXR, SREBP1-c and CFTR mRNA expression. Molecular docking studies and FXR reporter assays confirmed ligand affinity to FXR. Furthermore, chenodeoxycholic acid and its structural analogues were found to be activators of FXR at lower concentra-

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

**References**

3. treatment of NAFLD remains elusive.

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**Introduction:** Macrophages play a pivotal role in the pathogenesis of non-alco-

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3. treatment of NAFLD remains elusive.
Scholars Program 2015).

Introduction: Mitochondrial dynamics proteins, like mitofusin-2 (Mfn2) is frequently observed in liver steatosis, inflammation and insulin resistance; as well as progressive steatosis to NASH. mRNA and protein expressions were analyzed by HTqPCR package in Bioconductor. Liver biopsies were obtained from patients with alcoholic hepatitis, decompensated chronic liver disease and acute-on-chronic liver failure admitted in TUTH. 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 300 μg twice daily for 3 days (total 6 doses). Mortality rates at 1 month and CTP (Child Turcotte Pugh) and MELD (total 10 doses).

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 and 83% survived 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 G-CSF group compared to SMT alone group.

Conclusion: G-CSF 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).

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References

P0663 GRANULOCYTE COLONY STIMULATING FACTOR IN DECOMPENSATED LIVER DISEASE - OUR EXPERIENCE IN A TERTIARY HOSPITAL IN NEPAL

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Introduction: Alcoholic Hepatitis, Decompensated Chronic Liver Disease and Acute-on-Chronic Liver Failure (ACLF) is a burden of mortality. Mortality is quite high in these presentations despite all the medications currently available in our country. Prednisolone and Pentoxifylline are not up to the mark in terms of both short and long-term outcomes. The only option that remains is liver transplantation which is not readily available in our 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 patients1,2. By comparing the outcomes in those receiving 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 ACLF (Acute-on-Chronic Liver Failure) and decompensated CLD (Chronic Liver Disease) have used a high dose of G-CSF, our study has used a fixed dosage of 300μg of G-CSF subcutaneously twice a day for a total of 3 days (6 doses).

Aims and Methods: We aimed to study the role of G-CSF in the treatment of alcoholic hepatitis, Decompensated CLD and ACLF. 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 300 μg twice daily for 3 days (total 6 doses). Mortality rates at 1 month and CTP (Child Turcotte 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 and 83% survived 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 G-CSF group compared to SMT alone group.

Conclusion: G-CSF 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.

References
mononuclear layer containing stem cells is a novel approach for regeneration of liver cell layer in a hepatoprotective therapeutic option for patients.

**Aims & Methods:** To determine the outcome after intrasplenic or intrahepatic 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) injected intrasplenic. Group Ia: 10 patients underwent (ABMSC) injected intrasplenic after trans differentiation into hepatocytes with the double amount of growth factor. Group Ib: 10 patients underwent (ABMSC) injected intrasplenic after trans differentiation into hepatocytes using regular amount of growth factor. Group IIb: 10 patients underwent (ABMSC) injected intrahepatic; after trans differentiation into hepatocytes with the double amount of growth factor. Group III: (Control Group); consisted of 20 patients treated with intrasplenic or intrahepatic stem cell transplantation. The aim of this study was to determine to what extent the risk factors of metabolic syndrome has on ultrasonography of fatty liver, especially NAFLD.

**Results:** NAFLD was found in 13.8% of non-obese subjects and 52.3% of obesity subjects. NAFLD was associated with most components of MetS in both obese and non-obese subjects. However, non-obese NAFLD patients had significantly higher PIs for certain components of MetS than did obese patients, especially among women. Body mass index, waist circumference, fasting blood glucose, triglyceride, HbA1C and aspartate aminotransferase, alanine aminotransferase, γ-glutamyl transferase levels all affected NAFLD independently. The prevalence of metabolic syndrome was increased in mild (40.8%) and moderate (57.8%) NAFLD groups. When odd ratio (95% CI) for NAFLD group was compared to the contrast group, there was an increased risk of metabolic syndrome with odd ratio of 12.8 (95% CI, 9.1–17.0).

**Conclusion:** NAFLD and its complications is a close association with MetS and also with each risk factors of MetS. 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**
P0668 THE USE OF THE FATTY LIVER INDEX TO DETERMINE THE PREVALENCE OF FATTY LIVER DISEASE (HEPATIC STEATOSIS) IN AN IRISH POPULATION

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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 that identifies a risk threshold score (MTATC) 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 obtained from the ethics committees of UHG.

Results: Data was completed 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 (44.8%) of these participants had a FLI >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 FLI >60 had a mean weight = 93.5 kg and BMI = 31.5 vs. 64.9 kg and 22.4 respectively for those with 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 obese females 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

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Introduction: The clinical implications of non-alcoholic fatty pancreas disease (NAFPD) 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 across-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, Fibrotest, Fibroscan). Statistical analysis was performed through Kruskal-Wallis test and independent t-test.

Results: Of these 143 patients with NAFLD, 84 had criteria for metabolic syndrome (MeS), while there was no significant difference in frequency among FP groups. Out of all clinical and laboratory characteristics, no statistical differences were observed in demographic or lifestyle factors such as age, sex, body mass index (BMI), systolic and diastolic blood pressure, presence of hypertension and dyslipidemia, values of insulin, high density lipoprotein (HDL) and triglycerides. Waist circumference (WC) showed significant difference among groups, indicating WC as a possible marker for higher risk of FP in NAFLD patients (P = 0.018). 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 amyrase and lipase were associated with presence of highly fatty pancreas (P = 0.052, P = 0.007, P = 0.014; P = 0.024, respectively). 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 hypertensives, higher number of patients with severely FP did not use antidiabetic agents and association was registered among NAFLD patients with use of metformin and glibenclamide 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 noninvasive markers nor histological reports of liver fibroses showed significant association with presence of fatty pancreas.

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 (mg/dL) – HDL cholesterol (mg/dL) + 0.060 * sex + 0.051 * serum lipase * WC. Presence of NASH and high levels 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 correlation presents possible risk factor for development of MeS manifestations, affects glucose metabolism and severity of NAFLD. Interestingly, significant association was registered among NAFLD patients
with use of antidiabetic agents and the absence of highly fatty pancreas, indicating its potential protective role. Simple noninvasive scoring system was designed from multivariate logistic regression analysis to estimate the occurrence of severe 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

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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 nonalcoholic fatty liver histology. Mean age of individuals with and without steatosis were 6.69 and 31.8 years respectively (P=0.004). In univariate analysis higher weight, triglyceride, total cholesterol, alanine aminotransferase (ALT), alkaline phosphatase, fasting blood sugar and 1.27 mIU/L) were independent predictors of hepatic steatosis. In regression analysis, higher serum TSH was independently associated with steatohepatitis compared to primary cholangiocytes obtained from a patient without PLD. This indicates in this patient no loss of heterozygosity occurs in cholangiocytes lining the hepatic cysts.

Conclusion: We describe six novel GANAB mutations that can cause PLD in a mixed population of ADPKD and ADPLD patients. These mutations are found in functionally important domains of α-subunit of glucosidase II, which may lead to impaired enzymatic activity of the complex. In contrast to other PLD related genes no loss of heterozygosity was found for GANAB in cyst epithelium.

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

P0672 IDENTIFICATION AND IN SILICO CHARACTERIZATION OF SIX NOVEL GANAB MUTATIONS IN POLYCYSTIC LIVER DISEASE

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P0673 DIFFERENCES BETWEEN BY-PASS AND SLEEVE GASTRECTOMY ON CLINICAL AND LABORATORY STATUS 6 AND 12 MONTHS AFTER INTERVENTION IN BARIATRIC SUBJECTS

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Introduction: In patients with morbid obesity, dietary treatment and physical activity are the first line of treatment, but if not responding, bariatric surgery is a seriously validated option. The main surgical procedures are the 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 GB. 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 0.5%, P = 0.001), ALT (increased by 15% in GBP, decreased by 27% in SG, P = 0.023) no differences were observed in the other indicators considered. Ferritin level increased (52%) in SG and decreased (25%) in GBP (P = 0.02). No difference was observed for pSWE.

Conclusion: This study showed some significant differences in clinical and laboratory indicators between the two groups of intervention, in 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.

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P0674 AUTOSOMAL DOMINANT POLYCYSTIC LIVER DISEASE IS A RISK FACTOR TO HAVE A LARGER LIVER VOLUME COMPARED WITH PATIENTS WITH COMBINED POLYCYSTIC LIVER DISEASE AND AUTOSOMAL POLYCYSTIC KIDNEY DISEASE: RESULTS OF THE PLD REGISTRY
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Introduction: Polycystic liver disease (PLD) occurs in the setting of 2 different genetic disorders: autosomal polycystic liver disease (ADPLD) and autosomal polycystic kidney disease (ADPKD). These patients may develop hepatomegaly as a result of multiple fluid-filled cysts. It is unclear whether PLD severity differs between ADPLD and ADPKD. Height adjusted liver volume (htTLV) reflects with symptomatic disease and diminished quality of life. We assessed hepatomegaly with htTLV, as an objective parameter, in a large cohort of ADPKD and ADPLD patients.

Aims & 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 with symptomatic disease and diminished quality of life. We assessed hepatomegaly with htTLV, as an objective parameter, in a large cohort of ADPKD and ADPLD patients. Height adjusted liver volume was measured prior to liver reducing therapy. We performed univariate and multivariate analyses to explore risk factors associated with severity of disease.

Conclusion: In this cohort more ADPKD patients had moderate to severe PLD compared to ADPLD patients. ADPKD patients had higher htTLV compared to ADPLD patients. In total, ADPLD patients had a lower risk of developing severe disease.

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

P0675 CARDIOVASCULAR RISK DEVELOPMENT MODEL FOR THE ATYPICAL PATIENT WITH NON-ALCOHOLIC FATTY LIVER DISEASE
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Introduction: Non-alcoholic 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 patients at risk of developing cardiovascular events is of major importance, both in terms of prognosis, as in the 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 and without NAFLD, and with and without MS. NAFLD diagnosis was based on clinical, biological and ultrason examination. We used Fibromax for evaluating the hepatic modifications (presence of steatosis and fibrosis), with values of >35% for steatosis and F3-F4 counted as advanced fibrosis). We performed ultrasound measurement of the carotid intima-media thickness (in the common carotid artery, 1 cm before the bifurcation). Values above 0.07 cm were considered pathological and values above 0.12 cm were considered as normal for hepatic (ats) plaques. Routine antropometric and laboratory determinations were performed.

Results: We included 95 patients with NAFLD, from which 53 were with MS and 43 were without MS. In all patients with NAFLD, with and without MS, there was a correlation between the value of intima-media thickness and the presence of NASH (p = 0.025), the degree of steatosis (p = 0.027) and the severity of fibrosis (p < 0.001). Patients with NAFLD and MS had higher values of the intima-media thickness than those with NAFLD, but without MS (p = 0.002).

In all patients with NAFLD, there was a correlation between the presence of ats plaque and NASH (p < 0.001). The sex of the patients (p = 0.638) and the level of total cholesterol (p = 0.438), LDL cholesterol (p = 0.505), HDL-cholesterol (p = 0.438), and triglycerides (p = 0.911) were not correlated with the presence of ats plaque, nor on the entire group of patients or on each arm. In a logistic model for the risk of developing ats plaque, we included presence of NASH, the grade of steatosis, the stage of fibrosis, body mass index, abdominal circumference and creatinine clearance level. In this model, the stage of fibrosis has been shown to be a predictor with a positive effect on the presence of ats plaque (p = 0.004, adjusted OR = 7.19, CI[1.86;27.72]). This model correctly classified 90.9% of patients with ats plaque and 91.7% of patients without ats plaque.

Conclusion: NAFLD patients were found to be atypical for the development of cardiovascular risk. Staging disease severity has proved to be an important diagnostic factor. On the other hand, identifying NAFLD patients with ats plaques might select the patients in which liver biopsy might be indicated for better characterization of the liver disease. Screening and aggressive treatment of cardiovascular risk factors should be done in all NAFLD patients.

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

P0676 DEVELOPMENT AND VALIDATION OF AN AUTOMATED SYSTEM FOR ASSESSMENT OF LIVER STEATOSIS AND FIBROSIS IN ROUTINE HISTOLOGICAL IMAGES FROM PATIENTS WITH NAFLD
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Introduction: Liver biopsy is the reference standard for diagnosing and staging non-alcoholic fatty liver disease (NAFLD). Steatosis 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 biopsy samples 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 (Collagen ProportionateArea (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 significant 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 trial practice and in clinical trials for patients with non-alcoholic fatty liver disease.

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

P0677 THE IMPORTANCE OF FIBROSIS SCORES AND TRANSIENT ELASTOGRAPHY IN NAFLD EVOLUTION
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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.
Aims & Methods: Aim of our study was to compare two non-invasive methods: fibrosis scores based on serum markers and transient elastography (TE). We included 152 patients with NAFLD, 40 males (26.31%) and 72 females with age from 23 to 79 years.35 patients (23.02%) were overweight, 9 patients had normal weight and 24 (15.79%) had severe obesity. In all patients we calculated Fibrosis scores: BARD, Fibro-4 and NAFLD FIBRO-4 and Fibrosis score (NAFLD-FS). Blood samples were collected to determine aminotransferases, glucose, albumin level, platelet count. The abdominal ultrasonography was performed by the same physician and steatosis was graded using a semi-quantitative scale of 0–5. TE was also performed by a single physician using the 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: 0.74–0.89). Sensibility and specificity for cutoff 7.1 kPa was 0.74 respectively 0.79 to exclude significant fibrosis. NAFLD-FS correlated statistically 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 of 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
difficult due to the unreliable history of alcohol consumption and lack of sensi-ble biomarkers. In contrast, one single-marker feature, an 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 scor-ing system in the differentiation of ALD and NAFLD was evaluated through the area under 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 a 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 (0.715-0.899), p < 0.001]. ANI greater than ~1.96 indicates a diagnosis of ALD whereas ANI less than ~1.96 indicates a 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 liver biopsy. ANI greater than ~1.96 suggests the diagnosis of ALD and ANI lesser than ~1.96 suggests NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
the CTCAE scale was used. Overweight was detected in 40 patients: BMI = 25–30, and 30 – in 11 (13.1%) patients. Depending on the overweight presence the patients were divided into 2 groups: I (n = 44) – patients with AL with normal body weight, II (n = 40) – patients with AL and overweight.

Results: In AL patients of group I before the start of chemotherapy functional liver tests were significantly different from healthy people. In group II there was an increase of ALT activity in 1.5 times, AST – in 1.2 times, ALP and GGT in 1.4 times compared to the norm (p < 0.05) and reached grade I level, and no change in bilirubin and total protein levels. On the 28th day of treatment in 3 (6.8%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 2.3 and in 2.2 times respectively, GGT and ALP in 1.9 and 2.4 times respectively, the level of total bilirubin increased in 2.1 times (p < 0.05), of which in 17 (42.5%) patients hepatic function was characterized by the increased activity of ALT in 2.6 and in 2.3 times respectively, and 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 hepatotoxicity 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 times respectively, the level of total bilirubin increased in 3.6 times (p < 0.05), of which in 10 (25%) patients hepatotoxic reactions were of grade I and in 16 (40%) – of grade II level.

Conclusion: The presence of the overweight results in a significant increase in the frequency and degree of hepatotoxic reactions in patients with AL during chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.
Severe alcoholic hepatitis (SAH) remains a condition which bears utmost importance. Although serum biomarkers are available (Maddrey Discriminant Function - MDF), the diagnostic of SAH relies on liver biopsy. Adequate selection of patients who would benefit the most from corticotherapy is of utmost importance. 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 $\geq$ 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 metabolic analysis was performed using Thermo Scientific UHPLC UltiMate 3000 system, equipped with a Dionex quaternary pump delivery system and a Bruker Daltonics MaXis Impact 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 by MetaboAnalysis, to analyze samples through univariate and multivariate statistical analysis.

Results: Univariate and multivariate statistical analysis by MetaboAnalysis 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, $p = 6 \times 10^{-11}$). SAH appears to have a different metabolic profile, mainly due to changes in lysophosphatidylcholine metabolism. Targeted metabolic 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.

Abstract No: P0685

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ELT - emergency liver transplantation

References


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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 would 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 metabolic 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 $\geq$ 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 metabolic analysis was performed using Thermo Scientific UHPLC UltiMate 3000 system, equipped with a Dionex quaternary pump delivery system and a Bruker Daltonics MaXis Impact 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 by MetaboAnalysis, to analyze samples through univariate and multivariate statistical analysis.

Results: Univariate and multivariate statistical analysis by MetaboAnalysis 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, $p = 6 \times 10^{-11}$). SAH appears to have a different metabolic profile, mainly due to changes in lysophosphatidylcholine metabolism. Targeted metabolic 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.
P0688 APPLICATION OF THE ICA-AKI CRITERIA IN THE DIAGNOSIS OF ACUTE KIDNEY INJURY IN PATIENTS WITH ACUTE DECOMPENSATION OF CIRRHOSIS

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Introduction: Acute kidney injury (AKI) is a common complication in patients with decompensated liver cirrhosis. Recently, the International Club of Ascites (ICA) defined new diagnostic criteria: the ICA-AKI criteria.

Aims & Methods: This study aims to identify patients hospitalized for acute decompensation of cirrhosis with AKI, according to the ICA-AKI criteria, and to determine if its application leads to greater prognostic accuracy.

Methods: Retrospective analysis of hospitalized patients in a gastroenterology department for acute decompensation of cirrhosis, without acute-on-chronic liver failure, between January 2014 and December 2015. Identification of AKI patients: fulfilling ICA-AKI criteria. Calculation of 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.

Results: 161 patients included, 85.7% male, mean age of 65 ± 10.8 years. Average length of stay of 11.6 ± 9.5 days. 39.8% of patients had AKI on admission or during hospitalization according to the ICA-AKI criteria (60.9% in stage 1, 20.3% in stage 2 and 18.8% in stage 3). Patients with AKI according to ICA-AKI had longer hospitalizations (14.55 ± 9.75 days, p < 0.05), higher severity of hepatic disease quantified by the MELD and MELD-Na scores (17.62 ± 12.83 vs. 12.83 P < 0.005 and higher in-hospital, 28 and 90-day mortality rates compared to patients without AKI 23.4 vs. 6.2% (p < 0.05), 3 vs. 9.3%, p < 0.05, 42.9 ± 23.7%, p < 0.05). There was a statistically significant association between the presence of infection and the development of AKI (p < 0.05). The ICA-AKI area under the curve (AUC) to predict in-hospital, 28 and 90-day mortality was significantly higher than the AUC of conventional criteria (0.682 vs. 0.533; 0.678 vs. 0.588; 0.618 vs. 0.509, p < 0.05).

Conclusion: The ICA-AKI criteria allow the identification of decompensated cirrhotic patients in whom a worse prognosis is predicted. Thus, they constitute a useful tool in daily clinical practice.

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

References

P0689 NESTED CASE-CONTROL STUDY FOR RISK FACTORS OF HEPATIC ENCEPHALOPATHY IN PATIENTS WITH LIVER CIRRHOSIS

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Introduction: The pathophysiology of hepatic encephalopathy is not fully understood. A nationwide nested case-control study was conducted to investigate risk factors in the development of hepatic encephalopathy (HE) among patients with liver cirrhosis (LC) in Taiwan.

Aims & Methods: A total of 913 patients with incident HE and 3499 patients without HE (controls) were identified from a cohort of liver cirrhosis (n = 14,428) using the population-based, Longitudinal Health Insurance Database 2000 in 1997–2012. Controls were matched to case patients on age at LC diagnosis (< ±2 years), sex, Charlson Comorbid index score, year of LC and follow-up time at 1:1 ratio. A multivariate logistic regression model for HE was developed to explore the relative contribution of various risk factors, including patient demographics, infections, cirrhosis-related complications (hepato cellular carcinoma, hepato porphyria), and other liver uker bleeding. A Cox regression model for all-cause mortality was performed.

Results: 714 cases of HE and matched to 714 controls were enrolled in the analysis. Infections (adj. OR, 3.41; 95% CI, 2.7–4.31, p < 0.001) and frequency of infections yearly (≥3 ≥3 OR 11.26, 95%CI, 5.7–22.2; 1–3 ≥3 adj. OR 2.82 95%CI, 2.26–3.53) were significantly associated with increased risk of HE. H. pylori 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 cholecystitis (11.62% vs. 3.98%, p = 0.0207) increased risk for HE. HE (adj OR 0.90, 95% CI 0.76–1.06, p = 0.02) and infections (adj. OR, 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 but other factors play relative roles. Further studies are needed to clarify the 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
predictors of in-hospital mortality. Patients with Sepsis-3 had higher incidence of acute kidney injury (36 vs 11%; p < 0.001) and severe sepsis (43 vs 26%; p < 0.001) compared to patients without Sepsis-3. Similar findings were found for qSOFA.

Conclusion: Sepsis-3 criteria are more accurate than SIRS criteria in predicting the severity of infections in patients with cirrhosis. qSOFA is a useful bedside tool to assess risk for worse outcomes in these patients. Patients with Sepsis-3 and positive qSOFA deserve more intensive management and strict surveillance.

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

Reference

Aims & Methods: The aim of this study was to evaluate the efficacy of carvedilol versus propranolol in primary prophylaxis of 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), bled 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 atrio-ventricular 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.

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 cause of cirrhosis was viral cirrhosis; mean Child-Pugh score was 7.2 ± 2.6. According to ALBI score, 23 patients (20.7%) had stage A, 69 (62.1%) stage B, and 29 (26.2%) stage C. During the first 30 days of follow-up 12 patients (10.8%) died, and during the 1st 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 < 0.001) 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 (AUC= 0.82 (p < 0.001)), 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.
P0695 PROTON PUMP INHIBITORS IN CIRRHOTIC PATIENTS: IT’S URGENT TO RETHINK THEIR USE!
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2Dept. Of Emergency And Organ Transplantation, Gastroenterology Unit, Bari/Italy

Introduction: It’s urgent to rethink their use!

Results: From the 179 patients with a first hospitalization for DC, 6% had ascites on admission, 45.8% had upper gastrointestinal bleeding, 38.5% had jaundice, and 28.5% had hepatic encephalopathy. Regarding medication, 29.6% of the patients were taking proton pump inhibitors (PPI), 22.3% had beta-blockers prescribed, and 1.7% were on prophylactic antibiotic. In those 53 patients with proven infection, spontaneous bacterial peritonitis was the most common infection (34%), followed by urinary tract infection (30.2%) and pneumonia (15.2%). Infected patients presented with jaundice (p = 0.03), severe ascites (p = 0.09), use of PPI (p = 0.003) and acute-on-chronic liver failure (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p = 0.04), and MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3, 95% CI 1.05–5.173).

Conclusion: Almost a third of patients will develop infections right at the first hospital admission for decompensated cirrhosis, which are associated with higher short and long-term mortality rates. As PPI more than double the risk of infections, the indication for the use of these drugs should be strictly reviewed and their interruption considered in cirrhotic patients.

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

P0696 OMNIPRESENCE OF LIVER FIBROSIS, BUT PORTAL HYPERTENSION ONLY IN SELECTED ADULT FEMALE PATIENTS
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2Cardiology, Radboud university medical center, Nijmegen/Netherlands
3Pathology, Jeroen Bosch Hospital, ‘s-Hertogenbosch/Netherlands

Introduction: The Fontan circulation causes some degree of hepatic congestion by its nature of anatomical reconstruction. This may lead to liver fibrosis or even cirrhosis, but to what extent is unknown. A profound hepatic evaluation, incorporating several non-invasive and invasive modalities, in an asymptomatic Fontan patient cohort may further elucidate this.

Aims & Methods: Consecutive patients with a Fontan circulation are prospectively included for scanning of liver fibrosis. This screening consists of a blood sampling for liver biomarkers, liver stiffness using ultrasound, transient elastography ( Fibroscan), contrast-enhanced liver MR or CT-scan and liver biopsy. Liver biopsies were systematically scored with the Fontan specific fibrosis score.

Conclusion: Infected patients presented with jaundice (p = 0.03), severe ascites (p = 0.09), use of PPI (p = 0.003) and acute-on-chronic liver failure (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p = 0.04), and MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3, 95% CI 1.05–5.173).

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

References

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P0697 CRITICAL FLICKER FREQUENCY TEST PREDICTS THE FIRST EPISODE OF OVERT HEPATIC ENCEPHALOPATHY IN PATIENTS WITH COMPENSATED LIVER CIRRHOSIS
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2Emergency And Organ Transplantation, University of Bari, Bari/Italy
3San Camillo Hospital, Manfredonia (Foggia), Italy, Gastroenterology Unit, Foggia/Italy

Introduction: Critical flicker frequency (CFF) values of PPI (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p = 0.04), and MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3, 95% CI 1.05–5.173).

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

References

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Introduction: Critical flicker frequency (CFF) values of PPI (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p = 0.04), and MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3, 95% CI 1.05–5.173).

Conclusion: Almost a third of patients will develop infections right at the first hospital admission for decompensated cirrhosis, which are associated with higher short and long-term mortality rates. As PPI more than double the risk of infections, the indication for the use of these drugs should be strictly reviewed and their interruption considered in cirrhotic patients.

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

References

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P0699 A RANDOMIZED DOUBLE BLIND CONTROLLED TRIAL OF THE EFFECT OF LACTOBACILLUS RHAMNOSUS GG IN PATIENTS WITH MINIMAL HEPATIC ENCEPHALOPATHY
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Introduction: Prebiotics has been recently used to treat cirrhotic patients with any grade of acute or chronic hepatic encephalopathy (HE). Herein, we evaluated the efficacy of Lactobacillus Rhamnosus GG (LRGG) on the treatment of minimal HE (mHE) in compensated cirrhotics.

Aims & Methods: 134 patients were screened by critical flicker frequency (CFF) to diagnose mHE. Among them, 41 patients were CFF+ (≤39Hz) and were
randomized to placebo or LRGG treatment, for 2 months. In all intention to treat and per protocol patients, demographic characteristics, laboratory test, were analyzed. In addition, the regulatory mechanism of HSCs was also investigated.

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Introduction: Th17 cells are involved in liver fibrosis by activating hepatic stellate cells (HSCs). We aimed to investigate whether HSCs could regulate the function of Th17 cells and the relevant mechanism.

Aims & Methods: Sixty-five patients diagnosed with chronic hepatitis B (CHB) were enrolled in this study. To unravel the effect of HSCs on T cells, naïve CD4⁺ T cells and Th17 cells were sorted from CHB patients and cultured with IL-17A, IL-23R, RORC, CCL20 and CCR6, and meanwhile, they could activate the primary HSCs. The co-culture experiment indicated that activated HSCs dramatically promoted the proliferation of CD4⁺ T cells and Th17 cells with the expression of IL-17A, IL-23R, RORC, CCL20 and CCR6, while naïve CD4⁺ T cells and Th17 cells were more pathogenic via the expression of IL-17A, IL-23R, RORC, CCL20 and CCR6, and could activate the primary HSCs. The co-culture experiment indicated that activated HSCs dramatically promoted the proliferation of CD4⁺ T cells and Th17 cells which had a more pathogenic phenotype. Moreover, activated-HSCs-mediated induction of Th17 cells might depend on IL-18 and IL-6 release as well as COX-PGE2 pathway.

Conclusion: Th17 cells cooperated with HSCs in a proinflammatory feedback loop provide us a more understanding of the pathogenic role of Th17 cells in the chronicity of HBV infection.

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

References


P0702 EFFICACY AND SAFETY OF DIRECT ACTING ANTIVIRAL DRUGS IN EARLY TREATMENT OF HCV GENOTYPE 4 POST-LIVING DONOR LIVER TRANSPLANTATION

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Introduction: Living donor liver transplantation (LDLT) has become the only life-saving treatment option for patients with end stage liver disease secondary to HCV infection in Egypt, unfortunately recurrence of infection is nearly universal,
P0703 OPTIMIZATION OF DAA TREATMENT SCHEDULE: FOCUS ON HCV GENOTYPE 3

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Introduction: Direct antiviral agents (DAAs) have led to high sustained virological response (SVR) rates in HC1 patients. However, genotype 3 patients respond to treatment in a suboptimal way.

Aims & Methods: This study aims to identify which of the several treatment schedules, for genotype 3, would constitute the best option.

Twenty-four Italian centers were involved in this real-life study where HCV genotype 3 patients treated with DAAs. To expand the number of cases, we conducted a systematic review of literature on the outcome of genotype 3 patients treated with DAAs.

Results: A total of 233 patients with HCV genotype 3 were enrolled. Cirrhotic patients accounted for 83.7%. Overall, the SVR12 rate was achieved by 205 subjects (88.0%); the SVR rates were 78.8% after sofosbuvir/ribavirin, 92.5% after sofosbuvir/daclatasvir+ribavirin, and 100% after sofosbuvir/ledipasvir (Ppatients). No difference of rate of SVR was observed in cirrhotic and non-cirrhotic patients (92.2%/94.4%) using a combination regimens of NSSA and NS5B inhibitors. The systematic review of literature provided data of 3311 patients: the mean weighted SVR12 rate was 84.4% (C1.70.4–87.8%); the rates varied from 79.0% (C1.70.9–85.3) with sofosbuvir/ribavirin, to 83.7% (C1.62–93.1) with sofosbuvir/ledipasvir, and to 88.2% (C1.83.3–91.7) with sofosbuvir/daclatasvir.

Conclusion: Our results reinforce the concept that HCV genotype 3 should no more considered difficult to treat individuals. The optimal therapeutic regimens for these patients appears to be the combination sofosbuvir/daclatasvir, with a reduced rate of RBV in non-cirrhotic patients in cirrhosis the meta-analyses approach suggests to extend therapy at 24 weeks.

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

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

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Introduction: An 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 – 3 The Baveno VI guidelines 1– 3 propose that patients with compensated advanced chronic liver disease (cACLD), LS measurement <20 kPa and a platelet count >150000/μL can avoid screening endoscopy as their combination is highly specific for excluding clinically significant oesophageal varices (EV). These findings have been validated recently.1 – 3

Aims & Methods: The aim of this study was to quantify LS regression both (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], 11.23 (8.19–15.75) kPa and decreased to [mean range], 15.4 (8.4–7.5) kPa at SVR 24 and [mean range], 16.19 (9.6–7.2) kPa at SVR > 54. Both were statistically significant, showing a decrease in LS about 30% between BL and SVR24 and about 33% between BL and SVR > 54. We did not find statistically significant differences between SVR24 and SVR > 54. Regarding the probability of qualitative improvement of the LS (improve from F4 to F3 or less) the AUC was 0.84 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.

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

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P0705 8 VERSUS 12 WEEKS OF LEDIPASVIR/SOFOSBUVIR REGIMEN IN PATIENTS WITH CHRONIC HEPATITIS C GENOTYPE 1 INFECTION

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Introduction: The therapeutic regimens for chronic hepatitis C are now tending to be shorter and ribavirin free, more cost-effective and with fewer adverse effects. Aims & Methods: We aimed at comparing the 8 weeks versus the 12 weeks regimen of ledipasvir plus sofosbuvir in patients with hepatitis C virus (HCV) genotype 1 infection without cirrhosis, treatment naive, HCV RNA <6000000 UI/mL. We included 281 patients (pts) with genotype 1 and HCV RNA <6000000 UI/mL treated with ledipasvir plus sofosbuvir in the recommended dose: 120 pts - 8 weeks (group 1) and 161 pts - 12 weeks (group 2). The fibrosis stage was evaluated by transient elastography (Fibroscan®, Echosens, Paris) considering F4 > 12.5 kPa. Patients with undetectable RNA after 12 weeks of treatment were considered cured – sustained virologic response (SVR).

Results: No significant demographic and clinical differences were found between the two groups with the exception of the fibrosis stage (table). Two hundred and forty-four patients concluded the treatment; the SVR was 99% in group 1 and 100% in group 2, without differences between the two groups (p = 0.275). Thirty three patients are still in follow up: group 1-15 pts and group 2-18pts. The reported adverse effects were mild in both groups (fatigue, insomnia, headache and pruritus) but more frequent in group 2 (p = 0.046).

Patients characteristics 8 weeks n = 120 12 weeks n = 161 p
Average age (years) 50.4 (20-81) 53.6 (19-86) 0.473
Male sex, n (%) 52 (51.7%) 89 (55.3%) 0.548
Genotype (n) 1a 74 94 0.579
1b 44 66 0.462
1 and 1a/1b 1 + 1 + 0.917
Average RNA ± SD (UI/mL) 903275 ± 1093867 182659 ± 1611806 0.348
Inferior transient elastography (n) 0.013
F0/F1 111 105 < 0.001
F2/F3 8 56 < 0.001
F4 1 0 0.246

Previous treatment with INF+ Ribavirin
Yes 8 0 0.001
No 112 161 < 0.001

HIV co-infection 1 14 0.004

RNA - week 4, n (%) Undetectable 86 (71.7%) 124 (77.0%) 0.307 <15 UI/mL 13 (10.8%) 13 (8.1%) 0.430

Virologic response SVR, n (%) 103 (99.0%) 141 (100.0%) 0.275
No response (no compliance) * 1 0 *
Awaiting response (in follow up) 15 18 0.734
Lost for follow up 1 2 0.742
Mild adverse effects, n (%) 7 (6%) 21 (13%) 0.046

* Patient retreated with ledipasvir + sofosbuvir + ribavirine during 12 weeks with SVR

Conclusion: In patients with chronic HCV genotype 1 infection and RNA <6000000 UI/mL, the 8 weeks regimen of ledipasvir plus sofosbuvir without ribavirin has similar high cure rates with less adverse effects.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 March 2017 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 and in 16 patients with DAAs at hepatocytectomy. 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: 33 to 4190 days). In particular, HCC was detected within 24 weeks after the cessation of antiviral therapy in 3 patients treated with DAAs. After hepatocytectomy, SVR was achieved in 21 (DAAs: 16 patients, IFN-based regimens: 5 patients) of the 67 patients without SVR when hepatocytectomy 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 = 251). 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 hepatocytectomy, respectively. The DFS rate was significantly higher in patients with SVR than in those without SVR (p < 0.001), but was not markedly different according to the antiviral treatments (p = 0.594).

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.

References

P7070 SOFOSBUVIR IN COMBINATION WITH RIBAVIRIN IN GENOTYPE 3 HEPATITIS C PATIENTS WITH CIRRHOSIS. AN EXPERIENCE FROM TERTIARY CARE HOSPITAL
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Introduction: Hepatitis C virus (HCV) is the most common cause of cirrhosis in this part of the world. Advant of Directly acting antivirals (DAAs) like Sofosbuvir (SOF) has dramatized the treatment and is the corner stone in treatment of (HCV). Most trials have been conducted in HCV genotype 1 and data for Interferon free regimen in genotype 3 (GT-3) is limited especially in cirrhotics.
Aims & Methods: We aimed to evaluate the safety and efficacy of SOF plus Ribavirin (RBV) 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 1 consecutively patients out of which 41 were compensated cirrhotics and 50 had decompensated cirrhosis. The mean age was 53.4 ± 11 years. 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 (84.5%) treatment naïve patients compared to treatment experienced 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 gm/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.

P7070 CHRONIC HEPATITIS C: MAJOR HEALTH - RELATED QUALITY OF LIFE BURDEN IN COMPENSATED CIRRHOTIC PATIENTS
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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 FACT- F (version 4) and SF-36 survey. Respondents with HCV compensated cirrhosis were compared with a control group matched for age and sex 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 FACT- F utility scores (43.2±3.85 vs 49.5±4.95, 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.

P0708 EFFICACY AND SAFETY OF SOFOSBUVIR AND RIBAVIRIN IN HCV POSITIVE PATIENTS WITH RENAL IMPAIRMENT
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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 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 30 ml/min were included in the study. Data was collected for tolerability, efficacy and on treatment adverse events. All the patients received Sofosbuvir and dose adjusted Ribavirin according of CrCl. Virological response was checked in 1 month (RVR), 3 months (MVR) 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 ± 4.3kg/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 22 (71 %) were genotype 3 while 7 (22.6 %) were genotype 1. 24 (77.4 %) patients were treatment naïve, while those who were treatment experienced. 3 patients received each Interferon and Peg interferon treatment. Treatment was stopped in 2 (6.5%) patients because of disease decenpensation 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 %) out of 15 patients have 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.
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P0712 SHEAR WAVE ELASTOGRAPHY FOR THE DIAGNOSIS OF ESOPHAGOGRASTIC VARICES
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Introduction: Intraluminal ultrasonic imaging (IVUS) is performed in EGV evaluation between January 2011 and July 2016 were included (no varices, n = 89). Virtual Touch Quantification (VTQ) was used for measurements of LS and EWV, n = 340, esophagus only, n = 107; stomach only, n = 14; esophagus and stomach, n = 29. Regression analysis using the leave one out method were: Residual attenuation coefficient (RAC = slope of the mean echo level (MU)); MU; slope of the Signal to noise ratio; and the lateral speckle size. AUC for LS was found to be 0.93 (n = 71) with a sensitivity and specificity of 87% and 85% respectively. AUC for SSI in line with previously performed studies. 87% of the included patients were found to have NASH with fibrosis. However, no significant correlations of the CAUS parameters to a pure fibrosis stage was found. No significant correlations of the CAUS parameters to a pure fibrosis stage was found.

Results:

Conclusion: CAUS is able to classify steatosis accurately and does not suffer from the presence of fibrosis, making CAUS a feasible tool for screening and evaluation of hepatic steatosis.

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

References:

P0714 UTILITY OF A NEW FUNCTION IN 3D SIM-NAVIGATOR: ELECTRIC FIELD, WHICH ILLUSTRATES THE PREDICTED ABLATIVE AREA
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Introduction: Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. Aims & Methods: The usefulness of SWE in the diagnosis of esophagogastric varices (EGVs) associated with portal hypertension was evaluated. 550 patients with hepatitis C virus compensated liver cirrhosis who received reim-

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

References:

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Introduction: New direct-acting antivirals (DAA) have changed the management of HCV infection by being effective in more than 90% of cases [1, 2]. Unfortunately, it has been reported an unexpected high rate of HCC early recur-

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

References:
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Introduction imaging technology has been reported as useful for radiofrequency ablation (RFA) and various models of ultrasound equipment have been developed to include fusion imaging systems. The 3D Sim-Navigator (HITACHI) is a navigation system that can be used in real-time vascular ultrasound imaging and navigating the 3D position of electrodes. As an addition, the 3D Sim-Navigator is now equipped with a new system that shows the predicted ablative area. This function indicates the electric field that occurs around the electrodes as the predicted ablative area on MPR images. The E-field Simulator (E-field) can manage various electrodes, such as monopolar and bipolar RF systems. E-field can be used to predict the ablative areas from not only a single electrode but also multiple electrodes, which was difficult to do in the past. We therefore examined the accuracy of E-field on 3D Sim-Navigator.

Aims & Methods: We evaluated 10 nodules treated using a bipolar RF system (CelonPOWER; Olympus Medical Systems) with multiple electrodes and 72 nodules treated using a monopolar RF system (VIVARF system; STARMed) between April 2016 and March 2017 prospectively. We compared the degree of major and minor axes of maximum ablative area for 72 nodules ablated by the monopolar RF system on both E-field and post-RFA contrast-enhanced computed tomography (CT). We then compared ablative volumes of 10 nodules ablated by the bipolar RF system on E-field and on post-RFA contrast-enhanced CT.

Results: On the evaluation of maximum ablative area by monopolar electrodes, major and minor axes were smaller on E-field than on CT, but these differences were not significant. On the evaluation of ablative volume by bipolar electrodes, correlation coefficient for all lesion of CEUS for the E-field was significantly greater than the E-field greater than 0.96. On comparing treatment efficacy based on the grading system using the grading system, the degree of agreement between E-field and CT was 0.691 and the weighted kappa coefficient was 0.929.

Conclusion: Ablative volume on E-field correlated well with that on post-RFA contrast-enhanced CT. Furthermore, good agreement was observed between the treatment efficacy on E-field and post-RFA contrast-enhanced CT. E-field can be used to predict the ablative area from not only a single electrode, but also multiple electrodes, which was difficult to do in the past. The present results suggest that contrast-enhanced CT may become unnecessary for confirming therapeutic effects in the future.

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

References

P0715 ATTENUATION COEFFICIENT MEASUREMENT (ACM) AS NOVEL REAL TIME ULTRASOUND ALTERNATIVE TO CAP (FIBROSCAN)


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Introduction: The presence of fat droplets in the hepatocytes (micro- or macrovesicular hepatic steatosis) under condition of chronic diffuse liver disease (CDDL) 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) patent UA No2014111234. Aims & Methods: From total of 327 patients who underwent to comprehensive abdominal examination in our clinic: 95 patients were diagnosed with non-CDDL liver disease according to Hamaguchi criteria. All these patient we provide ACM (dB/cm) measurement on SoneusP7 device (Ultrasign, Ukraine), with a 1–6 MHz convex transducer in the right and left lobes. For diagnostic accuracy assessment (used CEUS is an accurate and reliable method as a first step in the evaluation of focal liver lesions. Liver cirrhosis does not influence significantly CEUS performance.

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

References

P0717 CUX1 IN LIVER CANCER: EXPERIMENTAL STUDY IN HYPOXIA MODEL


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Introduction: CUXI (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. It favors the expression of oncogenes and survival factors, especially in stress condition, thus supporting tumorigenesis.

Aims & Methods: Here, we show CUXI activity during hypoxia in liver cancer cells. CUXI was knocked down and its targets were analysed by RT-qPCR in Hep3B cells under hypoxic and/or normal culture condition. The hypoxia induction was established by 24h treatment with 150 µM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUXI were analysed by RT-qPCR.

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

References

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Introduction: CUXI (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. It favors the expression of oncogenes and survival factors, especially in stress condition, thus supporting tumorigenesis.

Aims & Methods: Here, we show CUXI activity during hypoxia in liver cancer cells. CUXI was knocked down and its targets were analysed by RT-qPCR in Hep3B cells under hypoxic and/or normal culture condition. The hypoxia induction was established by 24h treatment with 150 µM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUXI were analysed by RT-qPCR.

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

References
Aims & Methods:
S-Adenosylmethionine (SAMe) is a kind of common liver-protective medicine. Recent studies have shown that SAMe has the inhibitory effects on hepatic tumor cells (HCC). But the specific mechanism has not been elucidated.

Aims & Methods: Here, we examine the effects and relevant mechanism of SAMe on human hepatic tumor cells HepG2 and mouse hepatic tumor AML12. RNA sequencing (RNA-Seq) was used to identify the differentially expressed genes between HepG2 cells which were treated with SAMe or not. And we used qRT-PCR to confirm the results 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 pathways 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 effects 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 kinetic significantly.

Conclusion: Altogether, our data enforce the evidence of SAMe possessing of antiproliferative action in liver cells, capable of up-regulating MCM3, MCM4, and E2F1. SAMe interfered with cell cycle, 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

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

References
Aims & Methods: Dkk-3 over-methylation is associated with poor prognosis of HCC patients. But as Wnt signal antagonists, and reduced expression in immortalized cells (REIC)/Medicine, Dentistry and Pharmaceutical Sciences, Okayama City/Japan

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CARCINOMA P0721 REIC/DKK-3 PROTEIN CONCENTRATION INDUCE THE
investigation.

The NLR is a readily available and inexpensive biomarker, and its addition to Conclusion: (P = 0.04). tumor multifocality (P = 0.04). The 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 multinodularity (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.

P0720 PROGNOSTIC ROLE OF NEUTROPHIL-TO-LYMPHOCYTE RATIO IN HEPATOCELLULAR CARCINOMA (HCC)


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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 (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 multinodularity (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.

P0722 SURGICAL OUTCOME OF PATIENTS WITH FIBROLAMELLAR HEPATOCELLULAR CARCINOMA. DOES IT DIFFERS FROM COMMON HEPATOCELLULAR CARCINOMA?

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Introduction: Fibrolamellar hepatoellular 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 (FNH) 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 36 mo median time interval. Vascular invasion is the only significant negative prognostic factor.

Number

FL-HCC (n = 22)

Single 19 (86%)

Multiple 3 (14%)

Size (cm) Median 12 cm (range, 5–20)

Location Hepatic resection 9 right, 10 left, 3 bilateral

Hepatocetomy 16 (73%)

Extended hepatectomy 4 (18%)

Localized resection 2 (9%)

Stage I 10 (45%)

II 5 (23%)

III 7 (32%)

IV 0

Nodal metastases 4 (18%)

Vascular invasion 5 (23%)

Positive safety margin 2 (9%)

Repeated hepatectomy 4 (18%)

Factor No. (%) Overall survival (month) p. value

Age (year)

<40 16 (73%) 86

≥40 6 (27%) 72 0.4

Gender Female 11 (50%) 84

Male 11 (50%) 79 0.6

Tumor size (cm)

<10 8 (36%) 82

≥10 14 (64%) 76 0.3

Number

<1 19 (86%) 89

≥1 3 (14%) 77 0.2

Hepatic resection Hepatocetomy 16 (73%) 86

(continued)
Conclusion: FL-HCC has a favorable prognosis than common HCC and should be suspected in young patients with non cirrhotic liver. Aggressive surgical resection should be done for all patients. Repeated hepatectomy or excision of recurrent disease should be considered for these patients as it has a relatively indolent course.

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

References

P0724 MICROWAVE VERSUS RADIOFREQUENCY THERMAL ABLATION OF HEPATOCELLULAR ADENOMA: SAFETY AND EFFICACY
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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. 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 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 patients were divided into 2 groups: GroupA included 7 patients (5 females, 2 males) underwent Radiofrequency Ablation. GroupB included 8 patients (5 females, 3 males) underwent Microwave Ablation. Follow up was performed every 3 months over a period of 1 year.

Results: Microwave and Radiofrequency thermal ablation had the same safety and efficacy in management of HCA with no evidence of residual tumor, tumor recurrence nor complications but Microwave thermal ablation was superior in large size tumors and needed only single skin puncture while Radiofrequency ablation needed more than single puncture in the same session.

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.

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

References

P0725 METABOLIC DISORDERS ACROSS HEPATOCELLULAR CARCINOMA IN ITALY

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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 showed lower percentage of HCC diagnosis on surveillance (p 0.021), larger tumors (p 0.038), better liver function (higher percentage of patients with Child-Pugh A [p 0.007] and MELD < 10 [p 0.003]), higher percentage of metastases (p 0.024), and lower percentage of portal vein thrombosis (p 0.010). The BCLC stage and treatment options were similar among the 3 groups, with the exception of a less frequent access to locoregional therapies for BCLC stage B 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
morphology, nodule size, BCLC stage, portal vein thrombosis and metastases were 1 epidemiologic factors of lead-time for sorafenib-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

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Introduction: Chronic hepatitis C virus (HCV) infection pose risk for development of hepatocellular carcinoma (HCC), even after viral eradication with effective antiviral therapy. Therefore, risk prediction is clinically important for effective surveillance of chronic hepatitis C (CHC) patients, 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 was analyzed 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 standard 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 lower 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: 6.35, CI: 1.24-1244.28, P < 0.001; HR: 3.10, CI: 1.26-751.2, P = 0.12, 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 HEPATOCELLULAR CARCINOMA TREATED WITH SORAFENIB

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Introduction: Sorafenib is a multi-thyrosine kinase inhibitor classed as a neo-vascularization inhibitor. A previous study indicated that the administration of a thrombolytic drug, etamsylam, significantly prolonged the survival of patients with dermal disorder1. However, few studies have reported the efficacy of sorafenib administration in patients with hand and foot syndrome (HFS).

Aims & Methods: In this study, we investigated the prognosis of sorafenib-treated patients with HFS. HFS grading was conducted according to the Common Terminology Criteria for Adverse Events (CTCAE) v.4.0. 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 introduction of sorafenib in 42 patients with a history of multidisciplinary treatment, such as transcatheter arterial chemoembolization (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 HFS was an independent predictor of HCC (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 factors: age, BCLC staging, dosage, and tumor markers.

Conclusion: The prognosis of hepatocellular carcinoma patients receiving sorafenib treatment was closely related to the presence of HFS and administration period. HFS was a predictor of outcome in patients with hepatocellular carcinoma 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 is a sorafenib administration-inhibiting factor. In our hospital, a system for patients to initially consult the Pharmacists’ Outpatient Clinic, followed by the feed-back of grade-based control strategies to physicians at the outpatient clinic, was established.

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

P0729 UNUSUAL METASTASIS OF HEPATOCELLULAR CARCINOMA

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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. Extraphaeretic 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 In our previous study, we observed some patients with unusual metastatic sites from HCC.3 In this study, we set to evaluate epidemiological features and overall survival of histologically proven advanced HCC patients in a Japanese population.

Aims & Methods: We carried out a retrospective study of 16 patients with unusual metastatic sites from hepatocellular carcinoma out of 1047 cases of HCC treated at the hepatogastroenterology department "Medicine 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 years 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 anacoricotic 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, 5 costovertebral metastases, 2 gastric metastases, 2 brain metastases, 1 cranial metastasis, 1 caval metastasis, 1 ovarian metastasis, 1 nasopharyngeal metastasis, and a case of hepatocellular carcinoma metastases to lung, brain and adrenal gland.4 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 = 0.041). The difference was not significant (p = 0.08).

Conclusion: The incidence of unusual and extraphaeretic metastasis of HCC diagnosed during clinical course was not frequent. The diagnostic procedures for extraphaeretic metastasis have been standardized, however considering the substantial advances in treatment of HCC, the detection of extraphaeretic 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 HEPATOCHELONGIACARCINOMA: AN AGED MULTICENTER RETROSPECTIVE STUDY IN FRANCE

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Introduction: Hepatocelholangiocarcinoma is a rare primary hepatic tumor combining features of both, cholangiocarcinoma and hepatocellular carcinoma (CHC-C). Few data concerning the epidemiology of hHCC-ICC have been published, mainly from surgically treated 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 CHCC patients in a French population. Data from patients treated for historically proven CHCC-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.
Aims & Methods: The aim of this study was to evaluate the clinical manifesta-
tions, risk factors, and prognosis of patients with hepatocellular carcinoma with hepatic involvement. We conducted a retrospective study of patients diagnosed with hepatic lymphoma at our center between 2005 and 2016.

Results: During the 12 years, 36 hepatic lymphomas were identified, 27 primary hepatic lymphomas and 9 with secondary hepatic involvement. The mean age at diagnosis was 53.5 ± 14.6 years and 50% were males. Only one patient had hepatitis B and none had hepatitis C. The majority (94.4%) had symptoms at the time of diagnosis, with fatigue (83.3%), night sweats (61.1%) and loss of weight (52.8%) being the most common. The imaging presentation was that of a single mass in 47.2% of cases, multiple masses in 30.6% and infiltrative mass in 22.2%. The most common lymphoma subtypes were diffuse large B-cell lymphoma (52.8%), MALT lymphoma (11.1%) and Hodgkin’s lymphoma (11.1%). Survival at the end of one year was 63.8% and 27.8% at 5 years. Age > 60 years (p = 0.004) was the only factor that was significantly associated with higher mortality.

Conclusion: Hepatic lymphomas are rare entities that may occur in different ways, with diffuse large B-cell lymphoma being the most common subtype. They presented a 3-year survival of only 27.8% and the age over 60 years was the only factor significantly associated with mortality.

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

References
**P0734** **MIRNA-21 IS OVEREXPRESSED IN PRIMARY BILIARY CHOLANGITIS AND MEDIATES LIVER INJURY AND NECROPTOSIS IN EXPERIMENTAL CHOLESTASIS**

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**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 deleterious processes associated with cholestasis. The functional crosstalk between miR-21 and necroptosis was investigated in vitro.

**Results:** 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.

**Conclusion:** miR-21−/− primary mouse hepatocytes established a functional 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 in comparison with that of mice at both 3 and 14 days. Notably, under BDL, miR-21−/− mice displayed decreased serum levels of liver injury markers compared with WT mice, accompanied by reduced hepatocellular degeneration, oxidative stress and pro-fibrogenic gene expression. Hallmarks of necroptosis were depressed in the liver 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.

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

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**P0735** **IS COMPLETE STONE REMOVAL FOR CHOLEDOCHOLITHIASIS ALWAYS NECESSARY IN EXTREMELY ELDERLY PATIENTS?**


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**Aims & Methods:** The aim of this study was 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-biliary 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) and 16 (5.8%) were diagnosed with incomplete transaction (type E). 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
P0739 TRANRECTAL GALLBLADDER PRESERVING CHOLECYSTOLITHOTOMY AND POLYPECTOMY BY PURE NOTES
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Introduction: Transcolonic and transrectal NOTES in human cases was greatly restricted by the fact of fecal contamination. We developed a detachable intracolic balloon to help keep the colon sterile by blocking the colonic lumen. Although cholecystectomy is widely used for treating gallbladder polyps and gallstones, there is still a controversy about whether or not the gallbladder should be preserved. However, postcholecystectomy syndromes, such as bile duct injury and the correlation with colon cancer, remind us of the importance of gallbladder preservation.
Aims & Methods: Approved by the Independent Ethics Committee, we’ve completed 8 transrectal gallbladder preserving cholecystolithotomy (TRGP) and 3 transrectal gallbladder preserving polypectomy (TRGPP) and 2 combined cases by pure NOTES. Moreover, 1 case of TRGPP was done by hybrid NOTES. As the figures show, the balloon was placed in the transverse colon to block the colonic lumen, and the distal colon cavity was disinfected with povidone-iodine solution. An incision was made on the anterior rectal wall 12–17 cm from the anus. The endoscope was advanced into the peritoneal cavity with liver and gallbladder identified. The bile was aspirated before an incision on the gallbladder wall was made. Stones and/or polyps were found inside of the gallbladder. Stone extractor and biopsy forceps were used to take out the stones. The polyps were coagulated and removed by electric biopsy forceps. The muscular layer and the adventitial layer were successively closed with endoclips. Peritoneal cavity lavage was performed with sterile saline. The rectal incision was closed with endoclips and endoloops tightly. At the end of the procedure, the balloon was pulled out after being deflated.
Results: The mean operation time (from incision making till the last clipping) was 180.5 min. (89–467 min.), 6 hours after anesthesia, the patients could drink water, and liquid diet was resumed 24 hours later. Postoperatively, 4 of the 14 patients fed mild abdominal distention which disappeared within 12 hours when they were able to get off the bed. For 1 patient with acute cholecystitis, a hybrid NOTES with laparoscopy was performed. Moreover, gallbladder drainage and peritoneal lavage were used, and the abdominal pain relieved soon. All the patients were discharged without any adverse events and all felt good during the follow-ups.
Conclusion: The usage of the detachable balloon can prevent the operative field from fecal contamination effectively. TRGPP and TRGP by pure NOTES are suitable for both males and females. Transrectal route provides a novel alternative approach for the treatment of gallbladder polyps and gallstones. To our knowledge, this is the first human case series of transrectal gallbladder preserving cholecystolithotomy and polypectomy by pure NOTES. However, multi-centered, prospective, controlled researches with more cases are needed in the future.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0740 KML001, AN ORAL ARSENIC COMPOUND, AS PALLIATIVE CHEMOTHERAPY IN ADVANCED BILIARY TRACT CANCERS AFTER FAILURE OF GEMCITABINE-BASED CHEMOTHERAPY
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Introduction: Sodium metarsenite (NaAs203; code name KML001) is an orally bioavailable arsenic compound with potential anti-cancer activity. However, the effect of KML001 has not been evaluated in patient with biliary tract cancers. We investigated the potential of KML001 as palliative chemotherapy in patients with advanced biliary tract cancers who non-respond to gemcitabine-based chemotherapy.
Aims & Methods: The study was designed to evaluate safety, tolerability and effectiveness of KML001 as palliative chemotherapy in advanced biliary tract cancer. Inclusion criteria were 1) inoperable or metastatic cholangiocarcinoma and gallbladder cancer, and 2) previous history of failure to gemcitabine-based chemotherapy. Exclusion criteria were 1) naïve patient to chemotherapy, 2) ECOG PS >3, and 3) history of decompensated congestive heart failure, uncontrolled arrhythmia, and QT prolongation (QTc > 480 ms). KML001 (Kominos, Komipharm International Co., Ltd.) was administered as 7.5 mg daily to eligible subjects. Every two months, patient took response evaluation by biliary CT scan.
Results: A total of 44 patients (21 females and 23 males) were enrolled prospectively between November 2011 and October 2014. Mean age of the patients was 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
Aims & Methods: drain 1 or more segments, depending on the number of segments drained, in function of the number of segments drained. The aim of our study was to evaluate the efficiency of hilar stenosis. Our policy is to try to drain the most possible segments of the liver in unilateral or bilateral palliative drainage. Therefore, for this kind of drainage we need to decide the plan of the drainage and to evaluate efficiency and quality of the drainage. All drainages were performed under general anesthesia in a ICU. All patients had been operated for hilar stenosis, and median overall survival from hilar stenosis 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 grade 3 adverse events (AE), and no cases of grade 4 AE. Most common AE was ALT/AST elevation, which was 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 (11.1%) who dropped out due to adverse drug reactions or severe AE.

Table 1: Treatment outcomes

| Study period, mean, mo (IQR) | 1.5 (1.0–10.0) |
| Progression free survival, mo (IQR) | 1.7 (0.8–2.3) |
| Survival from study-enroll, mo (IQR) | 2.5 (1.4–4.9) |
| Best response, n (%) | SD 3 (6.8%), PD 23 (52.3%) |
| Not evaluated | 18 (40.9%) |
| ECOG, n (%) | |
| Increased | 19 (43.2%) |
| Maintained | 24 (54.5%) |
| Morphin requirement, n (%) | increased 8 (18.6%), maintenance 31 (72.1%), decreased 4 (9.3%) |
| Adverse event, n (%) | Grade 1 16 (36.4%), Grade 2 29 (65.9%), Grade 3 12 (27.3%), Grade 4 0 (0%) |
| Drop out cause, n (%) | Drug reaction 1 (2.3%), Adverse event 4 (9.1%), 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%) |

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-respond 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?

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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 function of the number of segments drained. The aim of our study was to evaluate the efficiency of hilar stenosis. The drainage was performed by removing the biliary stenoses and the percutaneous drainage. The choice of the technique was left to the appreciation of the operators. All drainages were performed under general anesthesia in a ICU. All patients had been operated for hilar stenosis, and median overall survival from hilar stenosis 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 grade 3 adverse events (AE), and no cases of grade 4 AE. Most common AE was ALT/AST elevation, which was 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 (11.1%) who dropped out due to adverse drug reactions or severe AE.

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| Drop out cause, n (%) | Drug reaction 1 (2.3%), Adverse event 4 (9.1%), 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%) |

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-respond to gemcitabine-based chemotherapy.

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

P0742 SYSTEMATIC REVIEW AND META-ANALYSIS OF TRANSBADOMINAL AND ENDOSCOPIC ULTRASOUND FOR GALLBLADDER POLYPS

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Introduction: Approximately 0.6% to 4% of cholecystectomies are for gallbladder polyps. The decision to perform cholecystectomy is based on presence of gallbladder polyp on transabdominal ultrasound (TAUS) or endoscopic ultrasound (EUS), or both. This decision is also influenced by whether the polyp is malignant or not. True polyps are neoplastic, either benign (adenoma) or (pre)malignant (dysplastic polyp/carcinoma). True polyps usually need surgery, as they are thought to have malignant potential through the adenoma-carcinoma sequence. (Pre)malignant lesions should be operated sooner than benign lesions. There has been no systematic review and meta-analysis on the accuracy of TAUS and EUS in the diagnosis of gallbladder polyps, true gallbladder polyps and (pre)malignant polyps.

Aims & Methods: The aim was to determine and compare the accuracy of TAUS and EUS for diagnosis of gallbladder polyps, differentiating between true and pseudopolyps and differentiating between (pre)malignant and benign polyps.

Results: A total of 17 studies were included in this review. For diagnosis of gallbladder polyps six studies on TAUS were included. The sensitivities and specificities of the studies ranged from 0.45 to 1.00, and 0.91 to 0.98 respectively. There were no studies on EUS for this topic. For differentiating between true and pseudopolyps, seven studies were included. All seven studies reported on TAUS, four studies also reported on EUS. The sensitivities and specificities of the studies ranged from 0.47 to 1.00 and 0.51 to 0.98 for TAUS, and from 0.63 to 1.00 and 0.84 to 0.96 for EUS. For differentiating between (pre)malignant and benign polyps, five studies were included. Four studies reported on TAUS and three studies on EUS. The sensitivities and specificities of the studies ranged from 0.09 to 1.00 and 0.46 and 1.00 for TAUS and from 0.69 and 0.92, and 0.87 to 0.95 for EUS. There was no impact on the survival according to the different techniques used to drain the bile ducts. To confirm the efficiency 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). There was no impact on the survival according to the different techniques used to drain the bile ducts. To confirm the efficiency 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).
P0743

**DIAGNOSTIC VALUE OF CONTRAST-ENHANCED ULTRASONOGRAPHY IN HIGH MECHANICAL INDEX CONTRAST MODE FOR POLYPOID LESIONS OF THE GALLBLADDER**

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**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 microbubbles 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 polyoid 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 in 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% (13/17), 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.

**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.

**Reference**

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**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% (0.28–0.56) Median: 0.64% Max: 0.53%</td>
<td>0.00 (0.00–0.00)</td>
<td>0.01 (0.00–0.04)</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% (6.4–13.7) Median: 20.2% Max: 60.6%</td>
<td>0.26 (0.16–0.39)</td>
<td>0.03 (0.01–0.07)</td>
</tr>
<tr>
<td>TAUS</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% (6.4–13.7) Median: 20.2% Max: 60.6%</td>
<td>0.03 (0.01–0.07)</td>
<td>0.01 (0.00–0.04)</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% (6.4–13.7) Median: 20.2% Max: 60.6%</td>
<td>0.03 (0.01–0.07)</td>
<td>0.01 (0.00–0.04)</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% (0.19–0.47) Median: 20.1% Max: 95.6%</td>
<td>0.19 (0.07–0.46)</td>
<td>0.02 (0.01–0.05)</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% (0.19–0.47) Median: 20.1% Max: 95.6%</td>
<td>0.19 (0.07–0.46)</td>
<td>0.02 (0.01–0.05)</td>
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</table>
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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 BMI and overall 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 and 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 0.491, CI 0.334–0.721; 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.

Reference
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 poor prognostic factors available at presentation. This score may help to inform patients and guide individualized treatment decisions.

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

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**P0749**

**THE OUTCOMES OF ERCP FOR THE PALLIATION OF MALIGNANT JAUNDICE IN ENGLAND BETWEEN 2001 AND 2015**

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**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:** 49055 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 1.08–1.20) p < 0.001); increasing age 61–70 (1.34, (1.23–1.47) p < 0.001), 71–80 (1.57, (1.44–1.72) p < 0.001), 81–90 (1.83, (1.68–2.00) p < 0.001), p < 0.001); increasing co-morbidity score 1 to 5 (1.09, (1.02–1.16), p < 0.001), 6 to 10 (1.12, (1.06–1.12) p < 0.001), 11 to 15 (1.14, (1.33–1.66), p < 0.001), 16 to 20 (1.92, (1.80–2.07), p < 0.001); advancing year of ERCP 2013/14 (0.76, (0.68–0.90), p < 0.001), 2014/15 (0.85, (0.74–0.98) p < 0.028); and previous renal failure (1.92, (1.77–2.09), p < 0.001) were associated with increased 30 day mortality. Asian ethnicity (OR 0.82, (0.67–0.99), p = 0.036), presence of anastomotic and unspecified parts of biliary tree (0.60, (0.55–0.65), p < 0.001) and upper tertile of unit ERCP activity (>230) per annum (0.86, (0.80–0.93), p < 0.001) were negatively associated with 30 day mortality.

**Conclusion:** Short-term mortality in subjects with malignant biliary obstruction following ERCP was high. A better prognosis was observed in high-volume ERCP units, Asian ethnicity and extrahepatic primary cancers. Male gender, advancing age, increasing co-morbidity score, previous renal failure and mortality were examined by logistic regression.

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

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**P0750**

**EARLY DEVELOPMENT OF NONALCOHOLIC FATTY LIVER DISEASE IN GENETICALLY PREDISPOSED CHILDREN: WHAT IS THE NUMBER OF LIVER STIFFNESS MEASUREMENTS NEEDED FOR A HIGH QUALITY EVALUATION?**

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**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 (rs738499) and TM6SF2 (rs58542926) contribute to the development of NAFLD. It is however unknown whether liver pancreatic and cardiometabolic disturbances coincide in PNPLA3 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 Centre 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, (0.10–0.60) vs GG 26, (0.34, 0.50); GG 27, (0.21, 0.00–0.40, 00); GG 30, (0.26, 0.00, 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, 58; p = 0,015) for the PNPLA3 G homozygote 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 compared to non-carriers. 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.

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**P0751**

**TWO-DIMENSIONAL SHEAR WAVE ELASTOGRAPHY IN CHILDREN: WHAT IS THE NUMBER OF LIVER STIFFNESS MEASUREMENTS NEEDED FOR A HIGH QUALITY EVALUATION?**

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**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 techniques. While they are proved 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 measurements (LSM) needed for a high-quality evaluation using 2D SWE technique. We conducted a prospective study which included 73 children (age range: 3–17 years, mean age 11.73 ± 3.55 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 c5-1 probe. One examiner performed 10 LSM for each child. We randomly extracted 1 LSM, 2 LSM, 3 LSM and 5 LSM from all 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 similar (ICC = 0.91 kPa, 4.25 kPa ± 0.99 kPa, 4.25 ± 1.03 vs 4.2 ± 0.99 kPa vs 4.19 ± 0.99 kPa, p = 0.94). Furthermore, the agreement between medians calculated from 1, 2, 3, 5 and 10 LSMs was excellent (ICC = 0.960, 95% confidence interval: 0.944-0.974).

**Conclusion:** We suggest obtaining 5 LSM for a high-quality evaluation using this 2D SWE technique.

**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 All other authors have declared no conflicts of interest.

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**P0752**

**PERCUTANEOUS EMBOLIZATION OF VISCERAL ARTERY PSEUDO-AneURYSMS – A TERTIARY CENTER EXPERIENCE**

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**Introduction:** Visceral artery pseudo-aneurysms are rare, but potentially fatal if rupture. Pseudoaneurysm usually occurs most frequently after pancreaticitis. Angioembolization 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 ± 2.28 (7–72) years, under- went direct percutaneous embolization for visceral pseudoaneurysm. Most common aetiology for pseudoaneurysm was pancreatitis (16) followed by trauma (3), paracentesis (3) and surgery (1). The site of pseudoaneurysm was splenic artery (13), left gastric artery (3), hepatic artery (3), inferior epigastric artery (3) and gastroduodenal artery (1). Mean size of pseudoaneurysm was 1.8 ± 0.6 (1–3.5) cm. Reasons for choosing percutaneous approach over trans-catheter embolization included - technical difficulties in 11 patients, excess collat- erals to feeding artery in 5 patients, and recurrence after pre- vious 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 ± 1.14 (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 trans-catheter approach.

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

P0753 DEVELOPMENT OF AUTOIMMUNE PANCREATITIS IS INDEPENDENT OF PEPTIDYL ARGinine DEIMINASE-DEPENDENT EXTRACELLULAR TRAP FORMATION

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Introduction: Various forms of pancreatitis (e.g. severe acute pancreatitis, auto-immune pancreatitis type 2) are characterized by an infiltration of neutrophil granulocytes. Yet, despite sharing the feature of granulocytic infiltration, these diseases take opposing natural courses of disease. A novel function of granulo- cytes, the formation of aggregated neutrophil extracellular traps (aggNETs), has been described and called for a reevaluation of the specific role of neutrophils in pancreatitis. We were interested in the specific function of granulocytes in various models of pancreatic inflammation.

Aims & Methods: Experimental models of pancreatic inflammation were employed including caerulein-induced pancreatitis and a novel model of IL-17A-induced pancreatitis. The outcome of disease was characterized by immuno- histochemistry, RNA expression and flow cytometric analyses.

Results: Transgenic systemic delivery of IL-17A alone can induce granulocytosis and neutrophil infiltration to the pancreas. Interestingly, neutrophils do not remain in the interstitium, yet enter the pancreatic ducts and form aggregates in the duc- tular lumen. Our experimental models further indicate that peptidyl arginine deiminate 4 (PAD4) is critical for intraductal aggregate formation and that PAD4-deficiency abrogates disease progression. Mechanistically, we identify the pancreatic juice as a strong instigator of neutrophil extracellular matrix formation. Characteristic single components of pancreatic juice, such as bicarbonate ions and calcium carbonate crystals, induce aggregated NET formation.

Conclusion: Granulocytes aim to contain an inflammatory focus and enter pan- creatic ducts with potentially detrimental consequences to dependent areas of the organ.

Disclosure of Interest: M. Leppkes: M.L. has received a research scholarship from MSD Sharpe & Dohme GmbH, Germany. No financial or non-financial conflict of interest exists related to this study.

All other authors have declared no conflicts of interest.

P0755 MITOCHONDRIAL FUNCTION AND DISTRIBUTION IN PANCREATIC DUCTAL EPITHELIAL CELLS

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Introduction: Mitochondrial dysfunction is a hallmark of several disease patho- genesis including acute pancreatitis (AP). Our results suggest that mitochondrial damage is crucial in bile acid induced inhibition of pancreatic ductal HCO3− secretion, however the details of mitochondrial function and dysfunction in pan- creatic ductal epithelial cells (PDEC) is not known yet.

Aims & Methods: The aim of our study was to characterize the mitochondrial function and function in PDEC under physiological and pathophysiological conditions. Guinea pig and Cyclophilin D WT and knock out (KO) mouse pancreatic ducts were used. Mitochondrial distribution was studied by electron microscopy (EM). Mitochondrial membrane potential (ΔΨm) was measured by confocal microscopy and pancreatic ductal HCO3− secretion by microfluorometry.

Results: EM measurements revealed that the mitochondrial density is signifi- cantly higher on the apical side of the guinea pig PDEC compared to the middle or the basal segment in HEPES solution. The apical mitochondrial den- sity increased further in CO2/HCO3− buffered solution, or during the adminis- tration of 5 μM forskolin. It was also confirmed by ΔΨm measurements as we detected increased TRM3 fluorescence on the apical side of the PDEC during stimulation. The genetic KO of cyclophilin D significantly reduced the loss of ΔΨm and protected pancreatic ductal HCO3− secretion during the adminis- tration of 500 μM chenodeoxycholic acid.

Conclusion: Our results revealed that mitochondrial function has a central role in the function of PDEC presumably by providing ATP for fluid and ion secretion. On the other hand the opening of MPTP seems to be crucial in the bile acid induced toxicity offering a potential therapeutic target in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0756 RELATIONSHIP BETWEEN NUCLEOTIDE-BINDING OLIOMELGOCYTOID-TRAINING PROTEIN 2 VARIANTS AND SEVERITY OF ACUTE Pancreatitis

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Introduction: Infectious complications are main causes of mortality in severe acute pancreatitis. Most infections in AP are intestinal origin (2). The Nucleotide oligomerization domain 2 (NOD2) is a NOD-like receptor family that senses and responds to bacterial wall peptides (3). Guenther et al. reported that p.R702W mutation was found to be associated with multipl organ failure and mortality in patients with AP (4). We aimed to investigate whether there is a correlation between NOD2 variants and AP severity in this study.

Aims & Methods: Group 1 (n = 27) was healthy. Group 2 (n = 36) and Group 3 (n = 32) were composed of mild and severe pancreatitis patients according to the Atlanta 2012 classification (5). Four NOD2 variants and serum interleukin-6 (IL-6), Tumor Necrosis Factor-α (TNF-α) 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. 1007S 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 NOD2 variants between Groups. Serum IL-6, TNF-α 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 NOD2 variants.

Conclusion: Our results suggest that there may be a relationship between the presence of p.R702W variant and severe pancreatitis.

References

2. Li Q, Wang C, Tang C, He Q, Li N, Li J. Bacteremia in patients with acute pancreatitis and mortality in patients with AP (4). We aimed to investigate whether there is a correlation between NOD2 variants and AP severity in this study.

P0757 A LUMEN APPEARING METAL STENT WITH ANTI-REFUX VALVE FOR ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF PSEUDOCYST AND WALLED-OFF NECROSIS


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Introduction: Pancreatic pseudocyst (PC) and walled-off necrosis (WON) are frequent complications of acute pancreatitis. Drainage procedure is required when complications and complications such as pain, bilateral obstruction and infection occur. With technological advances, endoscopic ultrasonography (EUS)-guided drainage replaced surgical treatment and has become the standard treatment. We developed a novel fully-covered lumen-apposing metal stent (LAMS) with anti-reflux valve for the purpose of preventing complications such as stent migration or reflux of bowel contents while improving the stent patency. The aim of this study is to investigate the efficacy and the rate of complications of EUS-guided drainage using novel LAMS with anti-reflux valve for PC and WON.

Aims & Methods: We compared the treatment outcomes and the rate of complications of EUS-guided drainage using LAMS with EUS-guided drainage using plastic stents. Ten patients underwent EUS-guided drainage using the novel LAMS (LAMS group) and eighteen patients using conventional plastic stents (plastic stent group) from December 2013 to October 2016. A novel LAMS used in this study was designed to have bilateral flare ends, 4 anti-migration flaps (at each side) and a pair of 2 anti-reflux valves (inside the lumen). Technical success is defined as a successful placement of the LAMS, and clinical success is defined as a resolution of the PC/WON and disappearance of the symptoms.

Results: Among 10 patients treated with LAMS, 4 patients had complicated PC and 6 patients had WON. In plastic stent group, 15 patients had complicated PC and 3 patients had WON. The median size of fluid collection before treatment was 69.5 mm (range, 48-214 mm) in LAMS group and 92.0 mm (56-253 mm) in plastic stent group. Median duration of stent placement was 47 days (1-355 days) in LAMS group and 55 days (1-216 days) in plastic stent group. Treatment outcomes of the LAMS group were not inferior despite the significantly higher proportion of WON patients in the LAMS group compared to the plastic stent group. There were no statistically significant differences in the technical success rate (90%; versus 94.4%; p = 0.95), clinical success rate (70% vs. 77.8%; p = 0.491), resolution rate (76.8% vs. 80.7%; p = 0.705), complication rate (40% vs. 50%; p = 0.456). In LAMS group, 3 patients experienced mild fever and 1 patient showed peritonitis due to immediate stent migration. In plastic stent group, mild fever was developed in 4 patients, all patients had nausea and clinical success is defined as a resolution of the PC/WON and disappearance of the symptoms.

Conclusion: Among 10 patients treated with LAMS, 4 patients had complicated PC and 6 patients had WON. In plastic stent group, 15 patients had complicated PC and 3 patients had WON. The median size of fluid collection before treatment was 69.5 mm (range, 48-214 mm) in LAMS group and 92.0 mm (56-253 mm) in plastic stent group. Median duration of stent placement was 47 days (1-355 days) in LAMS group and 55 days (1-216 days) in plastic stent group. Treatment outcomes of the LAMS group were not inferior despite the significantly higher proportion of WON patients in the LAMS group compared to the plastic stent group. There were no statistically significant differences in the technical success rate (90%; versus 94.4%; p = 0.95), clinical success rate (70% vs. 77.8%; p = 0.491), resolution rate (76.8% vs. 80.7%; p = 0.705), complication rate (40% vs. 50%; p = 0.456). In LAMS group, 3 patients experienced mild fever and 1 patient showed peritonitis due to immediate stent migration. In plastic stent group, mild fever was developed in 4 patients, all patients had nausea and clinical success is defined as a resolution of the PC/WON and disappearance of the symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.
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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 with the outcome of endoscopic treatment for WON remains unclear.

Aims & Methods: This study tried to retrospectively correlate the clinical characteristics 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 morphology and extent of WON was investigated.

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 step up approach was needed in 19 patients. DEN, percutaneous drainage and surgery were done in 2, 4 and 3 patients, respectively. All patients with step up approach had successful outcomes. Three patients died before step up approach was performed, but death was not related with the procedure itself. The patients who needed 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 were significant necessity of necrosectomy during the treatment (p < 0.01). Bleeding as adverse events was observed in 3 patients (6.2%). Two patients improved with conservative therapy and 1 patient underwent transcatheater arterial 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.
admission to hospital. A receiver operating characteristic (ROC) analysis was built at day 0 for the prediction 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 IL1 cytokines Il6, IFN-g and TNF-α can be measured for the prediction of severe AP, while TH2 cytokines IL4, IL13, GM-CSF, for the prediction of a mild or moderate condition. A stepwise analysis showed that IL13 and IFN-g 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/IFNg index. This ratio was significantly higher in patients with mild AP when we compared between groups (p = 7.36 × 10–8). 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.

Conclusion: AN IL13/IFNg ratio that could be of great interest in the assessment of prognosis in AP. A high value of the IL13/IFNg ratio at hospital admission is associated with a good prognosis of AP.

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

P0763 CORRELATION BETWEEN POST-ERCP SERUM AMYLASE LEVELS AND CT FINDINGS IN ERCP-INDUCED PANCREATITIS: A PROSPECTIVE MULTICENTER OBSERVATIONAL STUDY


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Introduction: According to the diagnostic criteria by Cotton et al.1, post-ERCP acute pancreatitis is defined as the persistence of serum amylase levels three times or higher than the upper limit of the standard for 18 ± 6 h after ERCP with persistent upper abdominal pain for 4 h or longer. However, the criterion of three times or higher than the upper limit was mostly based on retrospective studies, and has not been necessarily supported by imaging diagnosis. In this study, using CT findings as the gold standard of ERCP-induced pancreatitis, we investigated the serum amylase level that suggested ERCP-induced pancreatitis in a prospective multicenter study.

Methods: In a high-volume center, 2078 patients examined by ERCP between April 2015 and May 2016 were prospectively followed. CT was performed in patients whose serum amylase level exceeded the institutional upper limit on the day after ERCP (after 12–20 h) to investigate the presence or absence of pancreatectasis. Two expert radiologists evaluated the diagnostic images blinded and judged the presence or absence of pancreatitis based on the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade. Patients with a preexisting high amylase level, clinically diagnosed with acute pancreatitis, had a difficult imaging evaluation due to the presence of the Balthazar grade.

Results: Amylase levels increased on the following day in 402 (21.5%) of the 1868 patients included, and 340 patients examined by CT were included in the analysis. ERCP-induced pancreatitis was diagnosed based on imaging in 204 patients (10.9%). The cutoff amylase level for judging the presence or absence of pancreatitis on the following day was 2.73 times higher than the institutional upper limit (sensitivity: 73.3%, specificity: 91.1%, positive likelihood ratio: 2.24, negative likelihood ratio: 0.68) with an area under the curve (AUC) of 0.855. The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69). The cutoff amylase level for judging the presence or absence of pancreatitis on the day following ERCP was 2.75 times higher than the institutional upper limit (sensitivity: 45.6%, specificity: 45.6%, positive likelihood ratio: 1.99, negative likelihood ratio: 0.69).

Conclusion: 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. 28 (60.9%) cases were managed with necrosectomy (median 1, IQR 2) in which 15 (32.6%) of them had concurrent necrosyic drainage prior to each procedure. 43 (93.5%) patients were treated successfully while two refractory cases required superimposed insertion of a fully-covered 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 injection of adrenaline, one managed by arterial embolization. Both the bleeding site 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>
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<tbody>
<tr>
<td>Age, year</td>
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<tr>
<td>Male sex</td>
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<tr>
<td>Comorbidities</td>
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<tr>
<td>Diabetic mellitus</td>
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<tr>
<td>Cardiovascular disease</td>
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<tr>
<td>Chronic obstructive airway disease</td>
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<tr>
<td>Malignancy on chemotherapy</td>
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<tr>
<td>Cause of pancreatitis</td>
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<tr>
<td>Gallstones</td>
</tr>
<tr>
<td>Miscellaneous</td>
</tr>
<tr>
<td>APACHE II score</td>
</tr>
<tr>
<td>White cell count (x1000/μL)</td>
</tr>
<tr>
<td>C-reactive protein (mg/L)</td>
</tr>
<tr>
<td>Total bilirubin (mg/dL)</td>
</tr>
<tr>
<td>ALT (U/L)</td>
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<tr>
<td>Wall-off necrosis (WON)</td>
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</table>
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 0.5 to 1%, among them, one case managed by a fully-covered tubular metal stent (n = 10 mm)8: diverted to nasocystic drainage (n, %) 15(32.6). Spontaneously migration 8, Stent revision 12(26.1), Lumpy/mass content 18(39.1). Gram positive 7(15.2) 5, healthercancer, post ERCP (n = 1); idiopathic (n = 3); Enterococcus spp (n = 5); early: within 48 h; early mild 14(30.4); lumen-apposing metal stent-assisted drainage with high technical and clinical success rate. Bleeding and stent migration are the two major adverse events during the management that can be managed accordingly.

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

References


Disclosure of Interest: All authors have declared no conflicts of interest.
cohort study based on the anonymous computerized database of hospital discharges in Veneto Region (North-East of Italy). The primary 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) were the endpoints of interest. Admissions to 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 3.2% were observed. Characteristics of the patients were: mean age: 62.2 ±/−19.3y, 54% Males (M); Female (F) mean age: 65y±/−19.3y, male mean age: 59.4±/−19.3y (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 44:4 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 < 0.001) whereas ICU requirement was seen in significantly more patients in AP group (59; 37%) than in ACP (5; 11%) and RAP (0; 0%) (p < 0.001). RAP, 26% of AP, 2 (4.4%) of ACP, but none of patient with RAP needed ventilatory support (p < 0.001), while 13 (8%) of AP patients, 1 (2.2%) of ACP and none with RAP required dialysis (p < 0.05). Mortality in AP, ACP and RAP was 29 (18%), 2 (4.4%), 0 (0%) respectively (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
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Introduction: Recurrent acute pancreatitis (RAP) and acute on chronic pancreatitis (ACP) are likely to have less severe disease and local complications in comparison to acute pancreatitis (AP) possibly due to underlying chronic changes of 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 hospital stay, need for percutaneous catheter drain (PCD), surgery and mortality.
Results: Out of 248,158 (64%) patients had AP, 45 (18%) patients had RAP and 43 (18%) patients had ACP. 86 (54%) of AP, 4 (9%) 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) as compared to RAP (18.80±14.5±8.82±11.2±3.3±6±4.4, p < 0.001)

P0768 ACUTE PANCREATITIS IN PATIENTS WITH IPMNS: RETROSPECTIVE STUDY OF 346 PATIENTS OBSERVED FROM 2009 TO 2016
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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 and 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 presence of IPMN and acute pancreatitis, and the frequency of 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 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 the 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 unifocal 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 an IPMN central and mixed type, predominantly localized to 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
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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 =0.0001). The apoB/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.
References


P0770 IMAGING IN CHRONIC PANCREATITIS – DATA FROM THE SCANDINAVIAN-BALTIC PANCREAS CLINIC DATABASE

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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 diagnostic-criteria were included. Structural changes were graded according to the M-ANNHEIM-classification. A subgroup was also scored by the modified Cambridge score. Clinical data on disease-duration, nutrition, exocrine function, pain, alcohol/smoking habits and frequencies of malnutrition and diabetes were collected. A grouping of the M-ANNHEIM score (A: Normal = 0, B: Minimal change = 1 2 and C: Moderate/marked = 3 4) was performed for correlation to the clinical data.

Results: The database contains 932 patients (623 men). The M-ANNHEIM-score was present from 446 subjects and both imaging scores from 93 subjects. Correlation of the imaging scores: The imaging-scores demonstrated equivocal (22.9%), 2: Mild (12.1%), 3: Moderate (17.9%) and 4: Marked (51.7%). According to M-ANNHEIM subjects were graded as 0: Normal (8.1%), 1: Minimal change (20.3%), 2: Mild (20.3%), 3: Moderate (25.6%) and 4: Marked (25.6%). The correlation to clinical data was poor. Poor agreement in normal/minimal-change groups may reduce the value of grading to the clinical data.

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)

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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 fecal elastase. Standardised Osteodensitometry was performed by dual-energy x-ray absorptiometry (DEXA). Categorical variables were analysed by means of Fisher's exact test, and continuous variables by t-test. A logistic regression analysis was performed to identify risk factors for osteoporosis or osteopenia. The relationship between continuous variables was assessed with Pearson correlation coefficient.

Results: 211 consecutive CP patients were enrolled at 6 Centres (67% M; mean age 60 ± 13 years). Osteopenia was diagnosed in 42% and osteoporosis in 22% of cases. Aetiology was alcoholic in 43%, and 18% had severe CP. 56% of patients had PEI. The mean value of vitamin D was 20ng/ml and 56% of cases had vitamin D insufficiency. There was no correlation between vitamin D levels, or elastase levels and t-score at either spine or femur. Alcoholic aetiology was associated with higher risk of having low levels of fecal elastase (p<0.02) and with lower level of vitamin D (p<0.01) but not with osteoporosis or osteopenia. 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 0.8 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

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Introduction: SPINK1 is a gene coding for the inhibitor of the cationic trypsino- gen. 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 40 years (23–73) and 9 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 calculations (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.
P0773 EXOCRINE FUNCTION, NUTRITION AND ENZYME TREATMENT IN THE SCANDINAVIAN BALTIC PANCREAS CLUB DATABASE - PRELIMINARY DATA

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Introduction: The Scandinavian-Baltic-Pancreas-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.


Clinical parameter (A) (B) (C) Proven
Exocrine pancreatic function (%)

| 33 | 16 | 51 |

Faecal Elasticity (μg/g) (mean (SD)) < 0.001

| 368 (161) | 128 (144) | 51 (69) |

Nutrition: BMI (kg/m2) (mean (SD)) < 0.005

| 24.6(4.9) | 23.7(4.3) | 22.6(4.3) |

Frequency BMI < 18.5 (%) < 0.005

| 5 | 16 |

Vitamin D: Frequency <25nmol/L (%) (I vs II) < 0.005

| 7.4 | 23.7 | 17.6 |

Enzyme Treatment (lipase-units/day) (median [IQ range]) < 0.005

| 00-75000 | 120000 |

Hemoglobin: (median [IQ range]) < 0.05

| 11.8(2.7-3.0) | 10.7(2.8) |

Faecal Elastase and disease duration (years)**

| <10: 143(175) | >10: 91(118) |

p < 0.001. 9% received <50000 lipase-units/day. 14 subjects having FE > 200 received enzymes, 48 subjects with FE < 100 received no enzymes.

**no age/sex differences in EPF

Conclusion: In our material frequency of EPI is higher than reported in the NAPS2 study (31%). Consequences of EPI were lower BMI, more frequent underweight, higher enzyme-doses and lower haemoglobin. Need for vitamin D supplements was highest in the group with mild EPI not receiving enzymes. Exocrine function was correlated with disease duration, but neither with age nor gender.

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

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Introduction: Smoking represents an independent risk factor for the development of chronic pancreatitis (CP). It is well documented that secretion of pancreatic ducal alkaline fluid (which is regulated mostly by the anion exchanger and CFTR) is diminished in CP.

Aims & Methods: In this study we would like to understand whether 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 Ca2+ concentration and pH were evaluated by microfluorometry. Fluid 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 Cl− current of CFTR Cl− channel. CSE incubation altered the pattern of carbachol-induced Ca2+ signal in pancreatic ducts suggesting that some of the inhibitory 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 UNKp.

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

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P0777 THE NOVEL ROLE OF GASTROKINE, A GASTRIC TUMOR SUPPRESSOR PROTEIN, IN PANCREATIC CARCINOGENESIS

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Introduction: Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignant 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 primarily 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 Ptf1aCre (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 & Objectives: GKN2 expression was confirmed 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 pancreatic carcinogenesis in vivo, we established mouse models by introducing 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 respectively. The capacity of acinar cells lacking Gkn1 and Gkn2 to transdifferentiate spontaneously, and in 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.

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P0781 THE INTRACELLULAR CYTOSKELETON MARKER IS OVEREXPRESSED IN Pancreatic Ductal Adenocarcinoma

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Introduction: Intra- and extra-cellular involvement are lacking and their relationship with the caxxhia 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 activin protein expression in PDAC related to the clinical stage and survival. There were included patients with histological proven of adenocarcinoma (n = 124). The plasma levels of Activin A were analyzed using western blot. The t test was used to determine the difference between the two groups. Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

Results: Ezrin protein expression was 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

P0782 QUALITY OF LIFE DURING CHEMOTHERAPY IN JAPANESE PATIENTS WITH UNRESECTABLE ADVANCED PANCREATIC CANCER

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Introduction: FOLLIRINOX (FFX) or nab-paclitaxel plus gemcitabine (GnP) and standard regimens 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(s): The aim of this study was to assess QoL during chemotherapy in patients with advanced pancreatic cancer. Twenty-one Japanese patients with unresectable 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 Japanese 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 every month after initiation of chemotherapy. Changes at 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 years and BMI of 22.1 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)%.

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Results: Thirteen male and 8 female patients were included, with a median age of 65 years and BMI of 22.1 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 diarrhea (p = 0.049) were more frequently observed, while global health status (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 diarrhea 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.

References
treated by EUS-CPN. Clinical information was obtained retrospectively from the medical charts of patients reporting symptoms associated with the pain 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 5 ml of bupivacaine mixed with 15 ml of pure ethanol on the celiac trunk. A contrast 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, 12 weeks after EUS-CPN and tumor disease progression. Response rate was 81.4% (57/70). The median duration of pain relief was 4 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 follow-up after the diagnosis of PC relapse was 16 (14:46) months. Among the response group and non-response groups, there were significant differences in the prevalences of liver metastasis (47 vs. 92%, P = 0.001) and metastasis to the pancreas (20 vs. 37%, P = 0.029). The difference in the serum levels of CEA (median: 6.7 vs. 17.1 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 compared to the non-response group (median: 5.8 vs. 1.0 months, P = 0.01). Conclusion: Our study demonstrated that EUS-CPN had therapeutic effect on intractable pain in unresectable PC in the long follow-up. Repeat EUS-CPN was also effective in patients who showed a treatment response to the first EUS-CPN. Patients who benefited from EUS-CPN had stronger cancer inflammation and aggressiveness, indicative of higher CRP, CA19-9 and lower albumin levels, and the higher frequencies of liver metastasis.

Disclosure of Interest: All authors have declared no conflicts of interest.
Treatment efficacy and adverse events of gemcitabine plus nab-paclitaxel used for metastatic pancreatic cancer: a retrospective cohort study

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Introduction: Pancreatic cancer is a lethal disease and the fifth most common cause of cancer-related death in Korea. Pancreatic cancer patients show dismal prognosis with a 5-year survival rate less than 10%, because the majority of patients are diagnosed in advanced stage. Since the late 1990s, gemcitabine-based chemotherapy has been used as a mainstay of metastatic pancreatic cancer (mPC) treatment and various combination therapies (such as combination with capetebine or erlotinib) had been attempted to improve the patients’ survival, so far. Recently, MPACT trial, a randomized phase III trial showed that combination of gemcitabine and nab-paclitaxel had statistically significant survival benefit compared with gemcitabine monotherapy. Based on the results of this trial, gemcitabine with nab-paclitaxel combination therapy is currently being used as a standard therapy for pancreatic cancer patients. However, only 2% of the MPACT trial study population was Asian, and other researches on Asian population group are also lacking. Therefore, we investigated treatment efficacy and safety of gemcitabine plus nab-paclitaxel combination therapy for mPC treatment in Korean population.

Aims & Methods: Total 66 metastatic pancreatic cancer patients treated with gemcitabine (1000mg/m²) and nab-paclitaxel (125 mg/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 Cohort 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 1487.5 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 dermatological 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>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of chemotherapy</td>
<td></td>
</tr>
<tr>
<td>Cycles (28-day schedule)</td>
<td>5 (2–12)</td>
</tr>
<tr>
<td>Duration, days</td>
<td>141 (32–435)</td>
</tr>
<tr>
<td>Efficacy of Chemotherapy</td>
<td></td>
</tr>
<tr>
<td>Overall survival - months (95%CI)</td>
<td>12.0 (9.515–14.485)</td>
</tr>
<tr>
<td>Progression-free survival - months (95%CI)</td>
<td>7.8 (5.021–10.579)</td>
</tr>
<tr>
<td>Adverse events</td>
<td></td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
<td>36 (54.5%)</td>
</tr>
<tr>
<td>Grade ≥ 3 neuropathy</td>
<td>12 (18.2%)</td>
</tr>
<tr>
<td>Grade ≥ 3 Neutropenia</td>
<td>30 (45.5%)</td>
</tr>
<tr>
<td>Febrile neutropenia</td>
<td>10 (15.2%)</td>
</tr>
<tr>
<td>Administration of G-CSF</td>
<td></td>
</tr>
<tr>
<td>Grade ≥ 3 adverse event</td>
<td>11 (16.7%)</td>
</tr>
<tr>
<td>General weakness</td>
<td>32 (48.5%)</td>
</tr>
<tr>
<td>Dermatologic adverse event</td>
<td>28 (42.4%)</td>
</tr>
<tr>
<td>Dose reduction due to AE</td>
<td></td>
</tr>
<tr>
<td>Gemcitabine</td>
<td>21 (31.8%)</td>
</tr>
<tr>
<td>nab-paclitaxel</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Delay of administration due to AE</td>
<td></td>
</tr>
<tr>
<td>n (%)</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Cessation of administration due to AE</td>
<td></td>
</tr>
<tr>
<td>n (%)</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.

References

Impact of preoperative EUS-FNA on peritoneal recurrence and survival in patients with pancreatic cancer

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Introduction: Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) is a useful and safe method for tissue confirmation of malignancy. This method has improved the tumor needle placement 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 images findings.

Results: Median length of follow-up was 23 months (range 1–94 months). A total of 82 patients had peritoneal recurrence; 34.6% (27/85) in EUS-FNA group vs. 28.2% (89/316) in Non-EUS-FNA group (P = 0.26). Cancer-free survival and overall survival were not different between the groups: median cancer-free survi- val in EUS-FNA group was 10.8 months compared with 10.6 months in Non-EUS-FNA group (P = 0.83), and median overall survival in EUS-FNA group was 56.4 months compared with 56.7 months in Non-EUS-FNA group (P = 0.93).

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.

References
hENT1-positive patients (MST: 25 versus 25, respectively). We suspect that genetic factor may contribute to this observation variability.

Aims & Methods In the present study, we evaluated hENT1 and dihydroxyri-
dine dehydrogenase (DPD: enzyme involved in the degradation of tegafur) expression in EUS-FNAB samples for evaluating and predicting the clinical efficacy of 5-FU treated patients. EUS-FNAB samples were obtained prior to GS-CRT administration. In total, 95 formalin-embedded PDAC speci mens were obtained. In the samples determined to have sufficient material remaining following cytological/histological examination (n = 76), hENT1 expression was evaluated via immunohistochemical (IHC) examination. An additional DPD analysis was performed in those samples determined to have sufficient material remaining (n = 58).

Results By reusing the EUS-FNAB 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 patients (MST = 33.4 months, P < 0.001), compared to hENT1-negative patients (MST = 15.5 months, P < 0.001). As for DPD, MST was significantly longer in DPD-negative patients (33 months versus 14 positive, P < 0.001). In the multivariate model including 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 distant metastasis after GS-CRT), only hENT1 expression (HR = 3.51; 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-FNAB 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


P0789 EVALUATION OF THE EFFICACY OF ENDOCOSCOPIC SPHINCTEROTOMY IN THE TREATMENT OF SYMPTOMATIC INTRA-ACinar IPMNs WITH Worrisome Features: A MULTICENTER FRENCH RETROSPECTIVE STUDY J. González1, D. Lorenzo1, J.P. Ratone2, A. Culeto3, P. Lévy4, M. Giovannini5, M. Barthel1

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Introduction: Intraductal Papillary Mucinous Neoplasms (IPMN) require a close follow-up with early detect worrisome features, which imply a pejorative evolution towards dysplasia and surgery. However, some patients are symptomatic including post-prandial pancreas related abdominal pain (PPAP) or recurrent acute pancreatitis (RAP). An accurate diagnostic is currently not done if no symptoms are risk factor of cancer in IPMN, and there are no data about the efficacy of endoscopic sphincterotomy (ES) to manage them.

Aims & Methods This was a retrospective multi-centered observational study in 4 tertiary endoscopy units of 27 patients that underwent ES for symptomatic IPMN without worrisome features nor surgical indication were considered. Six were excluded (4 lack of data; 1 pseudocyst; 1 adenocarcinoma), thus 21 were analyzed. Age, sex, medical history, time of follow-up, characteristics of IPMN and ERCP procedure, clinical success, evolution and need for surgery was recorded. The primary endpoint was to assess the efficacy of ES for improving the symptoms of pain related to IPMN. The efficacy was defined as the resolution or the decreasing > 50% of the symptoms’ frequency. The secondary endpoint was to document the need for a second ES, the occurrence of WF during follow-up, the need for surgery and its indications.

Results There were 10 men and 11 women involved, with a mean age of 66 years old [45–87] and a mean total follow-up of 105 months [17–276]. Their symptoms were PPAP in 6 patients and RAP in the 15 others (5 being severe AP), with a mean of 3.6 episode/year [1–12]. The delay between diagnosis and ES was 41 months [1–192] and the patients were followed by MRI (81%), EUS (95%) CTscan (36%) or by alternating (MRI and EUS) for 45%. The IPMN were involved in a pancreatico-biliary duct in 11 patients (52.4%), a main pancreatic duct < 7 mm. The mean number of cysts was 3.5 [1–10], the largest measuring 12.7 mm [5–25] mean. They were located for 59% in the head, 17% in the body or tail, and they were diffuse in 24%. None patient had a normal endoscopy- ERC performed in 13 cases (95% of the cases with 5 pancreas divisum, 2 pre-cut required), associated with a biliary ES in 33% of the cases. A prophylaxis with NSAIDS was carried out in 38% of the cases and a plastic stent placement in 33%. There were 4 post-ERC benign pancreatitis, and the mean follow-up after ES was 54 months [13–167]. The clinical efficacy rate as defined after one session was 81% (17/21). Among them, one had a late recurrence (41 months) and underwent a second ES session with final success, whereas 4 have been operated (2 for initial pain, 2 for WF). Among the patients whom failed (4/21), one had a second ES with final success (2 months after surgery), thus 5 finally had surgery. The two groups were comparable in terms of age, sex, mean follow-up time, and characteristics of IPMN. The final efficacy of ES was 86% (19/21). In total seven patients were operated after a mean of 19 months of follow-up, 24% if success of ERCP and in 75% if failure. The indications (e.g., RAP WF (n = 4) or pain (n = 3)). The histopathology showed four low-grade dysplasia, one high-grade dysplasia, and two no dysplasia (=surgery for pain). No patients evolved towards adenocarcinoma in the follow-up.

Conclusion ES for symptomatic IPMN without WF is effective in 81% of the cases. The number of ES is to be considered for an efficacious indication for surgery, since no patients developed with cancer after a follow-up greater than 5 years.

Disclosure of Interest: M. Barthet: Consultant for Boston Scientific

All other authors have declared no conflicts of interest.
Aims & Methods: In this study, we aimed to overcome the subsampling issue and to establish a more reliable framework for 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 clinically relevant mutant KRAS variants was examined using a Bio-Rad QX200 droplet digital PCR platform. Plasma samples from patients with colorectal cancer (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 concurrent chemo-radiation therapy (CCRT), we applied the technique of long pre-amplification cycles followed by a second-run ddPCR to sufficient approximatively 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: ANALYSIS OF CLINICAL PREDICTIVE FACTORS AFFECTING THE USE OF SECOND-LINE CHEMOTHERAPY FOR THE PATIENT OF ADVANCED PANCREATIC CANCER**

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Introduction: Benefit of second line chemotherapy (SL) after failed first-line chemotherapy in 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 chemotherapy for advanced pancreatic adenocarcinoma at Yeouido University Hospital between January 2010 and December 2014 were retrospectively reviewed. Significant clinical parameters regarding second line related survival were identified using predictive factor models.

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 factors significant to OS2 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 first-line 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 J, Porto Medical School, Porto/Portugal
9. Kim ST, Choi YJ, Park J, Porto Medical School, Porto/Portugal
and antifibrotic properties. Increasing evidences point out MSC action via subcellular extracellular vesicles (EVs). MSC EVs recapitulate 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 the Duodenal Mucosal Resurfacing (DMR) procedure in a single-arm, open-label, multicenter study.

Aims & Methods: In this endoscopic DMR procedure, the duodenal mucosa was treated with hydrothermal ablation using a patented balloon catheter. Efficacy was analyzed in a modified intent-to-treat cohort (mITT, patients who received ≥1 ablation) stratified into baseline alanine aminotransferase (ALT) level tertiles — lowest (ALT < 28 U/L), middle (28 ≤ ALT < 37 U/L), and upper (ALT ≥ 37 U/L). For each subgroup, HOMA-IR, HbA1c, and ALT reductions were compared to baseline. All results are expressed as mean (95% CI).

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

Reference

P0796 IMPROVEMENT IN HEPATIC TRANSAMINASES OVER 12 MONTHS AFTER SINGLE PROCEDURE DUODENAL MUCOSAL RESURFACING FOR TYPE 2 DIABETES PATIENTS

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Introduction: Type 2 diabetes mellitus is a common disease with a high prevalence and mortality. Fatty liver disease are highly prevalent, often overlapping metabolic disorders where upstream insulin resistance is thought to be a common pathogenic driver. Simultaneous treatment of both conditions has been reported with insulin sensitizing interventions including lifestyle, medications, and endoscopic procedures. Here we report the 12-month follow-up of a single procedure duodenal mucosal resurfacing (DMR) for patients with type 2 diabetes.

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

Reference
Peroral administration of rebamipide in addition to proton pump inhibitor (PPI) was reported to be effective to promote ulcer healing after endoscopic submucosal dissection (ESD). In this pilot study, we assessed the efficacy and safety of a novel rebamipide solution as a submucosal injection agent for ESD using in vivo porcine models.

**Aims & Methods:** The protocol was approved by the ethics review board of our animal experimental laboratory in advance (13055 -(0)). ESDs of about 30 mm in diameter were performed at four sites in the stomachs of three pigs. An endoscopic submucosal dissection (ESD). In this pilot study, we assessed the efficacy and safety of a novel rebamipide solution as a submucosal injection agent for ESD using in vivo porcine models.

**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 it is critical for ESD procedure to prevent postoperative bleeding. Vonoprazan, a potassium-competitive acid blocker (P-CAB), has a strong and continuous inhibition of gastric acid secretion, and is expected to improve effectively ESD-induced gastric ulcerations compared to the treatment with PPIs.

**Aims & Methods:** To determine whether vonoprazan can ameliorate more effectively ESD-induced gastric ulcerations and can reduce the incidence of postoperative bleeding than PPIs, we compared healing rate of ulcerations and bleeding incidence in the patients treated with vonoprazan with those treated with PPI. 139 patients who underwent ESD 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, 22 esomprazole, 11 lanoprazole or 32 rabeprazole) for 4 weeks (PPI group), and subsequently underwent endoscopic evaluation for evaluation of ulcer size and intra gastru muscle area. The ulcer areas were approximated by multiplying the length (mm) by the width (mm).

**Results:** The results of vonoprazan and PPIs were different significantly (p = 0.0189) different between P-CAB and PPI groups. The post-ESD bleeding incidence (6.8%) in the P-CAB group were not significantly different (p = 0.0189) different from that (5.8%) in the PPI group. The intra gastric pH at 4 weeks after ESD in the P-CAB group was significantly higher than that in the PPI group (6.9 ± 1.0 vs 6.1 ± 1.9, respectively, p = 0.0028).

**Conclusion:** 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.

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**References**

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**INTRODUCTION:** Endoscopic submucosal dissection (ESD) permits en bloc resection for large lesions. The number of the patients taking anti-thrombotic agents including low-dose aspirin (LDA) has increased. The Japanese guidelines recommended 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 histopathology of ulcer after 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 increase the delayed bleeding rate, we retrospectively investigated the delayed bleeding rate in 153 patients receiving antithrombotic therapy with 512 patients without that. Furthermore, we compared the delayed bleeding rate in the patients taking antithrombotic therapy with that in the patients with cessation of antithrombotic therapy or with heparin bridge therapy. The patients who were discontinuing antithrombotic agents were treated with continuation of aspirin or clopidogrel. The cessation period of antithrombotic therapy before ESD followed the guidelines for therapeutic endoscopy in antithrombotic agents-users from Japan Gastrointestinal Endoscopy Society. We defined delayed bleeding as a hematemesis, a melena, or a decrease of Hb > 2 g/dl.

**Results:** The delayed bleeding rate in the patients receiving antithrombotic therapy was 14.4% (22/153), which was significantly higher than that in the patients without antithrombotic therapy (5.7% (29/512)) (p = 0.0007). The median timing of delayed bleeding in patients receiving antithrombotic therapy and that in patients without antithrombotic therapy were 5.4 ± 4.6 days and 7.0 ± 6.8 days, respectively, without significant difference (p = 0.48). Of 153 patients taking aspirin (A), 147 continued antithrombotic therapy (A and all of them were antiplatelet drugs) during ESD (continuation group), 38 discontinued antithrombotic therapy and resumed it after ESD (cessation group), and 30 switched to heparin therapy before ESD (heparin bridge group). One patient was excluded because of uncertain about the period of cessation. The delayed bleeding rate of continuation group, cessation group and heparin bridge group were 13.2% (5/38), 13.1% (11/84) and 20.0% (6/30), respectively, without significant difference (p = 0.63). The delayed bleeding rate of continuation group was not different from cessation group (p = 0.57). The delayed bleeding rate of heparin bridge group seemed to be high (20.0%), but there was no significant difference compared to that of total number of cessation and cessation group (13.1% (16/122), p = 0.24). Deep vein thrombosis was observed in one patient in the cessation group.

**Conclusion:** Antithrombotic therapy increased the delayed bleeding rate. However, the delayed bleeding rate in the patients continuing antithrombotic therapy during ESD was similar to that in the patients discontinuing antithrombotic therapy. Therefore, it is inappropriate that the patients with high risk of thrombosis continue antithrombotic therapy on gastric ESD, but the heparin bridge therapy requires a further examination.

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

**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.

## References


esophageal squamous cell carcinoma at the endoscopic 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 tissues were immediately placed on a ‘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 of 8.6 days with a graft survival rate at 93.06%. Postprocedural stricture accompanied by dysphagia occurred in seven patients on post-procedure day 24.7 (range, 18–34 days). The median sessions of EBD and intraluminal steroid injection was 3.3 (range 1–6). No other serious complications occurred in these patients, such as immediate 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, Gluer S, Rothstein RI, Niemann H, 2012; and after endoscopic procedure (n = 1). Location of the fistulas: cardia (33%), gastroesophageal junction (33%), cardia (16%), antrum (8%), 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 RESOLUTION OF EARLY NEOPLASIA IN BARRETT’S ESOPHAGUS
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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 ER 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 ± 9 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 ± 1.9 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

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was reached in 290/301 (96%) procedures. A perforation occurred in 3/301 ER procedures (1.01%). CI 0.21% – 3.89%. Two perforations were closed with clips, all three patients received intra-venous 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 was seen 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.

Table: 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 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 a</td>
<td>8</td>
<td>8</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.

References
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 dysphagia (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 1.63 (3.3) days. Pony FBs, jubae pt, food bolus and dentulous pros thesis were the most frequent FBs in population. Anatomically, FBs were mostly impacted in the oesophagus (n = 1025, 85.9%), especially in the upper oesophagus (n = 702, 59.5%), followed by stomach (n = 95, 8.1%), 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, 29.3%) 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; OR = 2.26, 95%CI: 1.48–3.46, 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: 1.50–2.0, p < 0.001) were verified as risk factors for development of FB-related complication by logistic regression analysis. General anaesthesia could not improve FB detection rate (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**

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**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 8–20% of metastatic risks and is defined as relative indication for ER in guideline by Japan Esophageal Society. For these patients, 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 outcomes, 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, resulting 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 (10.0%). 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 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 for 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 < 0.001). 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 for 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 SM1 than in cases of MM, 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**

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**Introduction:** ESD in general is still under evaluation. The one-piece resection of lesions larger than 2 cm has many advantages against piece meal resection. One problem in ESD is to lift and prepare the specimen simultaneously. We used the ANUBIS-system for intragastric ESD.

**Aims & Methods:** 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 Anubisscope (Carl Storz, Germany). After insertion of the scope insufflations were made with the two arms of the scope using a gaspaser and a hook-knife. After the opening of the valves at the tip of the scope, an area of 5 cm in diameter was selected for resection. Injection was done through the working channel with a hyperosmolaric solution added with blue colour. After circle incision, preparation was done with the two arms of the scope using a gaspaser and a hook-knife. Also the gaspaser could be used 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 Anubisscope 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**

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Introduction: Narrow band imaging with magnifying endoscopy (NBI-ME) is used for gastric cancer; however, whether NBI-ME is 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 test 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 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.

References
cardiovascular diseases [5]. Thus, the verified risk prediction model of post-ESD bleeding may be able to determine preventive therapeutic options and restarting date of antplatelet 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 2017 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 showed good discrimination (C-statistic = 0.72). In the validation group, the model also showed good discrimination (C-statistic = 0.67). In the validation group, the model also showed good discrimination (C-statistic = 0.67). In the validation group, the model also showed good discriminatory power (C-statistic = 0.58; 95% CI, 0.53–0.62). Based on the scoring system of odds ratio, bleeding risk was 4.1% in the low risk set (score ≤ 4), 7.0% in the high risk set (score > 4, P = 0.003) (validation set).

Conclusion: Our study investigated a prediction scoring system of estimating the bleeding risk, including the patient, endoscopist factors. A risk score can be calculated before the procedure and the endoscopists can predict bleeding potency before the gastric ESD. Based on the scoring system, endoscopists may alter therapeutic plans such as prolongation of admission dates or medicare schedules.

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

References

P0817 EFFICACY OF BLUE LIGHT IMAGING USING LED LIGHT SOURCE FOR DIAGNOSIS OF EARLY GASTRIC CANCER

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Introduction: Endoscopic diagnosis of early gastric cancer (EGC) is essential for ESD. However, it was difficult to diagnose EGC precisely using blue light imaging. Therefore, we determined the diagnostic efficacy of blue light imaging used for ESD using a novel light source. We compared diagnostic accuracy to LED-BLI-ME, the LED blue light imaging system for endoscopic diagnosis of early gastric cancer.

Methods: We prospectively evaluated whether blue light imaging with another light source (LED-BLI-ME) could be as efficient for diagnosis of EGC as blue laser imaging with magnifying endoscopy (BLI-ME). 43 patients with 45 tumorous lesions including 28 well-differentiated adenocarcinomas, two moderately differentiated adenocarcinomas, six poorly differentiated, and five adenosquamous were enrolled in this study. Our study was conducted at Department of Gastroenterology, Osaka City General Hospital, Osaka, Japan from July 2017 to November 2017.

Results: The diagnostic accuracy of LED-BLI-ME for EGC was 85.1% (95% CI: 76.7–91.1) and that of BLI-ME was 91.1% (95% CI: 85.2–95.1) (P = 0.36). The diagnostic accuracy of LED-BLI-ME for EGC was 91.1% (95% CI: 85.2–95.1) and that of BLI-ME was 91.1% (95% CI: 85.2–95.1) (P = 0.36). The diagnostic accuracy of LED-BLI-ME for EGC was 91.1% (95% CI: 85.2–95.1) and that of BLI-ME was 91.1% (95% CI: 85.2–95.1) (P = 0.36). The diagnostic accuracy of LED-BLI-ME for EGC was 91.1% (95% CI: 85.2–95.1) and that of BLI-ME was 91.1% (95% CI: 85.2–95.1) (P = 0.36).

Conclusion: LED-BLI-ME was as efficient as BLI-ME for diagnosis of early gastric cancer.

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

References
**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**

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Introduction: Foreign bodies (FBs) ingestion is a common medical emergency accounting for 4% of all emergency endoscopies, secondary only to the GI bleeding. 70% – 75% of FBs are located in the esophagus[3]. The need of endoscopic management reached up to 63 – 76%[4,5,13] with 3% – 20% of incidence of complications[3]. According to the latest guidelines from ESGE, emergent endoscopy is recommended for the impaction of sharp-pointed objects within 24 hours[4,5]. However, there were still different opinions on the endoscopic methods with different FBs.

Aims & Methods: The study was performed from October 2015 to August 2016 among 595 patients with clinical suspicion of foreign body ingestion from 18 general hospitals in China. The patient data including age, gender, clinical features, and data about endoscopic management including types and locations of foreign bodies, retrieval devices, outcomes and complications were collected and analyzed.

Results: 1) The most common types of foreign bodies were fish bones (34.0%), chicken bones (22.1%), fruit nucleus (17.1%) and food bolus (14.6%). The majority of them were short objects (< 2.5 cm), 74.0% subsequently followed by middle objects (2.5 – 6.0 cm, 24.5%) and long objects (> 6 cm, 1.5%). Most objects were lodged in the proximal esophagus (75.9%), followed by the middle segment (19.6%) and distal segment (8.9%) of esophagus. 2) 96.3% of all cases had obvious clinical symptoms. Clinical symptoms occurred more often in the proximal segment of the esophagus (98.1%) than any other segments of the upper gastrointestinal tract (92.6%) (P < 0.001). 3) The successful removal rate through endoscopy was 94.5%. It was even higher with general anesthesia (99.3%) than without it (92.7%) (P < 0.01). 4) Complication rate was as high as 34.0%, which was increased with long retention time and sharp objects (P < 0.001). The rate was increased by 2.2- and 6.1-folds after impacted for over 48 hours as compared with less than 24 hours. Logistic regression analysis indicated that sharp objects had obviously more complications than non-sharp ones (OR 3.36, 95% CI: 1.97–5.74). In particular, the incidence of bleeding[5] was difficult compared to 0-IIa in WLI, IC and BLI-brt mode. However, LCI color enhancement of the diffuse redness by LCI was useful for the diagnosis of infection. Therefore, we expected that LCI facilitate the endoscopic recognition of early gastric cancer and gastric adenoma by enhancing its color difference between normal and atypical mucosa.

References

**P0819 BIOPSY STRATEGIES FOR ENDOSCOPIC SCREENING OF PRE-MALIGNANT GASTRIC LESIONS**

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Introduction: GA and IM are detectable precursor lesions of most gastric carcinomas. Early endoscopy examination may potentially result in early detection and treatment of advanced precursor lesions and cancer. The annual incidence of GA and IM in China, Europe, for GAs IM was 0.1% and for IM was 0.25%.[4,5] The histological assessment and biopsy sampling protocol has been standardized in the updated Sydney system and the recommended five gastric biopsies were widely applied in the staging system for gastric cancer risk stratification[6,7]. Some believe that the GA risk screening requires consideration of the cost, suffering of patients as well as rational utilization of medical resources, so adopt five biopsy may be presumably less appropriate in large-scale population gastric cancer risk screening. In this study, we evaluated the OLGA and OLGIM staging in a standardized five biopsy protocol through screening patients underwent endoscopy with abdominal pain and discomfort. In order to identify a more optimal biopsy strategy with quite high consistence with the standardized five biopsy protocol in OLGA and OLGIM staging and less number of biopsies during cancer risk assessment, we re-evaluated OLGA and OLGIM staging adopting different biopsy combinations (evaluated the appropriate biopsy locations and number of biopsies).

Aims & Methods: Gastric atrophy (GA) and intestinal metaplastic (IM) are precursor lesions of gastric cancer (GC), the extent and severity of which was intimately correlated with the occurrence of GC. Operative Linkon Gastritis Assessment (OLGA) and Operative Linkon Gastric Intestinal Metaplasia Assessment (OLGIM) with five biopsy samples are superordinate stages system during gastric risk stratification. We analysis the degree of GA and IM in these five locations and screen out an more representative, simple and convenient biopsy samples composition for gastric risk screening.

Methods: 368 patients with abdominal pain and other discomfort undergoing endoscopy were enrolled in the study. Five biopsy pieces (two from antrum, namely lesser to the left of the pubes, and larger curvature of corpus, larger and lesser curvature and one from incisura angularis) were acquired and graded by senior gastrointestinal pathologists according to the updated Sydney system. Gastric risk stratification was calculated by adopting OLGA and OLGIM staging system.

Aims & Methods: GA and IM are the most frequently acquired in the incisura angularis mucosa than the both lesser and larger curve of antrum and corpus respectively (P <0.05), especially the moderate and severe degree. More GA and IM alternations happened in the lesser curve of the antrum and corpus than in the corpus (P < 0.05) in the composition of incisura angularis (antrum and corpus, angular biopsy) with quite accurate consistence with five biopsy pieces protocol using OLGA and OLGIM staging (94.0% and 92.9%), together with a rather low omission diagnostic rate of OLGA and OLGIM III + IV (5.8%) and 7.2%)

Conclusion: The incisura angularis with more moderate and severe GA and IM should be recommended as conventional biopsy site during endoscopy. The three most common location (antrum and corpus, angular biopsy) with quite high consistence, more convenience and less cost comparing with five biopsy pieces protocol using OLGA and OLGIM staging system, and thus could be recommend in the further gastric risk screening applying OLGA and OLGIM staging.

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

References
**References**


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


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

**References**


Disclosure of Interest:

References

59 minutes), the control group was 67 minutes

P0824 ENDOSCOPIC SUBMUCOSAL TUNNEL DISSECTION FOR LESSER GASTRIC CURVATURE SUPERFICIAL NEOPLASMS
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Introduction: Endoscopic submucosal dissection (ESD) has been widely used for resection of gastrointestinal neoplastic lesions, but there are still technical challenges in treating large ones especially located in lesser gastric curvature. In the tunnel technique, incisions at the lower and upper lesion edges are joined by a submucosal tunnel and then lateral incisions are made. The mucosa is thereby easily separated from the muscular layer. We report our experience of endoscopic submucosal tunnel dissection (ESTD) in lesser gastric curvature.

Aims & Methods: To estimate the safety and efficiency of endoscopic submucosal tunnel dissection (ESTD) for lesser curvature superficial neoplasms. 47 patients with lesser curvature superficial neoplasms undergoing endoscopic resection were analyzed retrospectively. 26 patients underwent ESTD and 21 received endoscopic submucosal dissection (ESD). Operation time, security, En bloc resection rate and complications were compared between the two groups. The major difficulty separated from the muscular layer. We report our experience of endoscopic submucosal tunnel dissection (ESTD) in lesser gastric curvature.

Results: The differences between the two groups in the age of the patients and the diameter of the lesions had no statistically significant (P > 0.05). En bloc resection rate was 100% in the study group and 90.5% in the control group (19/21), and the difference was statistically significant (P < 0.05). The intraoperative bleeding rate of the study group was 57.7% (15/26), the control group (2/21), and the difference was statistically significant (P < 0.05). The incidence of perforation was 0% in the study group and 9.5% in the control group (2/21), and the difference was statistically significant (P < 0.05). There was 1 case of delayed bleeding after operation in the two groups, there were no postoperative perforation, and the difference was not statistically significant (P > 0.05). There were no cases of peritoneal metastasis in 2 groups after operation.

Conclusion: ESTD for lesser curvature superficial neoplasms can obviously shorten the operation time and have a higher security, compared with the traditional ESD operation.

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

P0825 PROPOFOL SEDATION DURING GASTROINTESTINAL ENDOSCOPY INDUCES EUPHORIA IN A LARGE SUBSET OF PATIENTS
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Introduction: Propofol is recommended for sedation in gastrointestinal endoscopy (GE) [1], but preliminary data suggests additive potentials in animal models [2, 3] and healthy volunteers [4]. There is an increasing number of reports of propofol addiction in physicians and nurses associated with high mortality up to 4% within the first year. [5-7] Some patients and medical laymen developed propofol addiction and feigned an indication for endoscopy to receive propofol [8, 9]. Survivors after propofol abuse reported that the abiding memory of the intense relaxation many years ago was a major reason to abuse propofol years thereafter [10]. However, it is unknown how many patients develop a euphoric drug reaction after endoscopy.

Aims & Methods: The primary objectives were to define the frequency of a euphoric reaction pattern under propofol sedation, to evaluate the remissiveness of a re-treatment and to investigate the superposition of the respective propofol-induced euphoria. Eighty-two patients undergoing elective GE under propofol-sedation in an ambulatory setting were enrolled in a prospective observational study. The grade of anxiety, expectation or belief about the endoscopy’s result and affective state in terms of cheerfulness, relaxation, activation, sedation and anxiety were surveyed using a numeric rating scale (1 to 10) immediately before (t1), after GE (t2) and seven days (t3) later. Statistics: hierarchical cluster analysis, heat map, q2 test and paired t-test.

Results: Mean propofol dosage was 264 ± 120 mg. The average indices of cheerfulness, relaxation and activation increased significantly (t1 to t2 to t3), whereas sedation and anxiety decreased. Two clusters of mood changes emerged (t1 vs. t2). One (n = 46, 56.1%) was characterized by an unease reaction pattern with equal values regarding cheerfulness, relaxation, anxiety and wellbeing, while the other showed a euphoric reaction pattern (n = 36, 43.9%) with markedly increased cheerfulness, relaxation and decreased anxiety. Despite similar endoscopy results, euphoric cluster patients rated these more positively. No association between cluster and personal traits, prior use of psychotropic drugs, alcohol consumption or smoking habits were found.

Conclusion: Propofol induces euphoria in nearly half the patients undergoing elective GE with persisting, even enhanced remissiveness. Consequently, endoscopists should be aware of a potential risk of addiction in vulnerable subjects.

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

References


P0826 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR UPPER GI SUBMUCOSAL TUMOURS
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Introduction: Submucosal tumours (SMT) in the upper gastrointestinal tract (UG) impose diagnostic and therapeutic challenges. They may have malignant potential and endoscopic ultrasound (EUS) guided diagnosis is often inadequate. A substantial proportion may not involve the muscularis propria (MP) and thus may be amenable to endoscopic excision. Snare-based techniques are usually unable to completely excise such lesions, though without complete excision ongoing endoscopic surveillance may be necessary. Endoscopic submucosal dissection (ESD) offers the possibility of complete resection and definitive
Aims & Methods: A prospectively collected ESD database was analysed to identify patients with SMT of the UGI. All lesions underwent EUS assessment with the aim to exclude MP involvement prior to resection, and in the case of neoplastic endoscopic tumours (NET) blood tests and Octreotide PET scan were performed.

Results: Over 42 months, 32 ESDs for SMT lesions were performed. The median age was 62 years with 19 male patients (69%). Mean lesion size was 18 mm. Twenty-five patients (83.3%) had completely resected lesions. Four patients (13%) had involvement of the MP which was identified during the resection, and one patient (3%) had MP injury which precluded complete resection. Three of five lesions of the incompletely ESD procedures were in the proximal body of the stomach, however only two lesions of the completely resected lesions were in the proximal body (P=0.004). Otherwise, there were no significant differences between the patients and lesions characteristics. The histology of the SMT lesions were 9 NET, 6 leiomyoma, 5 Granular cell tumours, 4 inflammatory fibroid polypl, 2 GIST, 2 dysplastic Lipoma, one myofibroblastic tumour and one Warthin’s like tumour. Nineteen patients had completed surveillance endoscopy (SE) without an endoscopic and histological recurrence (Median follow up 18 months). Six patients are pending SE. The four patients with deep MP involvement were referred for surgery.

Conclusion: ESD for selected UGI SMT is an effective treatment. Long-term endoscopic follow-up confirmed the absence of recurrence endoscopically and histologically. MP involvement cannot be reliably excluded by prior EUS. This technique should be considered for UGI SMT lesions without MP involvement in experienced centres.

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

References:

P0027 COMPARING APPROACHES TO SELF-EXPANDING METALLIC STENTS INSERTION

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Introduction: The incidence of oesophageal cancer has increased significantly over the past two decades. The majority of these cancers are incurable at diagnosis. Therefore, the management is aimed at maintaining quality of life by ensuring adequate nutrition and palliation of symptoms, mainly dysphagia. Self-expanding metallic stents (SEMS) have a well-recognised role in the palliative management of patients with oesophageal cancer. These stents are inserted endoscopically, under direct vision (EC) or with fluoroscopic assistance to endoscopy (FAE). There is little evidence to compare outcomes between these approaches.

Aims & Methods: The objective of this study was to compare the outcomes, using various performance indicators, in patients who underwent SEMS for palliation in oesophageal cancer via different approaches (EC or FAE) at the Royal Infirmary of Edinburgh (RIE). A retrospective observational study was conducted between May 2014 to April 2016; a total of 62 SEMS. The approach to stent insertion was subject to operator choice and availability of fluoroscopic assistance, and as such can be akin to randomized study. We compared early and late complications associated with two techniques. Early complications included pain, vomiting, bleeding, perforation and tachyarrhythmia. Late complications included tumour overgrowth, oesophagitis, oesophageal stent migration and stent migration. We also compared morbidity, the need for repeat procedures and the number of additional stents required following each approach.

Results: Forty-seven stents where inserted by EC and fifteen by FAE. The median age among the two groups were comparable at 75 and 69 years respectively. There was male predominance in both the groups (70% and 67%). Adenocarcinoma was the most common malignancy (56%), followed by squamous cell carcinoma (35%) among the study subjects. We observed a higher frequency of technical difficulties with EC placement (13%) to FAE (0%), however no malposition was observed in the EC group. Early complications were comparable in both groups, however chest pain (21%) was more frequently observed no malposition was observed in the EC group. Early complications were comparable in both groups, however chest pain (21%) was more frequently observed.

Conclusion: Our results are comparable to findings of other authors (1, 2), in that neither approach is superior. Both FAE and EC techniques have similar early and late complications and comparable median survival. EC offers the advantage of stent placement with direct visualization, however a learning curve must be acknowledged. FAE insertion is a time-consuming procedure and exposes both patients and endoscopy staff to radiation. In conclusion, the approach used should be based on individual characteristics including operator experience, tumour characteristics and previous endoscopic interventions.

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

References:

P0028 CAUSTIC INJURIES OF THE SUPERIOR GASTROINTESTINAL TRACT: 15 YEARS OF EXPERIENCE

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Introduction: Ingestion of caustic substances is relatively frequent and can cause serious lesions 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% epigastic pain, 32.9% vomiting. Oropharyngeal 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%, Hs-6.8%, Hn-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 tracheo-terminted. 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.
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). 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 acetic acid indigocarmine indigo-carmine (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 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 indicated 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 in Clear, Visible, and Invisible and evaluated it. We carried out ESD and compared the image with the histopathology.

Results: By the pathology results, 92 lesions were gastric cancer and 28 lesions were non-cancer 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 (94.6%). 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 Invisible and classified by AIM method. 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 acetic 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.

References

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

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 6/46 (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% (26/76; Group 805; Group B); intramucosal carcinomas, 51.2% (37/71; Group A) and 53.8% (433/805; Group B); shallow submucosal invasive carcinomas (<500 mm), 7.0% (57/805; Group A) and 6.5% (52/805; Group B); and deep submucosal invasive carcinomas (>500 mm), 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 94.7% (67/71; Group A) and 92.9% (748/805; 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 14 (46.3%) of the 31 patients in Group B were resection mismatches. 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 in Clear, Visible, and Invisible and evaluated it. We carried out ESD and compared the image with the histopathology.

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

References

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rate of complex LNPCPs with features suggestive of increased malignancy risk was 2.0% (14 cases). Breakdown of Outcomes (n = 53) *(Primary endoscopic therapy, (n = 27) -23 excised with curative intent -21 cases with no recurrence at 1 y -2 cases with recurrence (8.7%) both <1 cm and managed endoscopically -4 required secondary surgery -2 failed endotherapy -2 proved to be malignant *(Secondary surgical management, n = 23) -10/21 malignant lesions (43.5%) -9/23 subject to transanal surgery (39.1%) *(Conservative management, n = 3) Breakdown via High risk features of malignancy (SMSA3/SMSA4) (n = 53) *(High risk features of malignancy (any SMSA score) (n = 27) - endoscopically managed 14.0% (2/23) (6 cases both managed with pEMR) malignant -13 endoscopically surgical (4/13; 30.8%); transanal surgery -9 malignant (69.2%) -1 managed conservatively *(SMSA 4 (n = 25) -12 managed endoscopically -2 surgically managed (due to technical considerations) -5/12 malignant (25%) -1 managed conservatively *(SMSA 3 (n = 7) -4 managed endoscopically -2 management surgically (both lesions originating from within appendix) -1 managed conservatively.

Conclusion: 61 complex LNPCP 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/AGCPKGI PBI (including only surgically managed benign lesions or lesions subject to failed endotherapy) was 39.5%. The en-bloc resection rate of complex LNPCPs with features suggestive of increased malignancy risk was 71.4%.

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

References
1. Chattree A, Nylander D, Silcock J, et al. UEG15-ABS-1622. Marked Variation in Endoscopic Mucosal Resection Outcomes Within the UK Bowel Cancer Screening Programme. United European Gastroenterology Journal 2015; 2015: 144; 54.3%) and rectum (n = 1; 0.8%); stomach (n = 5; 1.8%); sigmoid colon (n = 14; 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 >3 h and a piecemeal resection, were noted in 21 (8.1%) patients. Duration >3 h in 25 cases (9.7%) and unsuccessful en bloc

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 societies 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 a chi-squared test 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 (15; 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 >3 h and a piecemeal resection, were noted in 21 (8.1%) patients. Duration >3 h in 25 cases (9.7%) and unsuccessful en bloc

P0833 PREDICTIVE FACTORS FOR TECHNICALLY DIFFICULT ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD). IMPLICATIONS FOR CASE SELECTION: A SPANISH PROSPECTIVE MULTICENTER COHORT STUDY

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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 societies 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 a chi-squared test 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.

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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%)</td>
<td>p</td>
</tr>
<tr>
<td>Case load ≤10</td>
<td>1.00 (1.00–1.00)</td>
<td>1.00</td>
</tr>
<tr>
<td>2 endoscopists (vs. 1 operator)</td>
<td>20.65 (5.9–72.6)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>2.6 (1.2–5.7)</td>
<td>0.01</td>
</tr>
<tr>
<td>Stomach</td>
<td>0.5 (0.2–1.0)</td>
<td>0.06</td>
</tr>
<tr>
<td>Size &gt;30 mm</td>
<td>2.4 (1.3–4.4)</td>
<td>0.004</td>
</tr>
<tr>
<td>Recurrent tumor</td>
<td>3.2 (1.3–8.1)</td>
<td>0.008</td>
</tr>
<tr>
<td>Protruded morphology</td>
<td>0.9 (0.5–1.9)</td>
<td>0.9</td>
</tr>
<tr>
<td>Depressed component</td>
<td>0.6 (0.2–1.7)</td>
<td>0.4</td>
</tr>
<tr>
<td>Poor manoeuvrability</td>
<td>3.5 (1.7–7.5)</td>
<td>0.001</td>
</tr>
<tr>
<td>Previous biopsy</td>
<td>1.0 (0.6–1.8)</td>
<td>0.9</td>
</tr>
<tr>
<td>Submucosal invasion</td>
<td>1.3 (0.5–3.7)</td>
<td>0.6</td>
</tr>
<tr>
<td>Severe submucosal fibrosis (F2 vs. F0/F1)</td>
<td>3.3 (1.7–6.4)</td>
<td>0.0002</td>
</tr>
<tr>
<td>Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intraprocedural bleeding</td>
<td>4.1 (1.9–8.7)</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

Conclusion: The factors independently associated with technically difficult ESD (abortive procedures, time-consuming or finished with a piecmeal 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

P0834 EPOCH-MAKING TECHNIQUE OF FULL-THICKNESS RESECTION FOR THE COLORECTAL TUMOR BY USING LAPAROSCOPY ENDOSCOPY COOPERATIVE SURGERY (LECS)

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Introduction: We established the Laparoscopy Endoscopy Cooperative Surgery (LECS) procedure to overcome the limitation of colorectal endoscopic submucoosal dissection (ESD). This procedure is a local full-thickness resection of the combined procedure of laparoscopy assisted colectomy (LAC) and ESD procedure. Also, it is the method that is epoch-making for minimal invasive treatment that kept an intestinal function.

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: female 777:564; 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: female = 7:4; 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 metastasis 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) Intramucosal carcinoma (Tis) and adenoma with high-grade atypia involved appendix or diverticulum. We examined the clinicopathological outcomes of the mentioned 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 reasons that 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. An operative time was an average of 195.8 minutes (127 to 332), and the perioperative bleeding was an average of 8.9 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 adhesions, 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
The interviews provided an in-depth understanding of patient experience of GI procedures. 6 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 patient experience emerging. This work will be used to develop PREMs for patient experience.

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
PREPARED IN PLASMA (PRP), Glucosated serum 10% (GS), Gelaspan (GP), TriBio (TB) and To analyse the electrical (R) and rheological (temperature, 

did a new solution to perform submucosal injection (TriBio).

The best durability at 60 minutes was for TB, PRP, TB 

The solutions that showed the best basal R were: PL, HA, GS, TB and 

ter ebresolve in therapeutic colonoscopy.

Introduction: All authors have declared no conflicts of interest.

References


P0839 COMPARATIVE STUDY OF ELECTRICAL AND RHEOLOGICAL PROPERTIES OF DIFFERENT SOLUTIONS TO PERFORM SUBMUCOSAL INJECTION

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Introduction: Rheological properties of the submucosal cushion solu-

tions are crucial to avoid complications secondary to endoscopic resection.

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 analyse 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), Glicolic® (GC), Hyaluronic acid (HA), Distilled water (DW), Platelet-rich plasma (PRP), Glucosated serum 10% (GS), Gelaspan (GP), TriBio (TB) and PRP + TB. Measurements were done at time 0 and 30 minutes.

Results: The solutions that showed the best basal R were: PL, HA, GS, TB and PRP + TB. 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.

<table>
<thead>
<tr>
<th>Viscosity (pa)</th>
<th>% diminution cushion (60 min)</th>
<th>Trans-epithelial R (MΩ)</th>
<th>Increase in T° during endoscopic resection (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basal</td>
<td>n.a.</td>
<td>10</td>
<td>83.5</td>
</tr>
<tr>
<td>Saline</td>
<td>0.0043</td>
<td>39.6</td>
<td>49.1</td>
</tr>
<tr>
<td>Gelaspan</td>
<td>0.009</td>
<td>45.5</td>
<td>116.6</td>
</tr>
<tr>
<td>Glycerc</td>
<td>0.009</td>
<td>26.3</td>
<td>44.9</td>
</tr>
</tbody>
</table>

P0840 PATIENT SATISFACTION RELATED TO QUALITY OF INFORMATION GIVEN THROUGHOUT COLONOSCOPY

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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 indifferent/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.

Reference

1. 2016 Commonwealth Fund International Health Policy Survey of Adults.
THE INCIDENCE OF SYNCHRONOUS ADVANCED NEOPLASIA OF RECTAL LATERALLY SPREADING TUMORS WITH A SKIRT


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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 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, there were significant differences in the right colon (8.0% vs 29.9%, 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 6.6%, p = 0.41). The incidence of synchronous AN in rectal LSTs with a skirt (n = 7; right colon: 2, left colon and rectum: 5) was significantly lower compared with rectal LSTs without a skirt (n = 36; 47.4%, 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 = 0.03) between LSTs with and without a skirt. In contrast, there was no significant difference between LSTs with and without a skirt (n = 25; 20.0% vs 27.1 mm) had 22 high-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 (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 a 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


EVALUATION OF MUCOSAL HEALING WITH SHIELDS BASED ON DIFFERENT HYDROGELS IN A RAT MODEL OF THERMAL INJURY

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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 randomly assigned 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. Bartoli: 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


EVALUATION OF MUCOSAL HEALING WITH SHIELDS BASED ON DIFFERENT HYDROGELS IN A RAT MODEL OF THERMAL INJURY

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Introduction: Colonscopic procedures 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 (alfubect-cept 2 mg/mL, etuximub 16 mg/mL, panitumumab 6 mg/mL, irinotecan 3.5 mg/mL and bevacizumab 5 mg/mL) in a rat model of azoxymethane-induced colorectal 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.

References

P0844 A THREE-DIMENSIONAL IMAGING SYSTEM IMPROVES THE ENDOSCOPIC VISIBILITY OF NON-POLYPYID COLORECTAL NEOPLASMS

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Introduction: Three-dimensional (3D) imaging techniques have 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 endoscoped the 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 (3.30 ± 0.53 for 2D endoscopy and 3.87 ± 0.55 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.

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

References

P0845 PAIN DURING COLONOSCOPY: DIFFERENCES BETWEEN PATIENTS’ EXPERIENCES AND CAREGIVERS’ ASSESSMENT

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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. Results: Data from 785 patients has been collected, mean age 52 (18–90) years; 46% of patients had a history of pain during colonoscopy. Approximately 8% of patients reported pain during a sub-group of 14% were not adequately relieved. This subgroup reported severe, very severe or extremely severe pain. 90% of the patients were given analgesics and sedation during the investigation. For patients who reported, “severe, very severe or extremely severe pain” (n = 111), pain was underestimated by physicians and nurses in 58% of all assessments. This was most commonly seen among the youngest patients, 18–29 years (n = 99), where pain was underestimated in 25.5% among the group. There was also a difference according to 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 agitation among the group who reported moderate pain, was significantly higher than the expert, non-expert 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 (3.30 ± 0.53 for 2D endoscopy and 3.87 ± 0.55 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: 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 TO INCREASE INTERNATIONAL VALIDATION (FACILE GROUP) OF COLONIC LESIONS USING ADVANCED IMAGING MODALITIES IN IBD PATIENTS

M. Iacucci1, K. Mcquaid2, T. Uraoka3, T. Matsmutoto4, V. Subramaniam5, Y. Iwao6, M. Lowerson7, B.C. Lethebe7, S. Sanduleanu8, S. Ghosh9, R.W. Walker10, T. Matsumura1, H. Ishigami1, M. Arai1, N. Kato1
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9HKS, Dr. Horst-Schmidt-Kliniken, Wiesbaden/Germany

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Introduction: The SCENIC consensus proposed recommendations for optimal detection and management of dysplasia during colonoscopic surveillance for IBD. However, 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 Chromoendoscopy 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. Multivariable analysis with bootstrapping, of characteristics of the classification was performed to determine the strength of endoscopic predictors of dysplasia.

Results: 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%, sensitivity, specificity, PPV, NPV, accuracy, for predictions made with high confidence were 72%, 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 polypoid 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 polypoid 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%), 69% (95% CI:62–75%), 85% (95% CI: 79–90%). Inter-observer agreement of the raters improved from the pre-test (Kappa = 0.27 CI: 0.19–0.38) to post test (Kappa = 0.34 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>
</tr>
</thead>
<tbody>
<tr>
<td>Polypoid/non polypoid</td>
</tr>
<tr>
<td>Paris Classification (fp, Is, IIa, IIb, IIc, III)</td>
</tr>
<tr>
<td>Endoscopic inflammatory activity (within the lesion)</td>
</tr>
<tr>
<td>No ulcerations</td>
</tr>
<tr>
<td>Ulceration</td>
</tr>
<tr>
<td>Endoscopic inflammatory activity (surrounding area)</td>
</tr>
<tr>
<td>No ulcerations</td>
</tr>
<tr>
<td>Ulceration</td>
</tr>
<tr>
<td>Demarcation</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Colour of the lesion (relative to the background)</td>
</tr>
<tr>
<td>Paler</td>
</tr>
<tr>
<td>Same intensity</td>
</tr>
<tr>
<td>Darker</td>
</tr>
<tr>
<td>Surface architecture (tissue)</td>
</tr>
<tr>
<td>Roundish</td>
</tr>
<tr>
<td>Villous –regular</td>
</tr>
<tr>
<td>Villous –irregular</td>
</tr>
<tr>
<td>Irregular/non-structural</td>
</tr>
<tr>
<td>Vessel architecture</td>
</tr>
<tr>
<td>Non visible</td>
</tr>
<tr>
<td>Regular</td>
</tr>
<tr>
<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**

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**Abstract No:** P0847

**Endoscopic Findings**

<table>
<thead>
<tr>
<th>UC/CD</th>
<th>Kudo Paris Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left sided UC</td>
<td>IIH/III</td>
</tr>
<tr>
<td>Crohn’s colitis</td>
<td>IIH/III</td>
</tr>
</tbody>
</table>

**Endomicroscopy Findings**

| Villiform appearance of the crypts with stellar opening. The colonic mucosa surrounding the lesion was normal. | SSA |
| Villiform elongated appearance of the crypts with dark epithelium, decreased number of the | LGD |

**Histology**

| Endomicroscopy Findings |
| SSA |
| En-block EMR |

**Outcome**

| En-block EMR |
| SSA |

(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 Pancolitis</td>
<td>III/IV Is Size &gt; 2.5 cm distinct</td>
<td>Villiform appearance of the crypts with stellar opening of the lumen of the crypts. 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>Colonic Crohn’s</td>
<td>III/IV Is 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>III/IV Ilb 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>II0/IV IS 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>III/IV Ilb 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>
P0849 THE SAFETY AND EFFECTIVENESS OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION USING A SCISSORS-TYPE KNIFE IN ELDERLY PATIENTS

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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 Bakeiki, 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 Kure Medical Center 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, resected 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 36.4% (70/194); Tub. 39.2% (38/97) and 44.8% (87/194); Tla, 10.3% (10/97) and 10.3% (20/194); and Tlb, 13.4% (13/97) and 8.8% (17/194) in groups A and B, respectively, showing no significant difference. The mean resected tumor size was 33.9 ± 16.6 mm in group A and 34.7 ± 15.2 mm in group B, and the median procedural time was 75.6 min (range, 10–420 min) in group A and 75 min (range, 10–533 min) in group B, showing no significant difference. The en bloc resection rates were 96.9% (94/97) and 99.0% (192/194); the complete resection rates, 94.8% (92/97) and 94.8% (184/194); and the curative resection rates, 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 delayed bleeding 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 colorectal cancer (2.6%, 5/194) during 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 in elderly patients. The safety and efficacy of colorectal ESD using SB Knife Jr in elderly patients remain unclear.

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

References


P0850 QUALITY IN COLONOSCOPY; HAVE YOU REALLY GOT TO THE CAECUM?

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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 “acceptable photo documentation preferably a panoramic view of the ileocecal valve and caecum”.2 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 Surgeries (24%), 3 Nurse Endoscopists (14%), 3 Specialist Registrar Gastroenterology (14%) and 10 Consultant Gastroenterologist (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 appendix in 102(41%) cases, the caecum in 83(33%) cases and a panoramic view was achieved only in 43(17%) patients. Terminal Ileum was intubated in 53 cases (21%) and images were recorded in 25 cases (40%). In the case of anastomosis, 7 images (88%) of the anastomosis were obtained. In some of the reports images were labelled and in a number of reports no photos were recorded at all.

Conclusion: This study shows that photo documentation is poor and needs to be improved in order to adhere to national and international guidelines. Evidence of caecal intubation is imperative as it can protect against medicolegal implications.3 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


P0851 DETECTION AND CHARACTERIZATION OF SSA/PS DURING SURVEILLANCE COLONOSCOPY IN LONG STANDING IBD USING ADVANCED ENDOSCOPIC TECHNIQUES

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Introduction: Sessile Serrated polyps (SSA/Ps) are pre-malignant lesions that may lead to colorectal cancer in accelerated manner. These lesions are easily missed by endoscopists as these are difficult to detect in IBD patients. We aimed to assess the prevalence, detection rate and endoscopic findings of SSA/Ps in long standing IBD patients prospectively undergoing surveillance colonoscopy using dye (DCE) or virtual electronic chromoendoscopy (VCE) or high definition white light imaging (HD-WLE) colonoscopy.

Aims & Methods: A total of 270 randomized patients (55% men; age range 20–77 years, median age 49 years) with long-standing IBD (median duration of the disease 14 years) undergoing surveillance colonoscopy were assessed by HD-WLE (n=90), VCE (n=90) or DCE (n=90). Surveillance colonoscopy with High Definition (HD) alone, or with iSCAN VCE or DCE was performed. Endoscopic features were recorded in each group with regard to location, morphology (polypoid/non polypoid), size and mucosal pit pattern, and these were characterized using the Kudo modified classification and Paris classification. The histology was reported by modified Vienna classification.

Results: Thirty -three SSA/Ps were detected in 20 (11UC; 9 CD; 11 female, age range 34–72 y, median age 61 years) patients out of the 270 patients with IBD enrolled (12.2%). The endoscopic features of SSA/P lesions were: non-polypoid appearance (51.5%), predominant localization in the proximal colon (vs distal) (87%), ≥5 mm in size (48.4%), Kudo pit pattern modified type I (77%). Kudo pit pattern modified type I had a sensitivity of 79% and specificity of 62% for diagnosing SSA/Ps at surveillance colonoscopy in IBD patients. There was no difference in detection rates of SSA/P using HD-WLE, DCE or VCE.

Conclusion: SSA/Ps are not an infrequent finding at surveillance colonoscopy in IBD. There are prevalent in the right colon location and these generally have Kudo pit pattern of I/O. SSA/Ps can be recognized endoscopically by Kudo pit

Abstract: P0851
pattern even in IBD patients. Further studies are needed to evaluate the natural history and management of the SSA/Ps pathways in IBD patients.

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

PO852 IN VIVO HISTOLOGICAL PREDICTION OF COLORECTAL POLYPS USING FICE TECHNOLOGY

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Introduction: The histological characterization of colorectal polyps using FICE (Fujinon Intelligent Color Enhancement) technology presents high diagnostic accuracy. However, the individual acuity of the endoscopists ranged from 66% to 76%. The lack of recourse to magnification may have contributed to these results.

Aims & Methods: To evaluate the in vivo histological prediction acuity of colorectal polyps <10 mm in diameter vs adenoma in WLE (White light endoscopy) and using FICE technology, comparing both modalities. Propospective evaluation, using WLE and FICE, of colorectal polyps <10 mm in patients submitted to colonoscopy between 12/2016 and 02/2017 by four inexperienced endoscopists in FICE, except for a previous 20-minutes interactive session. Polyps were evaluated using the FICE classification (tubular or oval crypts (adenoma), round crypts or featureless appearance (hyperplastic polyps), indicating their confidence level (low <90% vs high >90%). Statistics: SPSS v23.

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 adenomas showed a high positive predictive value identical to WLE (100%, 62.5%, 60% and 100%, respectively). Overall, diagnostic acuity in histological prediction was identical in both modalities (76%). The individual acuity of the endoscopists ranged from 66% to 77% (31.8%). A sub-sore classification was 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.

PO853 POLYP DETECTION RATES IN COLONOSCOPIES PERFORMED UNDER GENERAL ANAESTHETIC COMPARED TO CONVENTIONAL SEDATION

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Introduction: Colonoscopies are performed under general anaesthesia (GA) for various reasons. This may be due to previous episodes being poorly tolerated with normal sedation. During the procedure, the endoscopist must be aware of the patient’s comfort levels and reactions to endoscopic manoeuvres. Polyp detection rate (PDR) is a well-recognized indicator of colonoscopy. We have demonstrated that use of sedation increases the quality of colonoscopy11. We hypothesised that complete removal of the patient factor may increase the detection rate of polyps further.

Aims & Methods: The study was undertaken retrospectively at a district general hospital. Results were analysed for all colonoscopies performed under GA between February 2016 and February 2017 to identify whether polyps had been detected, the number of polyps detected, and the site of polyp detection. Sedation records for a period of one year were retrospectively evaluated for IBD and inflammatory bowel diseases. All patients were excluded. The age and gender of each group was also analysed to identify possible confounding factors.

Results: 40 colonoscopies were performed under propofol sedation within the defined criteria; 40 colonoscopies performed using conventional sedation were randomly selected to use for comparison. A significant increase in rate of polyp detection was found in GA studies (45% vs non-GA studies 30%, p = 0.0384). GA studies identified a mean of 1.275 polyps per study, compared to a mean of 0.325 polyps when conventional sedation was used (p = 0.0001). There was an insignificant (p = 0.175) difference in age between the GA group (59.7±8.2) and non-GA (64.7±14.2). There was a significant (p = 0.0005) difference in gender between groups; there was an even distribution of gender in the conventional polyps, whereas 77% of patients were female. For propofol sedation, 70% of patients were female.

Conclusion: Use of propofol sedation during colonoscopy provides a statistically significant increase to both the rate of detection of polyps, and the number of polyps identified when compared to procedures performed for similar indications using conventional sedation. This may be an indication of the patient factor. The implications of this are unclear and thus further larger comparison studies are needed. It is not practical for all colonoscopies to be performed under GA due to capacity issues, anaesthetic requirements and time allocated to lists. However, it may be a clinically effective tool for high-risk patients, such as those being screened for hereditary colonic malignancies or IBD patients.

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

PO854 PATIENT AND PHYSICIANS RELATED FACTORS ASSOCIATED WITH A HIGH ADENOMA DETECTION RATE IN ROUTINE COLONOSCOPY

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Introduction: Adenoma and polyp detection rates are correlated to the risk of interval colorectal cancer and is consequently considered as a quality benchmark in routine colonoscopy. We propose to evaluate these factors in our daily practice, involving all the endoscopists of our endoscopy unit.

Aims & Methods: 6027 colonoscopies were performed between 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 time, and quality of preparation (assessed by the Bowel Score). Regarding physicians, age, gender, number of colonoscopies and mean withdrawal time (c). We performed a univariate analysis (using unpaired t-test for two groups, the χ2-test or Fisher’s exact test for categorical data). A multivariate analysis (stepwise logistic regression) was performed with the significant variables identified in the univariate analysis.

Results: We enrolled 2719 Male patients (45.1%) and 3308 Female patients (54.9%). Among them, 1370 (45.1%) were under 50 year-old or more. A sub-optimal preparation (defined as a Bowel scale score < 3 or at least one sub-score < was observed in 61.9% of the patients. Caecal 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 Malignancy. Of the Number of Polyps (MNP) had an 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). Among 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, 16 had a mean ADR >420 seconds. 34 physicians compared to 34% for polyps, withdrawal time of more than 420 seconds (p > 0.05). In the univariate analysis, a high PDR was significantly associated with patient-dependent factors: age, Male gender, a familial history of polyp/cancer, screening or positive faecal immunochemical test (FIT+) and quality of preparation. Regarding physician-dependent 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 factor 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 PDR among physicians, we found no significant physician-dependant factor associated with a high PDR in the multivariate analysis.

Acknowledgement 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

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Introduction: Fecal immunochemical 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 01/2016 and 31/12/2016 in our endoscopy unit, 391 were performed for a positive FIT (FIT+)}
PO857 TWO LITERS OF POLYETHYLENE GLYCOL (PEG) WITH 15 MG OF BISACODYL VERSUS 4 LITERS OF PEG FOR BOWEL PREPARATION TO COLONOSCOPY, PROSPECTIVE RANDOMIZED STUDY. PRELIMINARY RESULTS

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Introduction: Adequate bowel preparation is one of the most important quality factors of colonoscopy. Several formulations of bowel preparation have been evaluated for their ability to have a clean colon and be well tolerated by patients. Currently, PEG 4L solution is the preferred method of bowel preparation to colonoscopy. This preparation has the disadvantage of being poorly tolerated by patients. Furthermore, recent studies have shown that a low-volume PEG solution (2L) plus bisacodyl for bowel cleansing is as effective and better tolerated as a large volume PEG (4L).

Aims & Methods: This study aims to assess the efficacy and tolerance of the new regimen (bisacodyl) compared to the classical regimen (4L of PEG).

Materials and methods: A prospective comparative randomised study comparing the tolerance, acceptability and efficacy of a protocol A based on 4L of PEG and a protocol B corresponding to 2L of PEG + 15mg of Bisacodyl. Using the Boston Bowel Preparation Scale (BBPS) by endoscopists, who did not know bowel preparation type, to evaluate the quality of preparation.

Results: Sixty-six patients were included (35 in group A and 31 in group B), with a sex ratio = 1. The average age of patients was 52 ± 15 years (17-86 years) with a median of 51.5 years, 19 patients in the first group found that the preparation was difficult or moderately difficult vs 3 in group B (p = NS) with mild to severe side effects 54% of group A and 29% of group B (p = 0.03) and A mean side effect per patient was 2.26 vs. 1.89 (p = NS). Nausea and vomiting were respectively (34% and 19%) of patients in group A and B. However, 5 patients in group A had sleep disorders vs only one case in group B. Four patients who received 4L 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 61% of patients in group A (n = 21) vs 19% of patients in group B (p = 0.03). Overall, 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 hyperplastic polyps (9.9%) with 4 patients in group B and no patient in group A. Seven patients refused to repeat the test even if indicated. This refusal was secondary to the lubrication in 4 cases (2 cases of each group). Abdominal pain and post-endoscopic distension were respectively (62.8% and 65.7% vs 32% and 22.5%) (p = 0.016 and p < 0.001).

Conclusion: Preliminary results from our study suggest that the low-volume 2 L PEG with bisacodyl does improve patient tolerability with a tendency to be better for Good Bowel Preparation as compared to the traditional 4 L PEG. We continue our study to have a more significant number of patients view these results.
Results: 1382 LSL in 1243 patients were analysed. 1155/1243 (92.9%) patients had a solitary LSL. The majority of patients with multiple LSL had two (77.3%) or three (15.9%) lesions. 889/1382 (64.3%) of LSL were G LSL, were more likely to be solitary (87.0%) than NG LSL (77.5%, p < .001). G LSL were more commonly large (>40 mm in size) (49.5%) than NG LSL (26.0%, p < .001) and were more commonly found in the right colon (proximal to transverse colon) (54.2% versus 48.3%, p = .034). In 88 patients with multiple LSL the dominant LSL was G (49/88 [55.7%]). A dominant G LSL was associated with fewer other LSL than a dominant NG LSL, p = .029.

Table 1: The morphology of the dominant (largest) laterally spreading lesion (LSL) predicts the presence and number of synchronous LSL. Morphology of the dominant lesion did not predict the others would be of the same morphology (p = .697). The dominant LSL was large in 43.2% of cases. Size of the dominant LSL predicted size of the other LSL (p = .001). 58.0% of dominant LSL were located in the right colon. In 65.9% patients all LSL were in the same colonic segment; this was not predicted either by the location of the dominant LSL (p = .860) or its morphology (p = .228).

<table>
<thead>
<tr>
<th>Dominant LSL Morphology</th>
<th>Solitary (n=1155)</th>
<th>Multiple (n=227)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granular (n=889)</td>
<td>773 (87.0)</td>
<td>116 (13.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Non-granular (n=493)</td>
<td>382 (77.5)</td>
<td>111 (22.5)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dominant LSL Morphology</th>
<th>Number of synchronous LSL</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granular (n=49)</td>
<td>41 (83.7) 4 (8.2) 3 (6.1)</td>
<td>1 (2.0)</td>
</tr>
<tr>
<td>Non-granular (n=29)</td>
<td>27 (90.9) 10 (35.6) 0</td>
<td>2 (5.1)</td>
</tr>
</tbody>
</table>

Conclusion: 7% of patients will have more than one LSL. In these patients the dominant lesion morphology predicts the presence and number of additional LSL (the Colonic Mucosal Phenotype). More than 20% of NG LSL are associated with an additional NG lesion whereas G LSL are predominantly large and solitary. Practitioners of endoscopic resection should be aware that NG LSL may be multiple and ensure full examination of the colonic mucosal surface, particularly since they are higher risk for SMIC than G LSL.

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

P0860 WIDE-FIELD PIECEMEAL COLD SNARE POLYPECTOMY OF LARGE SESSILE SERRATED POLYPS WITHOUT A SUBMUCOSAL INJECTION IS SAFE
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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 electrocuturety, 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 sequential 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. 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 15 mm (IQR 14.5–20), range 10–35 mm. 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.

Table 1: Baseline characteristics and outcomes of the 34 patients and 41 SSP that underwent piecemeal cold snare polypectomy (pCSP). IQR – interquartile range, SC1 - first surveillance colonoscopy.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age, mean (standard deviation)</th>
<th>68.58 (10.12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female (%)</td>
<td>27 (79.4)</td>
<td></td>
</tr>
<tr>
<td>Lesion</td>
<td>Size, median (IQR)</td>
<td>15 (14.5–20)</td>
</tr>
<tr>
<td>Location, proximal to transverse colon (%)</td>
<td>26 (63.4)</td>
<td></td>
</tr>
<tr>
<td>Paris classification (%)</td>
<td>0-Ha</td>
<td>40 (97.6)</td>
</tr>
<tr>
<td>0-Hb</td>
<td>1 (2.4)</td>
<td></td>
</tr>
<tr>
<td>Endoscopic evidence of dysplasia (%)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Kudo, highest (%)</td>
<td>41 (100)</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>Duration, median minutes (IQR)</td>
<td>4.5 (1.4 to 6.3)</td>
</tr>
<tr>
<td>Pieces, median (IQR)</td>
<td>3.0 (3–5)</td>
<td></td>
</tr>
<tr>
<td>Protrusion within defect (%)</td>
<td>9 (22.0)</td>
<td></td>
</tr>
<tr>
<td>Intra-procedural bleeding requiring intervention (%)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Histopathology, serrated adenoma (%)</td>
<td>41 (100)</td>
<td></td>
</tr>
<tr>
<td>Low grade cytological dysplasia (%)</td>
<td>3 (7.3)</td>
<td></td>
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<tr>
<td>Outcomes</td>
<td>pCSP (n=41)</td>
<td></td>
</tr>
<tr>
<td>Adverse events</td>
<td>Clinically significant post endoscopic bleeding (%)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delayed perforation (%)</td>
<td>0 (0)</td>
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<tr>
<td>Post procedural pain (%)</td>
<td>0 (0)</td>
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<tr>
<td>Admission to hospital for related complication within 2 weeks</td>
<td>0 (0)</td>
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<tr>
<td>Follow up</td>
<td>Months to SC1, IQR</td>
<td>6 (5–7)</td>
</tr>
<tr>
<td>Recurrence at SC1, (%)</td>
<td>n=8</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Histologic recurrence at SC1, (%)</td>
<td>n=5</td>
<td>0 (0)</td>
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</table>

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.

P0861 THE PROSPECTIVE OBSERVATION STUDY FOR OVER 10MM COLORECTAL LESIONS ENDOSCOPICALLY RESECTED USING BIPOLAR SNARE
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Introduction: Polypectomy of adenomas reduces death due to colorectal cancer; therefore colonoscopy is the gold standard to detect and treat adenomatous lesions. Most adenomatous lesions are less than 20 mm in size. Therefore, these are not indication for endoscopic submucosal dissection (ESD). Recently, there are some reports about cold snare polypectomy (CSP). CSP is effective and easy to remove lesions of less than 5–10 mm in size. On the other hand, in over 10 mm lesions, most endoscopists would remove it by endoscopic mucosal resection (EMR) with monopolar snare. It is expected that the bipolar snare would decrease the incidence of perforation because of electric current flow peculiar to bipolar snare that does not flow through the wall of colon. So, by using bipolar snare, hot snare polypectomy (HSP) that can be easily resected in a short time may be safely performed for over 10 mm colorectal lesions. However, there is no report about them.

Aims & Methods: We aimed to clarify removal method, procedure time and complications for over 10 mm colorectal lesions endoscopically resected using bipolar snare. Consecutive patients with over 10 mm colorectal lesions endoscopically resected using bipolar snare in National Cancer Center Hospital East between September 2016 and March 2017 were enrolled in this study, prospectively. The removal method rate of these lesions, each procedure time, complete resection rate, bleeding rate and perforation rate, and pathological finding were assessed.

Results: A total 92 lesions in 67 patients were analyzed. 47 patients (70%) were male, and the median age was 67 years (range: 44–88). The median lesion size was 15 mm (range: 10–30). The macroscopic type was 33 (36%) polyoid lesions and 59 (64%) flat lesions. The location was 55 (60%) lesions in right colon, 31 (34%)
in left colon and 6 (6%) in rectum. Pathological diagnosis was 22 (24%) hyperplastic polypl 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 seconds (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 (33%) (p = 0.009). The delayed bleeding of HSP and EMR occurred in 2 (3%) lesions and 0 (p < 0.001). Perforation was not occurred. No tumors were horizontal and vertical margin positive. In the pathological diagnosis, 86% of hyperplastic polypl 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.

Table 1: Outcomes after endoscopic mucosal resection at the initial procedure, 2 weeks and subsequent surveillance procedures.

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SMA3 level

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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)

SMA3 score (2)

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Introduction: The SMSA polyp scoring system is an objective method for stratifying the difficulty of polypectomy based on expert consensus opinion. The score is simple, intuitive and has previously not been evaluated in a large multicentre setting.

Aims & Methods: We aimed to determine the ability of the SMSA polyp score to predict robust endpoints after endoscopic mucosal resection (EMR) of colorectal laterally spreading lesions. The SMSA polyp score was applied to a prospectively collected multicentre database of LSL resected by EMS over eight years. This score describes the complexity of polypectomy with respect to four major domains (table 2) and is subsequently divided into four levels. Standardized inject and resect EMR procedures were performed with detailed patient, procedural and outcome data recorded prospectively over the study period including all features of the SMSA. In patients who had multiple lesions resected the largest lesion was for analysis. The primary endpoints were correlation of SMSA score with completion rate, adverse event rate and adenoma recurrence.

Results: 2305 lesions in 2305 patients (47.4% M, 45, 2% right colon) underwent EMS. The majority of lesions were SMSA 4 (50.2%) with a median lesion size of 30 mm (range 20–160 mm). Failed single session EMR occurred in 97 (4.2%) and this was predicted by increasing SMSA (p < 0.01). Intra-procedural bleeding was significantly more common with increasing SMSA (SMSA 2, 19,229 [8.3%] versus SMSA 4 291,1185 [25.1%], p < 0.001). Clinically significant post-EMR bowel perforation was more common as SMSA increased with 412% in the SMSA 2 group and 90% (7.6%) in the SMSA 4 group, p < 0.001. Intra-procedural perforation and delayed perforation were not different between the groups. After EMS surgery at 2 weeks was more common in the SMSA 4 group (p < 0.001).

Of those patients that underwent their first surveillance colonoscopy (SC1), endoscopic recurrence (EDR) was more common in the SMSA 4 group than in the SMSA 2 group, 206 [23.7%] as compared to 9 [5.4%], p < 0.001. The delayed bleeding of HSP and EMR occurred in 2 (3%) lesions and 0 (p < 0.001). Perforation was not occurred. No tumors were horizontal and vertical margin positive. In the pathological diagnosis, 86% of hyperplastic polypl 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.

References


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Introduction: Sessile serrated adenoma/polypl (SSA/P) has been accumulated increasing attention since its risk for developing to cancer had been clarified. These polyps are difficult not only to detect but also to determine their precise malignancy after detection especially in right side colon. Such a difficulty leads high recurrence rate after endoscopic resection. Magnifying function and narrow band imaging (NBI) is reported to be useful for evaluation of SSA/P but it needs special equipment, extra time, and expertise. Easier, uncomplicated, and non time consuming method is desired. The use of acetic acid or acetic acid-indigo carmine mixture have been introduced into endoscopic diagnosis in Barrett’s esophagus, early gastric cancer, and colorectal early cancer. However, there have been no reports on using this agent as aid for the optimal diagnosis of the margin of SSA/P. If this rather cheap agent were helpful for realizing the precise margin of SSA/P, it could decrease insufficient removal of the polyp and recurrence after that.

Aims & Methods: The aim of this pilot study is to assess whether the acetic acid mixture could facilitate the recognition of the margin of SSA/P. We used acetic acid as a mixture with indigo carmine and compared it to conventional evaluating methods; narrow band imaging (NBI) and indigo carmine. From December 2016 to February 2017, patients in whom SSA/P more than 10 mm were found in right side colon in daily practical colonoscopy by single endoscopist in our institute were included. We used the standard scope without magnifying function. First we observed lesions with conventional white light and NBI. Second, we recorded pictures with indigo carmine (IC) spray on it. Finally, we sprayed the mixture of acetic acid and indigo carmine mixture (AIC) directly through the endoscopic working channel without using catheter onto lesion. Using recorded pictures during these procedures, ability for recognizing the margin of polyps were compared between IC and AIC, or NBI and AIC by 3 endoscopists, and the concordance rate of diagnosis among these three were assessed as Kappa statistics.

Results: 9 SSA/P lesions in 7 patients were investigated. In all cases, AIC was helpful to recognize the margin of polyps without causing any obstructive effect. We also observed disappearance of mucous on the surface, diluted crysps caused by acid contact, and aceto-whish reaction on the serificial glands in all lesions. In comparing the ability for recognizing the margin of the lesions, 6.3 in 9 lesions (mean among 3 practitioners) were thought to be as AIC better than IC, and
similarly 7.3 in 9 were better than NBI. Kappa value for all participants was 0.66 (p < 0.001). All polyps were removed endoscopically after examination. All lesions were histologically diagnosed as SSA/P without dysplasia.

Conclusion: Acetic acid was useful and promising to facilitate the endoscopic recognition of the precancerous 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

P0064 AUTOLOGOUS BLOOD: A NOVEL AGENT FOR PREOPERATIVE COLONIC LOCALIZATION: A SAFETY AND EFFICACY COMPARISON STUDY

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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 endoscopic tattooing or India ink tattooing 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 retrospective 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 relation 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 tattooing in an 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 colonic lesions.

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

P0065 SUBMUCOSAL INVASION IN COLORECTAL LATERALLY SPREADING TUMORS (LST) AND ABILITY OF THE ENDOSCOPIST FOR CANCER DETECTION

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Introduction: Luminar 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 (Ht) and depressed lesions (Ht + Hc). Every subclass has been associated with a higher risk of cancer and submucosal invasion (T1sm) 

Results: A total of 631 lesions 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 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 low risk of recurrence after 1 year (4.9% against 18.1%). Considering the LST classification, there were 27.0% LST-G with large nodule, 28.4% LST-G with large nodule, 35.5% flat LST-NG Ht and 9.0% LST-NG with depression Ht + 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 submucoeal 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 = 5.76e-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

P0066 ETHNIC VARIATION OF COLONIC POLYPS: FINDINGS FROM AN INTERNATIONAL HOSPITAL FOR MEDICAL TOURISM IN THAILAND

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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 colonic diseases who underwent colonoscopy were reviewed. Of 25,508 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 (26.25%) (Figure). Ethnicity-specific polyp prevalence were 36.26%, 38.05%, 27.24%, and 34.15%, respectively. Polyps of Caucasian subjects tended to be smaller (4.52 mm) whereas 8.19% were large (≥ 5 mm) whereas 8.19% were large (> 20 mm); hyperplastic polyp, tubular adenoma (TA), and tubulovillous (TVA) adenoma were identified in 43.19%, 53.83%, and 2.34%, respectively. Preliminary (TA + TVA) polyps were found in 56.08%, 50.19%, and 64.23% of the polyps of Asian, Caucasian, and Middle Eastern patients, respectively. Preliminary lesions were found in 52.91% of small polyps.

Conclusion: The findings suggested that number, size, distribution, and pathological type of colonic polyps vary across ethnic groups. As more than half of small polyps were a tubular adenoma, we propose that polyps of all sizes should be removed when feasible.

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

References

Rate of adenocarcinoma and submucosal invasion for each type of LST

Number (n/%) 102/27, 0 107/28, 4 134/35, 5 34/9, 0
Cancer (n/%) 12/11, 8 37/34, 5 11/8, 2 12/35, 3
T1sm (n/%) 5/4, 9 17/15, 9 4/3, 0 8/20, 6
**P0867 ARE WE READY FOR COLONIC ESD IN FRANCE?**

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**Introduction:** Endoscopic submucosal dissection represents the standard of care for large superficial colorectal neoplasms in Japan. In Europe, only few studies related to performing ESD results, especially in the rectal location. Colonic ESD is more technically challenging because of the colonic loops, intestinal motility, the folded anatomy, problems caused by inconstant gravity, and submucosal fibrosis. Colonic ESD is also more risky because perforations are mostly 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 (67%), 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). There was a significant difference between two groups (p < 0.001). The frequency of colorectal neoplastic 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 median number and size of neoplasm were 2.44 and 4.74 mm in the case group and 1.77 and 3.89 mm in the control group. There was a significant difference between two groups (p = 0.001). The distribution of neoplasm in the control group vs in the control group was 12.6% vs 12.6% in cecum, 30.3% vs 36% in ascending colon, 21.4% vs 26.5% 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 sigmoidal region had a significant difference in two groups (the case group 80.7% vs the control group 55.3% (p < 0.001). In terms of neoplasm larger than 5 mm, the frequency was 34.5% (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 endoscopy was 71 lesions (24.5% of all) in the case group and 5 lesions (16.4%) in the control group. The pathological examination in the case and control group showed eight and one had hyperplastic polyops, 2 and zero had sessile serrated adenoma/polyp, 3 and zero had inflammatory polyop, 48 and 19 had low grade neoplasms, 10 and 1 had high grade adenoma and carcinoma, 5 and 2 had carcinoma respectively. There were no significant differences between two groups in the limited cases of high grade adenoma and carcinoma.

**Conclusion:** This study showed the acromegalic patients had an increased risk of colorectal neoplasia especially in the sigmoidal region. It is important to be performed colonoscopy at the diagnosis of acromegaly.

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

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**P0868 RISK OF COLORECTAL NEOPLASM IN PATIENTS WITH ACROMEGALY - A CASE-CONTROL STUDY**

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**Introduction:** It is well known that acromegolys 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 neoplasm 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 performed colonoscopy in our hospital during perioperative 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 control group and 22.5 in the case group and was significantly different 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 and 4.74 mm in the case group and 1.77 and 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 12.6% vs 12.6% in cecum, 30.3% vs 36% in ascending colon, 21.4% vs 26.5% 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 sigmoidal region had a significant difference in two groups (the case group 80.7% vs the control group 55.3% (p < 0.001). In terms of neoplasm larger than 5 mm, the frequency was 34.5% (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 endoscopy was 71 lesions in the case group and 5 lesions 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 polyop, 48 and 19 had low grade neoplasms, 10 and 1 had high grade adenoma and carcinoma, 5 and 2 had carcinoma respectively. There were no significant differences between two groups in the limited cases of high grade adenoma and carcinoma.

**Conclusion:** There were no significant differences between two groups in the limited cases of high grade adenoma and carcinoma.

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

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**P0869 COMPARISON OF WHITE LIGHT COLONOSCOPY AND A NOVEL ROBOTIC COLONOSCOPE IN THE ASSESSMENT OF ULCERATIVE COLITIS**

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**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 (Endots, Paccioti, 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 (UC). 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
Disclosure of Interest:

We recorded endoscopic diagnostic accuracy according to Baron criteria, time to reach the caecum, patient's pain/discomfort and operator's difficulty.

Results: We studied 12 patients (7M:5F), mean age 41 yrs and disease duration 5.33 yrs. 53 colonic segments out of the 54 evaluated had the same assessment of disease activity (absent = 0 points, mild = 1 pt, moderate = 2 pts and severe = 3 pts). The diagnostic accuracy score with R was 0.33 pts (SD 0.60) with S, without significant difference. The caecum was reached in 11/12 cases by S in an average of 29.42 min (SD 28.94), and in 10/12 cases by R, in an average of 46.67 min (SD 24.98 min), with a mean difference of 17.25 min., not statistically significant. Incomplete colon explorations with R clustered in Milan, probably because of smaller experience. An average of 1.45 (SD 0.79) mg of midazolam were used during S while 0.41 (SD 0.38) mg during R. Mean pain/discomfort on a 0–10 scale was 2.08 (SD 1.67) for R and 4.17 (SD 1.74) for S, with a statistically significant difference (p=0.06) favouring R. Mean perceived operator’s difficulty on a 0–10 scale was 4.44 (SD 1.78) for R, and 4.08 (SD 1.44) for S, with a mean difference of 0.42 pts favouring S, not statistically significant.

Conclusion: R appears to be a promising method for disease staging in patients with ulcerative colitis, because of comparable accuracy and reduction in pain and discomfort. A tool channel to obtain biopsies and perform therapeutic endoscopy, together with images of higher definition (CMOS digital Camera HD ready) and virtual chromo-endoscopy, useful for follow-up and screening for dysplasia in patients with long duration of disease are now available in the latest version of R. The “column” connected to the latest version of the robot is the size of a portable suitcase, and suitable for remote operation. Further developments with new versions of the robot are needed to assess role of this technology from an economic point of view and in special settings like failed colonoscopies, dysplastic lesions in UC, bedside colonoscopy, colonoscopy in rural areas.

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

References


P0870 WHAT IS THE CONCORDANCE FOR THE DIAGNOSIS OF LATERALLY SPREADING-TYPE LESIONS (LST) AMONGST WESTERN AND JAPANESE EXPERT ENDOSCOPISTS?


Aims & Methods:

Assessments included LST classification (LST-G homogeneous, LST-G mixed, LST-M malignant) were by 6 expert endoscopists; 3 from Japan and 3 from the West. We studied 12 patients (7M/5F), mean age 41 yrs and disease duration 6.27 yrs (45.4%), Western diagnosed more LST-G than Japanese (54.6 vs. 37.3%; p=0.007). The interobserver agreement of the LST classification amongst Western & Japanese experts. Aims & Methods:

A total of 40 endoscopic video clips depicting LSTs (10% margin) was scored 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 amongst Western & Japanese experts was good with a weighted Kappa of 0.61 (IC 95% 0.45–0.78) 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 for Japanese (weighted Kappa of 0.81; 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). Piecemal Endoscopic Resection was suggested in 34, 7% cases by Western, but never by Japanese endoscopists, whereas Endoscopic Submucosal Dissection was recommended in 50.4% and 16.1% cases by Japanese and Western experts respectively (p < 0.0001).

Conclusion: 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.

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

References


DISSECTION OF LARGE NON-PEDUNCULATED COLORECTAL LESIONS: A MULTICENTER STUDY FROM THE SPANISH ENDOSCOPY SOCIETY ENDOSCOPIC RESSECTION GROUP


We studied 12 patients (7M/5F), mean age 41 yrs and disease duration 6.27 yrs (45.4%), Western diagnosed more LST-NP than Japanese (54.6 vs. 37.3%; p=0.007). The interobserver agreement of the LST classification was good in the Japanese cohort and moderate in the Western. Again, difference in concordance was not statistically significant (p=0.22). When only two categories were considered (LST-NP vs LST-NG), agreement was very good for Japanese (weighted Kappa of 0.81; 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). Piecemal Endoscopic Resection was suggested in 34.7% cases by Western, but never by Japanese endoscopists, whereas Endoscopic Submucosal Dissection was recommended in 50.4% and 16.1% cases by Japanese and Western experts respectively (p<0.0001).

Conclusion: 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.

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

References


calculated the SMSA score of difficulty and assessed the ability of SMSA to identify 5 outcomes: 3-month 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 (κ = 0.33). 255 patients (19.9%) had 3-months recurrence after EMR, 84 (11.6%) had recurrence at 1 year, 78.5% suffered delayed bleeding and 35.1% underwent 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 too (p = 0.006), but not for perforation.

**Conclusion:** The SMSA grading tool is a predictor of outcomes or recurrences and bleeding following resection of LNPCI. However, in our multi-center sample, it does not appear to overcome the utility of a subjective indicator of difficulty used 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 HISTOLOGY FOR THE DIAGNOSIS OF GASTROINTESTINAL TUBERCULOSIS (GITB)**
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**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:** Utility of 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 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 patient had 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, ileocolic n = 28). Concomitant evidence of active or healed pulmonary tuberculosis was seen in 21% of cases. The mean age, haemoglobin and erythrocyte sedimentation rate of patients with tuberculosis were 36.1±4.16 years, 10.2±2.4 g/dl, 37.8±15.53 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 diarrhoea (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 46.8%, 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 anti-tubercular therapy. Twenty eight completed full therapy and improved.

**Conclusion:** NBI-M guided biopsy improved the yield of histology for diagnosis of GITB.

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

**Reference**
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**
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**Introduction:** Colorectal cancer is a leading cause for cancer related mortality. Adenomatous polyp, the precursor, 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 surgical resection.

**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 1.06 (1.02–1.10). In a multivariate analysis for safety, independent risk factors for post-polypectomy complications were: bleeding (OR 95%CI 0.33 (0.16–0.67), perforation (OR 95%CI 1.66 (1.04–2.65) and minimal discomfort up to early termination of procedure (OR 95%CI 1.43 (1.03–1.98)). 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%CI 1.04 (1.01–1.06), polyph morphology (OR 95%CI 2.55 (1.45–4.51), flat OR 95%CI 2.40 (1.04–5.52) and submucosal adrenaline injection (OR 95%CI 1.87 (1.11–3.10)). 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.
Prophylactic mucosal defect closure was effective in reducing delayed bleeding.

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), PSF and perforation (n = 61). Number of events on NC group: delayed bleeding (n = 13), PSF 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 = 0.001; I² = 0.0%; 3 RCT and 165 lesions included). There was a non-significant trend for PSF/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 PSF/perforation prevention.Disclosure of Interest: All authors have declared no conflicts of interest.

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: All authors have declared no conflicts of interest.

P0875 COLORECTAL MUCOSAL DEFECT CLOSURE FOLLOWING ENDOSCOPIC MUCOSAL RESECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Clinical delay or small perforating defects are 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.

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 patients had good 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 polyethylenoglycol 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.

Conclusion: 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 4h50 (SD) and 8h09 (PD). Adequate bowel cleansing was found in 81% 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 cleansing 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 preparation 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).

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

P0876 COLORECTAL MUCOSAL DEFECT CLOSURE FOLLOWING ENDOSCOPIC MUCOSAL RESECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Split-dose bowel preparation (SD) is more effective in bowel cleansing than previous day preparation (PD).

Aims & Methods: The main objective of the study was to explore the impact of a SD protocol 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 polyethylenoglycol 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.

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
P0877  EQUAL ADENOMA DETECTION RATE IN COLORECTAL ESD CONVERSION TO EMR AT A WESTERN REFERRAL CENTER IN DAILY PRACTICE

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Introduction: There are limited data concerning risk factors and consequences of colorectal endoscopic submucosal dissection (ESD) conversion to en-bloc resection (EMR) in western centers.

Aims & Methods: Hospital-based frequency-matched case-control retrospective study. All patients were identified from a database of 223 consecutive dissections between 2013 and 2017. The cases were those with ESD conversion to EMR for a cancer already installed, especially with the presence of clinical signs.

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%, 15.5% of cases (n = 10) were diabetic, 12.5% (n = 12) hypertensive, 12.5% (n = 12) with ischemic heart disease. 8.4% (n = 8) had either obesity and 9% (n = 9) had a digestive neoplasia. Colonoscopy was indicated for hematocrit 40% (n = 38), transit disorders in 33.6% (n = 22), abdominal pain in 14.7% (n = 14), BMI of 3.1% (N = 3), radiographic abnormalities in 13.6% (n = 13), iron deficiency anemia in 2.4%, and for patients with a family history of colorectal cancer in 1% of cases. Colonoscopy was abnormal in 83% (n = 93), with polyps in 48.5% (n = 45), suspected lesions of malignancy in 16.1% (n = 15), Diarrhea in 19.3% (n = 18), IBD in 19.3% (n = 18), IBD with complications in 12% (n = 11) and rectal erosions in 2.1% (n = 2). The rate of malignant lesions diagnosed by colonoscopy was 53.3% of females (n = 8) versus 46.7% of males (n = 7) (p = 0.26), 13.5% (N = 2) with hematocrit <20% and 86.7% (n = 13) with altered general status (n = 4) versus conserved general status (n = 11) (p = 0.07). The evolution of 46.6% of patients diagnosed with malignant tumor pathology showed that 33.5% of patients underwent surgery and 13.3% of patients had died.

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

P0878  RISK FACTORS AND PRACTICAL CONSEQUENCES OF COLORECTAL ESD CONVERSION TO EMR AT A WESTERN CENTER

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Introduction: There are limited data concerning risk factors and consequences of colorectal endoscopic submucosal dissection (ESD) conversion to en-bloc resection (EMR) in western centers.

Aims & Methods: Hospital-based frequency-matched case-control retrospective study. All patients were identified from a database of 223 consecutive dissections between 2013 and 2017. The cases were those with ESD conversion to EMR for a cancer already installed, especially with the presence of clinical signs.

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%, 15.5% of cases (n = 10) were diabetic, 12.5% (n = 12) hypertensive, 12.5% (n = 12) with ischemic heart disease. 8.4% (n = 8) had either obesity and 9% (n = 9) had a digestive neoplasia. Colonoscopy was indicated for hematocrit 40% (n = 38), transit disorders in 33.6% (n = 22), abdominal pain in 14.7% (n = 14), BMI of 3.1% (N = 3), radiographic abnormalities in 13.6% (n = 13), iron deficiency anemia in 2.4%, and for patients with a family history of colorectal cancer in 1% of cases. Colonoscopy was abnormal in 83% (n = 93), with polyps in 48.5% (n = 45), suspected lesions of malignancy in 16.1% (n = 15), Diarrhea in 19.3% (n = 18), IBD in 19.3% (n = 18), IBD with complications in 12% (n = 11) and rectal erosions in 2.1% (n = 2). The rate of malignant lesions diagnosed by colonoscopy was 53.3% of females (n = 8) versus 46.7% of males (n = 7) (p = 0.26), 13.5% (N = 2) with hematocrit <20% and 86.7% (n = 13) with altered general status (n = 4) versus conserved general status (n = 11) (p = 0.07). The evolution of 46.6% of patients diagnosed with malignant tumor pathology showed that 33.5% of patients underwent surgery and 13.3% of patients had died.

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

P0880  ENDOSCOPIC CLOSURE OF ACUTE IATROGENIC PERFORATIONS OF THE GASTROINTESTINAL TRACT AND PREDICTORS OF NEED FOR EARLY SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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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 mortality.
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. 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: 90.6%–95.4%), clinical success was 89.7% (n = 431/474, 95% CI: 85.5%–93.9%), and complication rate was 1.3% (n = 7/474, 95% CI: 0.3%–2.3%). Technical success for endoclamp closure was 96.6% (95% CI: 94.2%–98.2%), and clinical success was 93% (95% CI: 87.1%–97.2%), and complications in 9% (95% CI: 80.6%–99.5%). For OTSC (Over the scope clip device), technical success was 83.8% (95% CI: 63.9%–96.6%), clinical success was 77.9% (95% CI: 56.8%–93.3%), and complication rate was 4.1% (95% CI: 2.4%–5.6%). The technical success rate for Self-expanding metallic stent (SEMS) is 100% (95% CI: 71.5%–100%), clinical success is 91% (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 closure and need for further surgery included large size, severe 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 is 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


P0882 "O-RING SIGN" AS A NOVEL COLONOSCOPIC FINDING WITH NARROW-BAND IMAGING FOR DETECTING DEPRESSED-TYPE COLORECTAL LESIONS

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Introduction: In recent years, colorectal cancer (CRC) has become a focus of attention as likely representing “missed” or “rapidly-growing” lesions in colonoscopy screening for colorectal cancer (CRC). Currently, lesions thought responsible for CRC include sessile serrated adenomas/polyps or flat and depressed-type lesions occurring on the right side of the colon, and there is an increasing need for endoscopic modalities to prevent overlooking these lesions. Colonoscopic screening using narrow-band imaging (NBI) during colonoscopy withdrawal from the cecum, which was started at our clinic since November 2008, suggested that NBI colonoscopy was superior to white-light imaging (WLI) colonoscopy in detecting flat and depressed-type lesions (1). With NBI, the depressed area of a lesion is recognized as “whitish” and the surrounding ring-like mucosa as “brownish”, which constitutes the “O-ring sign”.

Aims & Methods: We aimed to evaluate the incidence and characteristics of the “O-ring sign” in depressed-type colorectal lesions. A total of 227 endoscopically resected and histologically confirmed depressed lesions (Ha + Ic, 156, Ha, 71) were included for analysis. The colonoscopic images of these lesions were retrospectively examined for “O-ring sign” positivity and intensity (grade 0, negative; grade 1, mildly to moderately positive; and grade 2, highly positive). Of these, 16 were excluded as unvaluable and a total of 211 evaluable lesions were analyzed. Results: Of the 211 lesions (Ha + Ic, 141; Ic, 70) analyzed, 84 (Ha + Ic, 68; Ic, 24), 105 (Ia + Ic, 69; Ic, 36), and 22 (Ia + Ic, 12; Ic, 10) were found to be in grades 0, 1, and 2, respectively, with 60.2% of these shown to be “O-ring sign” positive (127/211), with Ha + Ic and Ic accounting for 57.4% (81/141) and 65.7% (45/67), respectively, of these lesions. While an examination by tumor size and location revealed no clear tendency in “O-ring sign” positivity, an examination grade revealed a higher “O-ring sign” positivity rate among those with high-grade dysplasia (84.6%, 11/13) than those with low-grade dysplasia (59.2%, 116/196).

Conclusion: NBI colonoscopy screening for the “O-ring sign” as an index appears to improve the detection of depressed-type colorectal lesions.

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

Reference
1. Fuji T. Gastrointest Endosc 2010; W1480
could have many experiences of gastric ESD that may be beneficial for the trainee endoscopist who had no experience of gastric ESD. 

Conclusion: Trainee endoscopist may have a good learning curve in completion rate and increasing experience reflects in a remarkable success in colorectal ESD. We confirmed that the training of colorectal ESD 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.

PO884 LARGE BALLOON DILATATION VERSUS MECHANICAL LITHOTRIPSY AFTER ENDOSCOPIC SPHINCTEROTOMY IN MANAGEMENT OF LARGE COMMON BILE DUCT STONES AMONG CIRRHTIC PATIENTS

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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 susceptibility to erosions, as well as to the occurrence of adverse events such as bleeding during the treatment. With liver cirrhosis can tolerate ERCP to treat their biliary tract or pancreatic diseases. Patients with liver cirrhosis are three times more susceptible to cholecholangitis, compared to non-cirrhotic patients. Patients with liver cirrhosis have an increased risk of complications of upper gastrointestinal and other diseases and that is why ERCP is increasingly performed for patients with cirrhosis. Endoscopic sphincterotomy (EST) has become a standard step in management of CBD stones and introduction of both mechanical lithotripsy (ML) and large balloon dilation (LBD) facilitated extraction of the large CBD stones. Despite the increasing use of both techniques, a head-to-head comparison among therapeutic benefits and complications between mechanical lithotripsy and large balloon dilation after sphincterotomy in patients with liver cirrhosis. Ninety eight cirrhotic patients suspected higher rates of adverse events especially bleeding diathesis. Patients with liver cirrhosis patients Child A or B with clinical and laboratory proved obstruction jaundice, presence of large bile duct stones and deep selective cannulation of the bile duct. Exclusion criteria included: Known allergy to the used contrast material, Child C cirrhosis, the Need for needle knife puncturing in order to achieve bile duct cannulation, Selective bile duct cannulation achieved after multiple transpancreatic or transgastric papillotomies. All patients were subjected to thorough history taking, complete clinical examination. Pancreatic enzymes concentrations were measured 4 hours before and 24 hours after the procedure, complete blood count and liver function tests were performed before and after the procedure. Before and during ERCP, stone size and number were verified. Diagnosis of common bile duct stones was confirmed either by pre-ERCPC investigations including abdominal ultrasonography (US), CT, MRCP or at the time of ERCP. Large CBD stone: Is defined before ERCP by a bile duct stone 12 mm or more (transverse diameter of the largest stone) by US, CT or MRCP and during cholangiography showed large filling defect more than 12 mm that could not be extracted using a standard balloon catheter. 

Results: There were no dropouts and all subjects remained in the study till the end of the study. Initial, middle, late period, respectively. In the operation time, there was a significant difference in the operation speed of endoscopist C among each endoscopist.

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>
<td></td>
</tr>
</tbody>
</table>

Conclusion: In conclusion endoscopic sphincterotomy plus LBD is a safe and effective treatment for endoscopic removal of large common bile duct stones in cirrhotic patients when compared with endoscopic sphincterotomy plus ML. Despite the increasing use of both techniques, a head-to-head comparison among therapeutic benefits and complications between mechanical lithotripsy and large balloon dilation after sphincterotomy in patients with liver cirrhosis. Ninety eight cirrhotic patients suspected higher rates of adverse events especially bleeding diathesis. Patients with liver cirrhosis patients Child A or B with clinical and laboratory proved obstruction jaundice, presence of large bile duct stones and deep selective cannulation of the bile duct. Exclusion criteria included: Known allergy to the used contrast material, Child C cirrhosis, the Need for needle knife puncturing in order to achieve bile duct cannulation, Selective bile duct cannulation achieved after multiple transpancreatic or transgastric papillotomies. All patients were subjected to thorough history taking, complete clinical examination. Pancreatic enzymes concentrations were measured 4 hours before and 24 hours after the procedure, complete blood count and liver function tests were performed before and after the procedure. Before and during ERCP, stone size and number were verified. Diagnosis of common bile duct stones was confirmed either by pre-ERCPC investigations including abdominal ultrasonography (US), CT, MRCP or at the time of ERCP. Large CBD stone: Is defined before ERCP by a bile duct stone 12 mm or more (transverse diameter of the largest stone) by US, CT or MRCP and during cholangiography showed large filling defect more than 12 mm that could not be extracted using a standard balloon catheter.

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received anesthesiologist-directed BPS, required bag-mask ventilation and the ERCP 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-III patients requiring inpatient care after ERCP.

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

References

PO887 DUODENOSCOPES AND LINEAR ECHOENDOSCOPES ARE NOT INFECTED BY THE SAME MICROORGANISM:
NATIONWIDE PERSISTENT HIGH PREVALENCE IN THE NETHERLANDS

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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 attributed to their complex design, which includes a ball-valve Y-connection, forceps elevator and elevator wire channel. Linear echoendoscopes (LEs), used for endoscopic ultrasound (EUS) procedures, have a similar design with an additional balloon channel. Previously, we found that contamination of duodenoscopes was widespread in the Netherlands. It is unclear if the increased awareness of contamination and associated outbreaks has improved reprocessing outcomes of duodenoscopes and linear echoendoscopes (DLEs).

Aims & Methods: This cross-sectional study was conducted to determine the prevalence of bacterial contamination of all reprocessed DLEs in The Netherlands. All 75 Dutch ERCP/EUS centres were invited to sample all DLEs using centrally distributed kits, according to uniform sampling methods and video instructions. Local staff sampled four to six sites per DLE depending on endoscope type, including swabs (protection cap, forceps elevator), flushes (biopsy, suction, air/water and forceps elevator channel) and brushes (biopsy, air/water and balloon channel). Samples were centrally cultured. Cultures were interpreted using standard culture and culture interpretation were consistent with Dutch guidelines. Contamination was defined as AM20: any microorganism with ≥20 colony forming units (CFU)/20 mL, and MGO: presence of microorganisms with gastrointestinal or oral origin, independent of CFU count.

Results: Between October 2015 and April 2017, 62 (85%) Dutch ERCP/EUS centres responded with 1130 samples of 215 DLEs (158 duodenoscopes and 57 LEs). Fifteen different DLE types from three distinct manufacturers were sampled. In total 29.62 (47%) centres had at least one AM20 or MGO contaminated DLE, similar to the prevalence (31.66 centres; 47%) in our previous study (p = 0.98). Twenty-eight (13%) DLEs from 19 (31%) centres were AM20 contaminated. Thirty-two (15%) DLEs from 23 (37%) centres were contaminated with MGO, including Enterobacteriaceae, Pseudomonas aeruginosa and Candida albicans. Of 19 patients with cholangiocarcinoma, success rate of SpyDS guided biopsy was 100% (19/19). M.J. Bruno: Prof. Dr. Marco J. Bruno received personal fees from Boston Scientific, personal fees from Cook Medical and grants from Pentax Medical outside the submitted work. All other authors have declared no conflicts of interest.

PO888 TECHNICAL EVOLUTION OF A NEWLY-DEVELOPED DIGITAL CHOLANGIO/ Pancreato-scopy (SpyGlass DS) FOR INTERVENTIONAL EVALUATION OF PANCREATOBILIARY NEOPLASM

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Introduction: Although a newly digital cholangio/pancreato-scopy (SpyDS) has been reported to be useful for therapeutic purpose in patients with biliary diseases, clinical application for diagnostic purpose of pancreateobiliary neoplasms remains unclarified.

Aims & Methods: To evaluate the usefulness and safety of cholangio/pancreato-scopy using a SpyDS for preoperative evaluation of pancreateobiliary neoplasms. Patients and methods: Between October 2015 and Feb 2017, consecutive 26 patients (19, cholangiocarcinoma; 7, IPMN) who underwent cholangio/pancreato-scopy using a SpyDS for preoperative evaluation were included in this study. Diagnostic accuracy of malignancy and tumor extent evaluation by cholangio/pancreato-scopy guided biopsy/cytology and adverse event after the procedure were retrospectively investigated.

Results: Of 19 patients with cholangiocarcinoma, success rate of SpyDS guided mapping biopsy was 83% (16/19) and diagnostic accuracy of adenocarcinoma was 77.8% (15/19). Of 7 patients with IPMN, diagnostic accuracy of malignancy was 85.7% (6/7).
tumor extent using SpysDS plus mapping biopsy was 92%. One patient developed mild cholangitis after the procedure. As for IPMN, pancreatoscopy using a SpysDS could visualize intraductal papillary tumors in all patients, and SpysDS guided biopsy/cytology was successfully performed. Diagnostic accuracy of malignancy was 100% without any adverse event after the procedure.

**Conclusion:** Preoperative evaluation using a SpysDS plus histological evaluation for pancreaticobiliary neoplasm was found to be useful and safe. Further study is needed to establish evidence about the usefulness of this technique.

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

### P0889 ACUTE PANCREATITIS AND HYPERAMYLASAEMY DEVELOPMENT AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY – CHALLENGES AND PREVENTION

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**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 hyperamylasaemia 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 these cases ERCP is the final stage in the diagnostic and therapeutic algorithm. All ERCPs were carried out by one expert endoscopist. Patients from the prospective group were administered intramuscularly with Diclofenac (75 mg) before and after the manipulation. The methods used in the study were: demographic data; history and physical examination; laboratory data; imaging methods; ERCP; clinical course and statistical methods for processing data received.

**Results:** The most common indication for ERCP in all patients was choledocholithiasis (88.1%). In a minority of patients ERCP was purely diagnostic (6.1%), while at 93.9% it was also therapeutic. Of all patients at 47 of cases (9.5%) hyperamylasaemia was observed, and at 12 or 2.4% - acute pancreatitis was observed. Patients who developed acute pancreatitis were found to have a lower level of alkaline phosphatase and ES and higher values of leucocytes on the 72nd hour. The univariate logistic regression analysis identified the following risk factors for developing hyperamylasaemia: 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 hyperamylasaemia 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 hyperamylasaemia (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 hyperamylasaemia 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

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**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 (TEESAT)] 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 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.
Disclosure of Interest:

Results: Of the 62 programs invited, 20 AETs 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 majority were ASGE biliary grade 1 (77%) and only 14% for pancreatic indication. Among biliary ERCP cases, AETs attempted native papilla cannulation and sphincterotomy in 1199 (53%) and 901 (40%) cases, respectively. The mean time allowed for cannulation was: overall - 4.0 min (SD 4.3), native papilla - 5.7 min (SD 4.8), and AET failed cannulation cases - 6.2 min (SD 5). There was no change in the time allowed for native papilla cannulation during the 1-year period (p = 0.28). AETs were involved in a small proportion of cases requiring advanced cannulation techniques such as double-wire technique, placement of pancreatic duct stent and precut sphincterotomy (6%). Learning curves for individual endoscopists, 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 curves and competence among AETs in ERCP validating the shift away from threshold numbers to determine competence.

Patient & procedural characteristics

Female: 71; 53.8% 79; 66.9%
Median age: 63.5 63
History of Spieltic of Oddi dysfunction: 0 0
History of Perccp: 0 0
History of chronic pancreatitis: 1; 0.8% 1; 0.8%
Trainee involvement: Normal Lfts: 21; 16.5% No data for 5 patients 11; 10% No data for 8 patients
Non-dilated bile ducts: 39; 29.5% 18; 15.3%
Pancreatic duct wire/contrast: 19; 15% Excludes 5 unsuccessful cannulations 30; 25.9% Excludes 2 unsuccessful cannulations
Precut sphincterotomy: 4; 3% 9; 7.6%

Results: A total of 250 procedures were audited. E1 performed 132 procedures (54% female; median age 63.5) and A1 performed 118 procedures (67% female; median age 63). 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

Our AHP didn’t reduce the incidence of PEP or its severity. Indeed, PEP was mild. There were no complications related to AHP. We didn’t find any patient remaining 3 were mild. In the AHP group, 3 PEP were moderate and 4 were severe. Between both PEP incidences was not significant. Despite our study didn’t show the AHP group presented more PEP than the SH group, although the difference was not significant after the ERCP. One (94 years old, male) was in the F group and the other (81 years old, male) was in the non-F group. The distributions of used benzodiazepines (midazolam/diazepam) were not different (Fisher’s test: p-value = 0.05). The patient number who got aspiration pneumonia were 102/13/0 and 122/9/1 in the F group and the non-F group, respectively (Fisher’s test: p-value = 0.05). There were no significant differences of patient characteristics between both groups. The mean procedure times were 36.7±7.0 minutes in the F group and 30.3 minutes in the non-F group, respectively. The details of procedures for the major papilla (endoscopic sphincterotomy/endoscopic papillary balloon dilation/others) were 40/13/5/56 in the F group and 25/2/3/41 in the non-F group, respectively. The distributions of endoscopic biliary drainage or stenting/none were 94/21 in the F group and 59/16 in the non-F group, respectively (Fisher’s test: p-value = 0.85). There were no significant differences of procedure characteristics between both groups. 3) Two patients (1.05%) developed aspiration pneumonia after ERCP. One (94 years old, female) 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 1/3 in the F group and 19/12 in the non-F group, respectively (Fisher’s test: p-value = 1). Conclusion: Flumazenil did not have any preventive effect on aspiration pneumonia related to conscious sedation after ERCP.

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

References

P0894
ERCP CYTOLOGY YIELD – DOES THE BRUSH MATTER?
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Introduction: Extra-hepatic biliary tree strictures are caused by a variety of malignant and benign diseases. The brushing of stenosis during ERCP is safe and easy to perform, however, its low sensitivity, ranging from 30 to 50%. Efforts to improve cytology yield include dilution of the stricture prior to brushing and multiple brush passages, both without significant success. In 2011, US Endoscopy introduced the Infinity® cytology brush - a 14Fr (4, 75 mm) device that combines soft and stiff bristles in order to improve acquisition of cytology samples.

Aims & Methods: We aimed to determine if a new-design brush can improve the diagnostic yield of biliary cytology. From February 2015 until December 2016, we evaluated 192 patients undergoing ERCP in a single center. All patients with malignant or benign strictures were included in this prospective study. A classical 8Fr biliary brush (e.g. Boston, Boston Scientific, Endocath) was used as a control. The new Infinity® brush was used in all cases for ERCP cytology. The yields of both brushes were compared with histological controls, where a classical 8Fr biliary brush was used.

Results: Thirty-five new brush cases were compared with 52 historical controls. There was no significant difference between gender (57% Vs. 52% male; p > 0.05), age (mean 70.4 Vs. 74 years; p > 0.05), location of stricture (common bile duct 77% Vs. 84%; p > 0.05), length of stricture (between 1–3 cm in 38% Vs. 84%; p > 0.05) or dilation prior to sampling (71% Vs. 57% p > 0.05). The sensitivity, specificity, positive predictive value and negative predictive value were 66.6% Vs. 80% (p = 0.05), 81% Vs. 82% (p > 0.05), 0.61 Vs. 0.65 (n.s) and 0.54 Vs. 0.58 (n.s) respectively. There was no significant difference between the cases (31%) and controls (27%), either for pancreatic cancer (20% Vs. 24%; p > 0.05) nor cholangiocarcinoma (56% Vs. 50%; p > 0.05). The Infinity® brush was used in all cases of ERCP cytology. These were compared with histological controls, where a classical 8Fr biliary brush was used. In both groups, at least two passages were made, with transfer to a thin prep solution, as per prior protocol. Follow-up data, namely clinical course, radiological data or other histological results were collected for a definitive diagnosis.

Conclusion: There were significantly more samples with adequate cellularity for the new Infinity® brush than for the control brush (86% Vs. 100%, p < 0.05). The sensitivity of new design brush and the control brush were 86% Vs. 100%, respectively. There was no difference between the new designed and control brush (86% Vs. 100%, p > 0.05) or dilation prior to sampling (71% Vs. 57% p > 0.05) between the two groups. Physicians’ impression of malignant stricture during ERCP was more frequent in new brush cases, and with statistical significance (91% Vs. 75%; p = 0.052). The Infinity® brush was used in all cases of ERCP cytology. These were compared with histological controls, where a classical 8Fr biliary brush was used. In both groups, at least two passages were made, with transfer to a thin prep solution, as per prior protocol. Follow-up data, namely clinical course, radiological data or other histological results were collected for a definitive diagnosis.

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

References
Early precut is as efficient as pancreatocutaneous duct cannulation initially by chance, the patients were randomized into early precut (Group A) or usual early precut sphincterotomy with pancreatocutaneous duct (Group B). In Group A, pancreatocutaneous duct cannulation within 5 times and attempted precut papillotomy with or without cystic duct puncture. If Group B, from the precut stent was inserted and then precut with an incision over a pancreatocutaneous duct 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 was more effective in pancreatic duct 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 with conventionally persistent cannulation attempts.

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

References
should consider a conservative line of treatment in CBDS in borderline CB in order to decrease the cost and avoid unnecessary ERCP.

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

P0900 PROSPECTIVE STUDY ON METHODS AND SUCCESS OF BILIARY CANNULATION OF 458 VIRGIN PAPILLAS - QUALITY ASSURANCE OF ERCP AT OUR DEPARTMENT

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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 papillae were never approached due to duodenal stenosis (10) 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 last 5.6% 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 was achieved by pancreatic guidewire technique, and we used profilaic 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 refused further intervention. 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 tract disease in 34 cases that necessitated some endoscopic interventions (infiltration/coagulation/stenting), of them 7 (1.6%) 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 the failed deep cannulation of pancreatic duct. In our opinion, this is an important phase of process to avoid long lasting traumaisation of the papilla. Our complication rate of post-ERCP pancreatitis was good while the post-sphincterotomy perforations, 1 had early surgery – he died on the 14th day, another 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


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Introduction: The procedures related to endoscopic retrograde cholangiopancreato- graphy (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 development of PEP. Patients who presented with at least two of the following complications 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 1932 patients were finally analyzed. PEP occurred in 142 patients (7.3%); it was mild in 117 patients (6.0%) and severe in 25 patients (1.3%). Univariate analysis showed that female gender, naive papilla, surgically altered gastrointestinal anatomy, no coexistence of acute cholangitis, diagnostic ERCP, and elective 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 1.570–3.291), naive papilla (OR 3.024; 95%CI 1.805–5.066), surgically altered gastrointestinal anatomy (OR 2.607; 95%CI 1.378–4.931), precut sphincterotomy (OR 2.297; 95%CI 4.933–5.324), 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

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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 5 high-volume centers, 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 who developed PEP 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) acute pancreatitis on CT. The severity was assessed based on the criteria of 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.

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 threshold for 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 findings 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 tractcholecystectomy technique in the treatment of gallbladder disease without cholecystectomy be patient with cholesterol gallstones and high surgical risks were enrolled between January 2015 and March 2017. Endoscopic ultrasound (EUS)-guided cholecystoduodenostomy by deploying a double-flanged fully covered metal stent with hot stent delivery was performed and endoscopic sphincterotomy (EST) was also performed during this procedure for those patients with accompanying common bile duct stones. One or two weeks later an forward-viewing endoscope was advanced into the gallbladder via the stent, and cholecystolithotomy or polypectomy was performed. After the stents were removed, a pigtail-type nacolo-cholecystic drainage catheter was inserted into the gallbladder over the guide wire and removed 2 days later. Four weeks later gallbladder was assessed by abdominal ultrasound.

Results: EUS-guided cholecystoduodenostomy with double flanged mental stent deployment was successfully performed in all of 26 patients (Male:Femal., 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 sphincterotomy (19) and polyectomy (2) were performed simultaneously 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
P0906 COMPARISON OF DIAGNOSTIC PERFORMANCES FOR THE EVALUATION OF SUSPECTED MALIGNANT BILARY STRICTURE AMONG SAME SESSION EUS-AND ERCP-GUIDED TISSUE SAMPLING
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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 (ERCP-TS), there were few studies for which techniques are better dependent on primary tumor.
Aim and Methods: In our study, we compared the diagnostic yields between EUS-TS and ERCP-TS 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 pancreaticobiliary obstructive lesion.
For cytopathologic diagnosis, endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) or biopsy (EUS-FNB) and ERCP-TS using 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, ERCP-TS from pancreatic duct in 23, and ERCP-TS 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%) had nonmalignant lesions. Rates of diagnostic accuracy comparing to ERCP-TS (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 ERCP-TS (84.4% vs. 51.1%, P = 0.003). Conclusion: EUS-TS is superior to ERCP-TS 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 cytopathologic diagnosis
Disclosure of Interest: All authors have declared no conflicts of interest.

P0907 PREVALENCE OF POSTERIOR MEDIASTINAL LYMPHADENOPATHIES IN PATIENTS UNDERGOING ENDOSCOPIC ULTRASOUND-FINE NEEDLE ASPIRATION-MALIGNANT INDICATIONS: A PORTUGUESE SINGLE-CENTRE PROSPECTIVE STUDY
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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) to rule-out malignant neoplasms (PCNs).
Aims & Methods: 1. To document the prevalence and characteristics of mediastinal lymphadenopathies in patients submitted to EUS for non-malignant extra-thoracic disease. 2. To identify predictive factors for the presence of mediastinal lymphadenopathies. 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 echoendoscope in all patients undergoing EUS due to benign extra-thoracic pathology, without history of oncologic disease.
Demographic, clinical and 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 at least 2 stations. Only 6% of these had short axis 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 occupational or environmental respiratory exposure (prevalence 83% vs 71%; average number 3 vs 1.7). By logistic regression analysis, none of the variables analysed 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,1, in particular concerning the site 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.

Reference

P0908 ACCURACY OF ENDOCOPIC ULTRASOUND IN GASTRIC ADENOCARCINOMA PATIENT SELECTION FOR NEOADJUVANT THERAPY
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Introduction: Recent studies documented the positive impact of neoadjuvant treatment for gastric adenocarcinoma ≥ 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 anatomopathological 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 (S)] of the endoscopic ultrasound for T ≥ 2 and/or N + (criteria for neoadjuvant treatment) was assessed using the anatomopathological staging of the resected surgical specimen.
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+). The overall kappa, sensitivity and specificity of the endoscopic ultrasound for T ≥ 2 and/or N + were 0.702 (p < 0.001), 85.2% (95% CI: 75.6–92.1%) and 87.3% (95% CI: 76.9–94.4%), 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 was 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

P0909 IS IT USEFUL TO REPEAT ENDOCOPIC ULTRASOUND WITH FINE NEEDLE ASPIRATION OF PANCREATIC CYSTIC LESIONS? A RETROSPECTIVE STUDY
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Introduction: Fine needle aspiration (FNA) and pancreatic cystic lesions (PCNs) require initial imaging characterization and frequently follow-up. Endoscopic ultrasound with fine-needle aspiration (EUS-FNA) for CEA measurement and cytology of cystic fluid is the most accurate diagnostic method in these lesions. The role of repeated EUS-FNA with cyst 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 cyst fluid analysis for CEA and cytology had a change in cyst classification or on clinical decision. Retrospective analysis of a EUS database, with 284 patients who had EUS-FNA for pancreatic cyst evaluation from 2007–16, of which 35 had 2 EUS procedures, and of these, 22 had 2 consecutive EUS-FNA procedures.
**P0910 DETERMINATION OF INTRACYSTIC GLUCOSE CONCENTRATIONS IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC CYSTS: A PROSPECTIVE STUDY**

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**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 EUS-FNA for pancreatic cyst aspiration. Informed consent was obtained from all patients. A total of 53 cysts were sampled, and 32 cysts for cytology and 21 cysts for histology. Diagnostic criteria were: (i) Mean glucose concentrations in mucinous cysts were significantly lower than in non-mucinous cysts (p < 0.0001). The diagnosis of mucinous cysts was based on the presence of cells with intracytoplasmic mucin and reduction in the presence of normal pancreatic acinar cells. (ii) A correlation was found between intracystic glucose concentrations and the diagnosis of mucinous cysts. In conclusion, intracystic fluid glucose is a promising marker for the differential diagnosis of pancreatic cysts.

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

**P0911 ANTIBIOTIC PROPHYLAXIS AFTER PANCREATIC CYST PUNCTURE – LESS IS MORE? ONE-TIME VERSUS EXTENDED CIPROFLOXACIN PROTOCOL**

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**Introduction:** EUS-FNA is a standard practice due to the possible risk of pancreatic infection. The aim of this study was to compare a one-dose prophylaxis (PCL) with two protocols: group 1: Ciprofloxacin 200 mg iv, one-dose, immediately before EUS-FNA; and group 2: Ciprofloxacin 200 mg iv, one-dose, immediately before EUS-FNA plus three days of oral Ciprofloxacin 500 mg, bid. Results: There was no statistical difference between the two protocol groups regarding the morbidity rate (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.

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

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**Results:** In our series, 16/22 females (75%), mean age = 58 ± 13 years old (29–77). Mean follow-up, 2 years, from 60 to 34months (6–116). Cyst location: head/body/tail: 11/8/3. Mean size in 1st EUS-FNA: 3 ± 1 cm, 1 (1–2 cm) vs 2nd EUS-FNA: 3, 1 ± 1 cm, 9 (1–2.1 cm); with both EUS-FNAs with 36% cysts > 3 cm. Mass/mural nodule present:7/22 vs 8/22 on 2nd EUS-FNA. Repetition of EUS-FNA did not lead to change or increase in 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 the 1st and the 2nd EUS-FNA, not statistically 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 papillary mucinous neoplasm, mucinous cystic neoplasm, solid pseudopapillary neoplasm and a neuroendocrine tumour. Comparing the group of patients who had surgical interventions with patients in one cystic group, there was a statistical difference in cystic 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 procedures was significantly shorter in the surgical patients group. In the 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 EUS-FNA for pancreatic cyst aspiration. Informed consent was obtained from all patients. A total of 53 cysts were sampled, and 32 cysts for cytology and 21 cysts for histology. Diagnostic criteria were: (i) Mean glucose concentrations in mucinous cysts were significantly lower than in non-mucinous cysts (p < 0.0001). The diagnosis of mucinous cysts was based on the presence of cells with intracytoplasmic mucin and reduction in the presence of normal pancreatic acinar cells. (ii) A correlation was found between intracystic glucose concentrations and the diagnosis of mucinous cysts. In conclusion, intracystic fluid glucose is a promising marker for the differential diagnosis of pancreatic cysts.

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

**Results:** Significant material rate of cytological evaluation was 96.6% in all enrolled specimens (282/292). 10 insufficient materials were obtained from PC in 2 cases, 4 in 2nd EUS-FNA and 2 in PNET. In seven of the 10 cases with insufficient materials, sampling error occurred because sufficient material was not confirmed using rapid onsite evaluation. Accuracy of cytology, histology, and combination of cytology and histology were 84.4%, 72.9%, and 90.0%, respectively. In the study of patients with malignant diseases, the sufficient material rate of cytology and histology and were 99.1%(223/225) and 89.3%(201/225). Positive predictive values of cytology and histology are 81.7%(184/225) and 67.6%(152/225). 65.8%(48/73) of pathologically non-diagnosed cases could be diagnosed by endoscopic ultrasound (EUS) and histology. In 26 specimens, when cytology and histology were not available, in 23 of the 26 specimens (88.5%) and ICC was available in all specimens. In the three specimens, ICC was not available owing to pathological insufficiency. In conclusion, for pancreatic cysts obtained by EUS-FNA may be useful for reducing insufficient material rate and conducting ICC as well as in samples in other medical fields.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
prophylaxis is mandatory during EUS-FNA of PCLs, since it does not seem to have a protective effect. Moreover, the risk 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.

References:

Introduction: The current classifications of non-metastatic GIST are based on post-operative pathologic criteria and are used to help in the decision of postoperative recurrence and determine 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 remain the mainstay 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. A prospectively maintained database was retrospectively reviewed to identify consecutive patients with surgically resected subepithelial lesions who received a diagnosis of GIST at a previous EUS-FNB with a 19 or 22 gauge core-needle (EchoTip® ProCore™, Cook Medical). Size from EUS examination and mitotic/proliferative indexes obtained from EUS-FNB samples were compared with surgical specimens.

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%) samples versus all cases (as expected) in resected specimens. In our series Ki67/MIB1 were generally underestimated. 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 50 per 50 high-power fields (5-50 HPFs). The size of the surgical specimens exceeded (>5 tumor EUS-size in 11 out 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 responsible for these results is the uneven distribution of the mitotic figures throughout the lesion, which can bias 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 (such as 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.

Introduction: Pancreatic cancer (PC) remains a disease with overall poor prognostic indexes and rarely allows for a reliable mitotic count. The main reason responsible for these results is the uneven distribution of the mitotic figures throughout the lesion, which can bias 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 (such as 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.
Conventional EUS-guided fiducial placement requires back-loading each fiducial through the tip of the 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 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.

All other authors have declared no conflicts of interest.

P0917 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDOSCOPY


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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 “scarce in” or “abundant in” bubbles. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as “scarce in” or “abundant in” bubbles. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as “scarce in” or “abundant in” bubbles.

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Conclusion: A GLCM detector strategy has high diagnostic performances to categorize “scarce 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 G1 solutions

All other authors have declared no conflicts of interest.

P0918 AGE AND GASTRIC EMPTYING TIME ARE PREDICTIVE FACTORS FOR INCOMPLETE CAPSULE ENDOSCOPY: RESULTS OF A MULTIVARIATE ANALYSIS IN A LARGE STUDY POPULATION

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Introduction: Capsule endoscopy has been demonstrated to be a first-line tool for small bowel visualization. However, it has some limitations such as incomplete examinations - i.e: the capsule does not reach the cecum - leading to missing lesions.

Aims & Methods: To evaluate those factors that can predict incomplete examinations, to identify those patients at risk for incomplete procedures and to define those approaches that may improve the efficiency of the examination reducing the time of the diagnostic process as well as the need to repeat procedures. A total of 1918 patients who underwent capsule enteroscopy at our center between 2008 and 2015 were retrospectively analyzed. We evaluated variables such as age, sex, anthropometric parameters, comorbidity, drugs, outpatient care, analytical parameters, indication of the test and transit times. Initially, a univariate analysis and then, a multivariate analysis using a logistic regression model were carried out.

Results: In the univariate analysis, the following variables showed a statistically significant association with the rate of incomplete examinations: age, gender, indication of procedure, outpatient care, history of abdominal surgery, heart disease, capsule ingestion posture, hemoglobin levels, renal failure and both gastric and small bowel transit times. These variables were included in the multivariate analysis were age > 65 years (OR = 1.99, 95% CI: 1.34–2.95), gastric transit time > 41 minutes (OR = 2.60, 95% CI: 1.72–3.93) and small bowel transit time > than 286 minutes (OR = 3.52 95% CI: 2.26–5.48) showed a statistically significant association with the risk of incomplete examination.

Conclusion: Incomplete capsule endoscopy is predictable. Patients older than 65 years and/or a gastric emptying greater than 42 minutes are independent predictive factors for incomplete procedures. In these clinical scenarios, pharmacological preventive measures or endoscopic introduction should be taken into account to avoid incomplete examinations.

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

P0919 A NOVEL CAPSULE TECHNOLOGY PLATFORM FOR SPECIFIC LOCALIZED COLON DRUG DELIVERY

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3Dorot Medical Center, Bnei Sheva/Israel

Abstract: P0917

<table>
<thead>
<tr>
<th>Development step</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Negative predictive value (%)</th>
<th>Positive predictive value (%)</th>
<th>Area under Receiver operating characteristic curve</th>
<th>Calculation time (s) by frame (mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm 1: GLCM</td>
<td>94.38</td>
<td>93.58</td>
<td>95.32</td>
<td>92.31</td>
<td>0.9852</td>
<td>0.0040 ± 0.003</td>
</tr>
<tr>
<td>Algorithm 2: Fractal dimension</td>
<td>84.27</td>
<td>82.57</td>
<td>86.54</td>
<td>79.78</td>
<td>0.9269</td>
<td>10.1 ± 0.7</td>
</tr>
<tr>
<td>Algorithm 3: Hough transform</td>
<td>85.39</td>
<td>81.65</td>
<td>87.25</td>
<td>79.17</td>
<td>0.9252</td>
<td>1.45 ± 1.2</td>
</tr>
<tr>
<td>Algorithm 4: SURF</td>
<td>94.38</td>
<td>97.24</td>
<td>95.45</td>
<td>96.55</td>
<td>0.9897</td>
<td>11.47 ± 7.1</td>
</tr>
</tbody>
</table>

Development step

Algorithm 1: GLCM 94.38 93.58 95.32 92.31 0.9852 0.0040 ± 0.003
Algorithm 2: Fractal dimension 84.27 82.57 86.54 79.78 0.9269 10.1 ± 0.7
Algorithm 3: Hough transform 85.39 81.65 87.25 79.17 0.9252 1.45 ± 1.2
Algorithm 4: SURF 94.38 97.24 95.45 96.55 0.9897 11.47 ± 7.1
PROCEDURE ACCURACY?
P0920 COLON CAPSULE ENDOSCOPY: HOW DOES IT WORK?

All other authors have declared no conflicts of interest.

Disclosure of Interest: (no systemic delivery) therapy for IBD and cancer.

tions in the colon. A wide variety of drugs can accurately be delivered to their intended destinations and on line algorithms can determine colonic entrance and identify exact locations in the colon. 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 forms and the study was performed 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 Check-up

All other authors have declared no conflicts of interest.

P0920 COLON CAPSULE ENDOSCOPY: HOW DOES IT WORK?

Introduction: Colon Capsule Endoscopy (CCE) procedure requires a preparation regimen, which provides a clean colon, clear capsule images and promotes capsule propulsion through the entire colon. A four-point cleansing grading scale system (poor, fair, good and excellent) has been used to describe the quality of colon preparation. “Poor” and “fair” are considered inadequate cleansing, while “good” and “excellent” – adequate for polyp detection. Adequate cleansing has been associated with significantly higher diagnostic accuracy, when compared with inadequate cleansing (72% vs. 28% respectively).[1]

Aims & Methods: Evaluate the relation between CCE procedure cleansing and accuracy – with an emphasis on inadequate cleansing. This is an additional post study analysis[2], including 767 screening population participants, from 17 sites in the United States and Israel, who underwent CCE procedure followed by a blinded colonoscopy. Capsule preparation included 12 mg Senna, 4 liters split dose of sulfate-free polyethylene glycol (PEG), with 6 and 3 oz of oral sulfate solution – for capsule propulsion. The CCE video was reviewed by 1 of 5 highly experienced CCE gastroenterologists. These physicians assessed colon cleansing on a “poor” to “excellent” scale. Incomplete studies were included in the analysis. Polyps were considered a match, if the size measured by the capsule (~±30%) range overlapped the size measured by the colonoscopy (~±50%) range, and polyp location estimates by the 2 methods were in the same or adjacent segments[2].

Results: The mean age of the analyzed cohort was 57.1 (SD 5.8) with 342 males (48.6%).

Conclusion: 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

P0921 COLON CAPSULE ENDOSCOPY MAY REDUCE COLONOSCOPY MISS RATE – A MULTICENTER STUDY

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Introduction: Colonoscopy miss rate is an area of intense focus, as it directly correlates with colorectal cancer incidence rate. Previous studies reported a colonoscopy miss rate of 2%-22%, depending on polyp size and histology [1].

Colon Capsule Endoscopy (CCE) is a visualization diagnostic modality of the colon mucosa, which has demonstrated high sensitivity for polyps and adenomas [2]. Determining the nature of polyps detected by CCE but missed by the imperfect gold standard (colonoscopy), may facilitate both optimization of CCE application (potential CCE additive value) and increase colonoscopy polyp detection.

Aims & Methods: Characterize polyps detected by CCE, which were missed by colonoscopy. 695 screening population participants, from 17 sites in the United States and Israel, underwent CCE procedure followed by a blinded colonoscopy. The overall colonoscopy adenoma detection rate in this study was very high – 39% [2]. Following the blinded colonoscopy, the patient’s CCE report was assessed. Based on the findings in this report, the colonoscopy physician decided whether or not to immediately follow up with a second colonoscopy. 70 of the CCE findings were detected by the second colonoscopy. These 70 polyps were compared with 683 polyps detected by blinded colonoscopy, using logistic regression model. Adjusted Odds Ratios (Adj.OR) and corresponding Confidence Intervals (CI) were estimated.

Results: Of the 70 polyps missed by first colonoscopy and detected by second colonoscopy, 20 (29%) were 6 mm or larger (based on colonoscopy size estimation), 19 (27%) were either adenomatous or sessile serrated lesions and 16 (23%) were described as either flat or sessile-flat by colonoscopy performing physician. Stratification of polyps based on location:

<table>
<thead>
<tr>
<th>Location</th>
<th>Detected by blinded colonoscopy (n = 683)</th>
<th>Detected after CCE and unblinding (n = 70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CECUM</td>
<td>64 (84%)</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>ASCENDING</td>
<td>181 (94%)</td>
<td>11 (16%)</td>
</tr>
<tr>
<td>TRANSVERSE</td>
<td>98 (96%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>DESCENDING-SIGMA</td>
<td>243 (90%)</td>
<td>26 (10%)</td>
</tr>
<tr>
<td>RETUM</td>
<td>97 (85%)</td>
<td>17 (15%)</td>
</tr>
</tbody>
</table>

Abstract: P0920

Colon cleansing Sensitivity (≥6 mm); n = 272 Specificity (≥6 mm); n = 495

| Adequate cleansing | 153/195 = 78.5% (72.2%–83.7%) | 308/350 = 88.0% (84.2%–91.0%) |
|                   | 54/77 = 70.1% (59.1%–79.2%)  | 130/145 = 89.7% (83.5%–93.7%)  |

P-value 0.147

| Poor cleansing    | 3/9 = 33.3% (11.7%–64.9%) | 15/16 = 93.8% (69.7%–100%) |

Fair, good and excellent cleansing

| Sensitivity       | 204/263 = 77.6% (72.1%–82.2%) | 423/479 = 88.3% (85.1%–90.9%) |

P-value 0.007

| P-value           | 0.007 |

Poor cases had significantly lower CCE sensitivity compared with fair, good and excellent cases, for 6 mm polyps (P-value = 0.007). When stratifying cases based on the current adequacy cutoff, sensitivity for 6mm polyps is similar in inadequate (“poor” + “fair”) cases compared to adequate (“good” + “excellent”) cases (70.1%, 78.5% respectively; P-value = 0.147).

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Introduction: A many variety 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.
Multivariate logistic regression revealed that after adjusting to polyph's size, cecal and rectal segments were associated with increased chance of CCE additive value to colonooscopy (cecum vs. ascending or transverse colon: Adj.OR = 3.2 [95%CI: 1.3–7.6] and Adj.OR = 4.5 [95%CI: 1.4–14.6] respectively; rectum vs. ascending or transverse colon: Adj.OR = 2.6 [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 colonooscopy event.

Conclusion: CCE has the ability to detect polyps missed by traditional colonooscopy, especially lesions in the cecum and rectum.

Disclosure of Interest: S. Perek; Employee of Medtronic
N. Schwartz; Employee of Medtronic

References

P0922 ENDOCARE NATION OF POSTOPERATIVE PANCREATIC FISTULAS AFTER DISTAL PANCREATECTOMY OR ENUCLINATION

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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. Only patients whose ERCP was classified according to the definition of the International Study Group of Pancreatic Fistula Working Group. The indications, the techniques and results of endoscopic drainage and the patients’ outcomes were registered.

Results: Among 6473 ERCP performed during the inclusion period, 31 patients had POPF treated endoscopically (14 men, 7 women, mean age 55±12 years). Surgeries at the origin of the fistula were: distal pancreatectomy with spleen resection (n=19), spleen preserving distal pancreatectomy (n=3), central pancreatectomy (n=21), enucleation (n=4), partial pancreatectomy (n=1); left nephrectomy (n=2), for the following indications: IPMN (n=7), pancreatic adenocarcinoma (n=5), neuroendocrine tumors (n=4), inflammation (n=3), adenocarcinoma (n=6), metastasis (n=2), phaeochromocytoma (n=1), cystadenomatus (n=2), spleen artery aneurysm (n=1). The mean time between surgery and first ERCP (±SD, range) was 70 days (±145, [6-806]). POPF was grade B in 19 patients and grade C in 12 patients.

The indications for endoscopic drainage and the patients’ outcomes were registered.

Conclusions: 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. The present study was designed to determine feasibility and safety of stent placement using a thin delivery-system stent without dilation step during ERCP. Three of the new designed partially covered laser-cut metal stents (6-mm-wide and 60-mm-long) with 7Fr delivery catheter with hard tip (7Fr hard tip) and 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 (cholledochoduodenostomy) 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 were analyzed for two weeks after EUS-BD. The use of three types of stents was clinically 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 ERCP. Three of the new designed partially covered laser-cut metal stents (6-mm-wide and 60-mm-long) with 7Fr delivery catheter with hard tip (7Fr hard tip) and 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 (cholledochoduodenostomy) 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 were analyzed for two weeks after EUS-BD. The use of three types of stents was clinically related to adverse events.

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 7.6mm (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. Distal stent placement was successful in 25% (1/4), 0% (0/2) and 100% (4/4) for the 7Fr hard tip, 7Fr hard tip and 7Fr soft tip respectively. Even in the cases requiring dilation, stent placement was successful immediately after dilation only with a thin catheter (3.5Fr). Neither 5Fr cholecystectomy nor balloon dilation was needed. There were no procedure-related complications occurring during and 2 week after EUS-BD. All stents remained in place without migration. At necropsy, fistulas were created between the bile duct and duodenum 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 ERCP in the phantom and animal models. The bio-absorbable system stent may be technically feasible and safety for EUS-BD and possibly reduce adverse events.

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

References

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

Introduction: Post-endoscopic sphincterotomy bleeding is treated endoscopically with pharmacologic injection, electro surgical coagulation, balloon tamponade or clipping, but severe cases may require angiographic or surgical approach. An alternative long-acting tamponade treatment with fully-covered metal stents (FCMS) has been advocated.

Aims & Methods: We report here on the use of FCMS in post-sphincterotomy early and late bleeding. Patients referred for in- and out-patient ERCP were informed of the potential off-label treatment with FCMS of post-sphincterotomy bleeding, and of treatment approval by the local ethical committee. We treated post-sphincterotomy bleeding first with adrenaline and/or sclerosing agent injection. When this first line hemostasis failed, we placed short FCMS in the distal cholecodochus. Endoscopy was rescheduled after 1 month to remove the FCMS. During the early post-procedural period the patients were treated with blood transfusions if needed, and amiplaedet drugs as well as oral anticoagulants were avoided.

Results: 17 Patients (10M/7F), aged on an average 70 years (range 38–90) received 18 FCMS (10 mm x 40 mm, Boston Scientific) for failed hemostasis since USA was 100%. 4 patients had pain (symptomatic) and rest 9 were asymptomatic. 15/20 underwent interventional procedures before achieving satisfactory stricture resolution. In recent years, standard of practice of endoscopic retrograde cholangiopancreatography (EUS-BD) or double pigtail plastic stent. All these patients underwent MRCP after EUS guided drainage of PFC. Patients of acute or chronic pancreatitis with DPDS were included in the study. The FCMS spontaneously migrated in 3 of 18 cases, one had been removed for incomplete bleeding control and substituted after 3 days, and 13 were easily removed as per protocol. In two cases FCMS were removed and a plastic double pigtail stent was put in place, for persistent choledochal distal stenosis.

Conclusion: These cases represent a large collection of evidence showing that treating post-sphincterotomy early bleeding with FCMS is feasible, safe and effective. Late bleeding associated with needle-knife pre-cut was much harder to control and required endoscopic revision, intensive care unit support and re-stenting. Our results are consistent with and support previous research in the field.

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

References

Efficacy of Self-Expandable Metallic Stent Placement in the Management of Anastomotic Stricture after Orthotopic Liver Transplantation

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Introduction: Anastomotic bile duct stricture (ABS) remains as one of the most common complications after orthotopic liver transplantation (OLT). Current standard of practice of endoscopic retrograde cholangiopancreatography (ERCP) with insertion of multiple plastic stents (PS) often requires multiple procedures before achieving satisfactory stricture resolution. In recent years, studies utilizing covered self-expandable metallic stent (cSEMS) in refractory ABS management reported varying degree of success.

Aims & Methods: The aim of this study was to analyze efficacy of SEMS in resolution of anastomotic stricture in patients with orthotopic liver transplantation (OLT). In addition, we sought to identify factors influencing the likelihood of stricture resolution, the rate of adverse outcome(s) A retrospective cohort study was conducted using a registry of consecutive patients who underwent ERCP with biliary SEMS placement from January of 2010 to November of 2016 for the management of refractory ABS. Demographic variables including age, gender, and clinical variables including body mass index (BMI), number or prior ERCP with PS insertion, stent brand and dimensions and duration of SEMS insertion period were collected. The rates of stricture resolution, adverse outcomes including post ERCP pancreatitis, cholangitis and stent dysfunctions (occlusion, migration, shorting) were assessed. The study was approved by the Institutional Review Board of the Cleveland Clinic.

Results: There were 47 OLT patients who underwent ERCP-cSEMS insertion for refractory ABS during the study period. Of 47 patients, 37 patients (78.8%) achieved stricture resolution after single SEMS treatment. Longer duration of SEMS insertion was the only variable associated with increasing probability of stricture resolution as there was 20% increase in odds of stricture resolution for every additional week SEMS was in place. Among those who achieved initial stricture resolution, 27 patients (57%) had maintained bile duct patency throughout the follow up period. The most common adverse outcome was internal migration of cSEMS which occurred in 11 patients (23.4%). Post-ERCP pancreatitis was observed in 3 (6.4%) patients

Conclusion: The efficacy rate observed in resolving refractory ABS with cSEMS placement appears to be comparable to that of multiple ERCPs with PS placement method. Furthermore, durability of ABS resolution with cSEMS use further supports its potential long-term efficacy. Hence, cSEMS should be considered as a viable alternative to ERCP. The follow up period is associated with higher likelihood of ABS resolution. The high rate of internal migration observed with SEMS warrants further endeavor in stent design improvements.

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

References
Conclusion: Disconnected Pancreatic Duct is observed in 60% patients following EUS-guided drainage of PDSP. However, only a small proportion (<10%) of PDSP had symptomatic recurrent fluid collection.

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: 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: 66 years; age range: 54–80 years). ERCP procedures were performed with carbon dioxide insufflation. Five patients underwent ERCP for biliary surgery and sphencterotomy, and one patient underwent ERCP for biliary surgery. All patients were initially treated with fully covered self-expandable metallic stent (FCSEMS) and 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: The aim of this study is to clarify the factors that reduce clinical success rate of stent placement. This study was conducted by a retrospective chart review at a single center. The endoscopy database and clinical records from the University of Tokyo Hospital, Tokyo, Japan, were reviewed retrospectively between May 2007 and February 2017. Patient’s symptoms, characteristics, clinical data were obtained from electronic medical record. The obstructions were diagnosed clinically and radiologically and were evaluated by the Colorectal Endoscopy Scoring System (CROSS). Technical success was defined as deployment of a stent across the entire length of the stricture on the first attempt. Clinical success was defined as resolution of symptoms and radiological relief of the obstruction within 24 hours, as confirmed by radiographic observations.

Results: A total of 172 patients (91 males, 81 females; mean age 66.9 years; range 21–93 years) with malignant large bowel obstruction (LBO) were included. The mean GOOSS before DS and after DS were 0.5 and 2.6 respectively (p < 0.001). The median time to restart soft solid meal after DS was 2.9 days. Biliary obstruction was seen in 13 patients and managed with endoscopic biliary stent. Adverse events occurred in 6 patients, including 1 with choanalithiasis, 1 with bleeding and 3 with stent occlusion. The reintervention technical and clinical success rates were 100% (5/5) and 80% (4/5), respectively. The median survival time after DS was 159 days. In neoadjuvant chemoradiotherapy patients, 4 patients were planned surgical for APC.

Conclusion: DS in patients with APC was effective and safe. The findings of this study suggest that DS is worth considering as the bridge to surgery in patients receiving neoadjuvant therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.
Complete partial response of MMC for RES patients: 59.5%/40.5%, respectively.

Aims & Methods: The aim of this study was to evaluate the clinical efficacy of MMC injection therapy in patients who had refractory benign esophageal stenosis. Between October 2013 and February 2016, 46 consecutive patients with refractory benign esophageal stenosis who did not respond even after five or more endoscopic dilation therapy. The patients should be more than eighteen year old. Exclusion criteria: Malignant esophageal stenosis, Pregnant or breast feeding women, Deteriorated patients who could not tolerate endoscopic procedure. The method of MMC application -Via 23 gauge injection needle (Optimos injector, Taewoong Medical, Korea) -4 mL of saline-diluted MMC was prepared, with concentration of 0.5 mg/mL. -Injection of 0.5 mL MMC at eight points of the stenotic site immediately after bougination. Follow-up -Interview After 1 week and every four weeks after MMC injection upto 52 weeks. Endoscopy Four weeks after MMC injection and while the obstructive symptoms appeared. Primary end-point -The rate of clinical success. Secondary end-points The mean score of GOOSS before and after MMC injection therapy, Complication -Definition - Clinical success: Improvement of GOOSS score more than one point after MMC injection therapy, compared before MMC injection

Results: Ten patients with refractory benign esophageal stenosis were initially enrolled. Two patients were excluded due to death from hypovolemic shock due to persistent bleeding and esophagectomy as patient’s wish. Finally, Eight patients were analyzed. The rate of clinical success of MMC injection therapy in patients with refractory benign esophageal stenosis was 87.5%. Mean scores of GOOSS were significantly reduced after MMC injection therapy, from 2.5 to 0.29. In all patients, MMC injection therapy below two sessions was needed to improve the symptoms of enrolled patients. Major complications did not occur in any patients.

Table 1: Outcomes of MMC injection therapy

<table>
<thead>
<tr>
<th>Variables</th>
<th>values</th>
</tr>
</thead>
<tbody>
<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>5/1/0/1/1</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, mm</td>
<td>5.2</td>
</tr>
<tr>
<td>Mean diameter of stenosis 3 month after final MMC injection, mm</td>
<td>8.9</td>
</tr>
<tr>
<td>Clinical success rate (%)</td>
<td>87.5</td>
</tr>
<tr>
<td>Complications (N, %) perforation bleeding requiring transfusion of other interventions others</td>
<td>(0/0) (0.0) (0/0)</td>
</tr>
</tbody>
</table>

Conclusion: In our study, the mitomycin injection therapy was effective in patients who had refractable benign esophageal stenosis. The mitomycin injection therapy could be considered as an alternative for refractable benign esophageal stenosis. A large-scale prospective studies are required in future.

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

References

P0932 TREATMENT WITH MULTIPLE REASSORBABLE STENTS OF COMPLETE AND PARTIAL LOWER GI ANASTOMOSIS DEHISCENCE AND STENOSIS

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Introduction: Anastomotic stenosis or dehiscence are serious complications of colorectal surgery. Colostomy or ileostomy and later redo anastomosis or Hartmann’s procedure are the mainstay of therapy, but edema and inflammation around the primary anastomosis or later adhesions can prevent or delay a further attempt at endoscopic management, and therefore alternative salvage repair methods may be required. Reabsorbable polydioxanone stents are a proposed method but with still debatable results in terms of correct placement, clinical success, early and late stenosis, stent migration, perforation, bleeding, fecal incontinence and local pain.

Aims & Methods: We report here on the use of reabsorbable polydioxanone stents (RPS) in colorectal anastomotic stenosis or dehiscence. We treated with RPS placement, endoscopic dilation and daily mesalazine enemas and/or suppositories. 5 complex cases since 2015. Endoscopy was repeated 1 month after and then every two months or earlier if needed. Endoscopic dilation and progressive apposition of partially overlapping stents were repeated until a stable lumen was observed. During follow-up the patients were treated with local mesalazine, stent migration, perforation, bleeding, fecal incontinence and local pain.

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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

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Introduction: The prevalence of post-ESD esophageal stricture 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 ± 11, 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%), epithoid carcino ma (n = 21, 30.9%) and other (n = 1). Patients with severe esophageal narrowing, esophagitis, radiationinduced esophageal strictures, esophageal diverticula, motor disorders were excluded. Clinical, morphological and technical features were collected and analysed to determine the factors associated with a positive outcome, defined as the absence of dysphagia during at least twelve months following last dilation. The need of surgery, gastrostomy or prosthesis was considered as a negative.

Results: Resected lesions (95.6% en-bloc) presented a median size of 52.5 mm (range: 22–110) and achieved ≥75% of the circumference in 50% of cases due to post-ESD fibrosis (p = 0.435). They were mostly located in inferior esophagus (70.6%, p = 0.231) and required two endoscopic sessions in 8 patients (11.8%). Oral and injected corticoids were used in 11 (16.2%) and 12 (17.6%) cases, with no effect in outcome (p = 0.181, 0.282). No specific factor could be associated to a better outcome (median follow-up: 23 months): early dilation (≤15days after ESD), number of dilations (p = 0.345), short (≤2cm) stenosis (p = 0.319), balloon diameter (p = 0.475) and Barrett’s vs. squamous cell carcinoma (p = 0.458). The overall positive outcome rate was 92.6% after a median of 3 (range: 1–27) dilations and 5 months of treatment (1 dilation/6weeks). A prosthesis was placed in 4 patients with clinical improvement in two of them. There were 3 complications (4.4%, all perforations).

Conclusion: Most of patients presenting with post-ESD strictures and dysphagia improve at long-term but they need a median of 3 sessions. No specific factor was associated to a better outcome. Disclosure of Interest: All authors have declared no conflicts of interest.
P0934 EFFECTIVENESS OF REPEATED DILATIONS IN THE MANAGEMENT OF ESOPHAGEAL BENIGN STRICATURES

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Introduction: Refractory or recurrent esophageal benign strictures (REBS) are frequent, and defined as the impossibility to reach or maintain a diameter of 14 mm after 5 sessions of endoscopic dilation (ED). Because of a lack of guidelines, their management remains challenging, especially leading to surgical procedures.

Aims & Methods: The aim of this study was to define the efficacy of long-term and repeated ED in the management of REBS. This was a monocentric retrospective study involving patients managed in our tertiary center between January 2002 and April 2017 for REBS. All the endoscopic dilations were performed using Savary bougies or hydraulic balloons, depending on the operator's choice. Demographical and clinical data were recorded for each patient. The endoscopic management was detailed with the number of procedures, the endoscopic device used, the diameter of dilation, and potential concomitant treatment (as self-expanding metal stent, steroid injection or incision therapy). The primary endpoint was the efficacy of sustained and recurrent ED, defined as the absence of further dilation within 3 months of the last procedure or an interval between the 2 last ED greater than 3 months. A failure was considered in case of death, need for surgery, permanent enteral feeding tube or an interval between the last 2 procedures lower than 3 months. The secondary endpoints were to document the characteristics of dilation procedures and concomitant treatments, the decreasing of the number of dilations per trimester, and to elucidate potential predictive factors for success of ED.

Results: A total of 39 patients (23 men) with a mean age of 47.5 ± 20.7 years were included. The etiologies of strictures were anastomotic (46.1%), caustic (28.2%), peptic (10.3%) or other etiologies (radiation injuries, esophageal diverticulitis, severe viral esophagitis, 15.4%). A clinical success of repeated ED was achieved in 27 patients (69.2%). Twelve patients (30.8%) experienced failure, among them seven (17.9%) required frequent dilatations, two (5.1%) underwent surgery, two (5.1%) maintained an enteral feeding tube, and one patient (2.6%) died consecutively to inhalation pneumonia. A mean of 9.8 ± 4 ED sessions were performed per patient, with a mean treatment duration of 22.6 ± 20.1 months. Regarding concomitant treatments, 16 patients (41%) had at least one fully covered metallic stent placement, incisional therapy was performed in 11 patients (28.2%), and 3 patients (7.7%) received corticosteroid injections. The number of dilations per trimester gradually decreased over time. No significant predictive factor of success was found, such as etiology of stricture or the use of concomitant treatment, particularly. Nevertheless, an greater number of dilations during the first trimester could promote the success of the management (3.2 ± 2.2 dilations in the success group vs 2.2 ± 0.8 in failure group, p = 0.056).

Conclusion: Repeated and maintained endoscopic dilations are effective (70%) in the management of REBS, regardless of the etiology of stricture. A prolonged management up to 2 years, and the initial rhythm of endoscopic procedures may favor the final success. A systematic schedule for ED would improve the efficacy of this management.

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

P0935 EFFICACY AND SAFETY OF NEWLY DEVELOPED ENDOSCOPIC COLONIC STENTS WITH AN INCREASED EXPANDABLE FORCE: A RETROSPECTIVE COMPARISON WITH CONVENTIONAL COLONIC STENTS

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Introduction: Endoscopic stenting with self-expandable metallic stents (SEMSs) is a widely accepted procedure for treating malignant colonic obstruction. This procedure was covered by the National Health Insurance in Japan in January 2012, and the WallFlex colonic stent and Niti-S colonic stent can currently be used in Japan. In the previous study, we reported that the WallFlex colonic stent has more expanded force than the Niti-S colonic stent. On the other hand, the risk of stent-related perforation was lower when using the Niti-S stent due to its structure. Currently, we newly developed an SEMS (Niti-S structure, with 18-mm diameter with increased expanded force compared with the conventional type), which comprised the benefits of both WallFlex and Niti-S. In this study, we compared the efficacy and safety of the newly developed colonic stent with the conventional colonic stents.

Aims & Methods: This study aimed to compare the efficacy and safety of the newly developed colonic stent with the conventional colonic stents (the WallFlex colonic stent and the Niti-S colonic stent). Overall, 91 patients (96 lesions, male/female: 48/43, average age: 73.2 years) underwent endoscopic SEMS placement between November 2011 and March 2017 at Kure Medical Center and Chugoku Cancer Center. The WallFlex colonic stent was used in 36 patients (38 lesions: Group W), the Niti-S colonic stent in 51 patients (53 lesions: Group N), and the newly developed colonic stent in 5 patients (5 lesions: Group D). Stratified analysis of the clinical backgrounds, technical success rate, procedure time, clinical success rate, and complications was performed to compare Group W, Group N, and Group D.

Results: Endoscopic SEMS placement was attempted in 96 lesions as a bridge to surgery (BTS) in 52 lesions (54.2%) and as palliative therapy (PAL) in 44 lesions (46%). In Group W, SEMS was placed in 19 lesions (50%) as BTS and in 19 lesions (50%) as PAL; in Group N, SEMS was placed in 32 lesions (60%) as BTS and in 21 lesions (40%) as PAL; and in Group D, SEMS was placed in 1 lesion (20%) as BTS and in 4 lesions (80%) as PAL. The technical success rate was 100% in all groups. The overall clinical success rate was 93.7% (90/96): 89.5% (46/51) in Group W, 96.2% (51/53) in Group N, and 100% (5/5) in Group D. Complications within 7 days included abdominal pain (3/38, 8%), poor...
Conclusion: The technical and clinical success rates were extremely high in all groups. Primary and secondary peroperative perforation were also low. The mean length of the muscular layer incision was 14.3 ± 1.6 cm on the esophageal side and 2.8 ± 1.0 cm on the gastric side. The mean duration surgery was 191 ± 56.9 minutes. All patients recovered from the contralateral site of the previous myotomy. Moreover, POEM enables making a long myotomy that cannot be made in laparotomy. At our hospital, we have performed POEM on 12 cases that previously underwent the Heller-Dor operation. Herein, we report the outcome of the cases. Aims & Methods: We performed POEM on 210 cases between September 2011 and April 2017. Of those cases, 12 cases (5.7%) had previously undergone Heller-Dor operation. The preoperative and postoperative lymphocyte count was the only predictor of the preoperative and postoperative lymphocyte count. Similarly, in a model that also included the interval between the end of neoadjuvant therapy and the endogastric stapled esophagectomy, the number of surgical accesses (laparotomy, thoracotomy and cervicotomy) and the number of nodal metastasis, only the final dose of radiotherapy resulted to be an independent predictor of preoperative lymphocyte count. POEM: Patients with esophageal and esophago-gastric junction cancer present a significant post operative 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.
Disclosure of Interest: All authors have declared no conflicts of interest.

References
CS group, 16 patients had unresectable disease (due to lack of remnant liver volume in the left liver, or to three hepatic veins and 9 initially had unsuitable disease (progressive primary disease or suspicion of other distant metastasis); therefore, upfront chemotherapy was selected.

**Results:** The frequency of adverse prognostic factors tended to be higher in the CS group than in the S group (p=0.037 and 0.047, respectively). There were no significant differences in clinical features and operative outcomes between the two groups (p=0.523 and 0.590, respectively). Patient with infected bile duct cancer (R1 resection) in the CS group died from post-operative septic shock (mortality rate 5.3%).

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

**References**


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**Introduction:** Pancreatoduodenectomy (PD) is one of the operations associated with high rate of surgical site infection (SSI). The one of the reasons is that SSI is associated with the preoperative biliary infection caused by preoperative examinations or drainage of biliary tract. In our clinical trial [1], SSI after pancreateoduodenectomy could be decreased by using the perioperative selective antibiotics based on preoperative bile culture. The bacteria cultured from SSI were Enterobacteriaceae such as Enterococcus and Enterobacter species with high frequency.

**Aims & Methods:** Sixty-nine patients underwent PD at Hokkaido University Hospital (Japan) between April 2015 and March 2016, when prospective surgical site infection surveillance was performed. Thirty-eight patients were administered CMZ as perioperative prophylactic antibiotics from April 2015 to March 2016, and 31 were PIPC/TAZ + VCM from April 2016 to March 2017. CMZ was injected intravenously every three hours from the start of operation, and once after the operation. PIPC/TAZ was injected intravenously every three hours from the start of operation and three times on the next day of the operation. VCM was injected intravenously in the morning of operation (20 mg/kg) and just after the operation (15 mg/kg).

**Results:**

- There were no significant differences in clinical features and operative outcomes between the two groups. The patients with PIPC/TAZ + VCM received slightly shorter duration of postoperative antibiotics administration than the patients with CMZ (5.9 ± 8.5 vs. 13.0 ± 18.2 days; p = 0.048).
- Significantly lower incidence of SSI was revealed in patients with PIPC/TAZ + VCM (9/31(29.0%) vs. CMZ (12/38(31.6%); p = 0.004).
- The redneck syndrome as one of the side effects of VCM was observed in 5/31(16.1%) patients and the bacteria were identified as Enterococcus and Enterobacter species.

**Conclusion:** The broad-spectrum perioperative antibiotics covering Enterobacteriaceae such as Enterococcus and Enterobacter species could decrease the incidence of SSI and duration of postoperative antibiotics administration compared to CMZ. More strict indication to select the patients who should be administered VCM, because the occurrence of side effects of VCM was relatively high.

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

**Reference**


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

**References**


INFECTIONS AFTER GASTROENTEROLOGIC SURGERY: A INCIDENCE OF SUPERFICIAL INCISIONAL SURGICAL SITE INFECTIONS AFTER GASTROENTEROLOGIC SURGERY: A PROBABILITY SCORE MATCHING RETROSPECTIVE STUDY

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Introduction: Surgical site infections (SSIs) after gastrointestinal surgery cause significant morbidity, prolong hospitalisation and increase health care costs. Thus, SSI prevention is critical. To prevent bacterial colonisation in suture mate-
rial, which disables local mechanisms of wound decontamination, triclosan-
coated sutures were developed. We retrospectively analysed the efficacy of tri-
closan-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 conven-
tional 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 outcomes 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 gastrointestinal 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% (140/1128) vs. 5.5% (64/114), p < 0.001], the SSI incidence for emergency surgery and 5.1% (1/136) vs. 1.0% (1/103) (p = 0.045) for hepato-biliary-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 inci-
dence between the control and study groups for lower GI [17.0% (68/398) vs. 10.3% (41/390), p = 0.008] and hepato-biliary-pancreatic [16.4% (41/256) vs. 4.3% (6/136), 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 after lower GI surgery.

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

References


P0947 COMPARISON OF POSTOPERATIVE CONDITIONS BETWEEN PROSTOMIA WITH THE DOUBLE-FLAP TECHNIQUE AND THAT WITH A CIRCULAR STAPLER IN LAPAROSCOPIC PROXIMAL GASTRECTOMY

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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 esophagogastrectomy with a circular stapler (CS) accompanied by fundoplication in LPGs. From March 2015, to avoid the postoperative complications, we have been using esophagogastrectomy 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, incidence of anastomotic stenosis was examined as surgical factors and compared between the DFT and CS groups. Second, gastroesophageal reflux finding on endoscopy, condition of the remnant stomach according to residue, gastritis, bile (RGB) classification 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 nutrient 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 LPGs with CS were performed during the period. Compared with the CS group, the DFT group had a significantly longer surgical time (272.3 ± 35.5 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 RGB classification were found, the DFT group showed a significantly lower score than the CS group (p < 0.01). Postoperative nutrition analysis showed no significant difference between the two groups.

Conclusion: Although LPG with DFT required a longer surgical time than LPG 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


P0949 INFLUENCE OF THE HYBRID METHOD OF DETOXICATION ON BLOOD CLARIFICATION EFFECTIVENESS AT PATIENTS WITH THE MULTIORGAN FAILURE SYNDROME

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Introduction: The main releaser for development of multiorgan failure syndrome (MOFS) are mediators of the inborn and the acquired immune system, which 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 decomposition of bodies of mammals. Increase of the reactivity of the developed MOFS is expressed pathological processes and to a fast decomposition of bodies of mammals. Increase of 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 active elements. The aim of this plan especially important role is got by the researches directed to development of sorbents with oxidizing activity.

Aims & Methods: Aim of study is to estimate effectiveness of the modified haemosorbert 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 haemorsorption was carried out by a reference technique, that is the use of a haemosorbing agent SKN-2K. To the second group the haemorsorption 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, the flowing mode carried out a half-hour incubation of a solution from 2 l of solution of a neutral anolyte.

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 a much larger degree. After performing detoxication therapy by the developed technique a normalization of all studied parameters is registered. The same tendency is revealed also concerning nonoxical elements. 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.

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

References


P0948 NOVEL ENDOSCOPIC REPAIR TECHNIQUE FOR GASTROINTESTINAL LEAKS AND PERFORATIONS USING NEGATIVE PRESSURE THERAPY WITH OPEN-PORE POLYURETHANE-FOAM AND FILM DRAINAGE

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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 (ENPT) 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 leaksages. 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 repaired. Endoscopic Negative Pressure Therapy (ENPT) has been developed to treat duodenal leakages. Advantage of OFD is the small diameter which allows easy endoscopic placement through small openings and naso-jejunal insertion. ENPT + OFD is a new method of treating duodenal leaks.

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 (OFD) devices were constructed out of a piece (1.5 cm x 3 cm) of open-pore polyurethane-foam which was fixed surrounding the tip of a naso-duodenal 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 (1.5 cm × 3 cm) which was fixed surrounding the naso-duodenal drainage tube. The open-end film consists of two permeable membranes with a small interspace. Fluids are drained along the interspace and through the membranes. Diameter of small-bore OFD is 4–6 mm, depending on the diameter of the drainage tube. OFD is inserted transgastrically. The foam is grouped with endoscopic forces 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 naso-duodenal tube. Due to its smaller outer diameter OFD insertion is similar to placing a naso-gastric or naso-intestinal 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 operative OFD. OPD and ENPT is an ex vivo 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 leak suture.

Results: We treated 10 patients with ENPT because of a duodenal leakage. Reason of duodenal defects were: rupture of operative suture (n = 8), iatrogenic perforation due to naso-duodenal leak. Nine patients were treated with intraluminal and 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 7–18 days. Postoperative complications were minor such as local pain, which was managed by analgesics only. Our complication rate was similar to other reports in the literature [1].

Conclusion: ENPT using small diameter tube with open-pore film was effective to treat duodenal leakages. Advantage of OFD is the small diameter which allows easy endoscopic placement through small openings and naso-jejunally. ENPT + OFD is a new method of treating duodenal leaks.

Disclosure of Interest: G. Loske: Gunnar Loske is a consultant for Lohmann & Rauscher.

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

References

P0950 CARDIAC SEPTAL DEFECT OCCLUDER DEVICE FOR ENDOSCOPIC TREATMENT OF GASTRO-CUTANEOUS AND GASTRO-PULMONARY LEAKS AFTER BARIATRIC SURGERY
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Introduction: Gastro leaks are severe complications of Bariatric Surgery (BS). Surgical re-intervention 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 Device (CSDCD), used in interventional cardiology have been described to treat post-surgical digestive fistulae in non-bariatric cases.

Methods: We aim to present the experience using CSDCD for gastric leaks following laparoscopic gastric bypass (GBP) or sleeve gastrectomy (SG). A total of 34 patients were included and treated from April 2010 to June 2015. Patients with leak secondary to GBP underwent early intervention. Patients with leak secondary to SG underwent early intervention or laparoscopically assisted and open colectomy for colon cancer. However, hernia was predominantly observed during the period of surgical technique development.

Conclusion: Further studies to standardize, evaluate the safety and benefits of CSDCD is needed.

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
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Introduction: Laparoscopic cholecystectomy is the gold-standard for the treatment of gallbladder 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 repute 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: It was revealed that SILS cholecystectomy is associated with lower severity of postoperative pain, quick recovery of daily activity and return to work, high satisfaction of surgical results and their aesthetic effect.

Conclusion: Further studies to standardize, evaluate the safety and benefits of SILS cholecystectomy are necessary.

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

References

P0952 LAPAROSCOPIC SURGERY’S 100 MOST INFLUENTIAL MANUSCRIPTS: A BIBLIOGRAPHIC ANALYSIS
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Introduction: Bibliometric analysis highlights key topics and publications, which have shaped the development of laparoscopic surgery (LS). Here the 100 most cited manuscripts in the field of LS are analyzed.

Aims & Methods: The Thomson Reuters Web of Science database was used to identify all English language full manuscripts for the study with the search term “laparoscopy” and “surgery”. The 100 most cited papers were further analyzed by topic, journal, author, year and institution.

Results: 71,524 eligible papers were returned and the median (range) citation number was 585.76 (range 1635 to 368). The two most cited papers received 1635 citations each. The first (Nelson1) compared laparoscopic and open colectomy for malignancy, and the second (Clavien2) described the classification of postoperative morbidity. Annals of Surgery published the highest number of papers (n=22) and received most citations (n=12,356). The country with the highest number of publications was the USA (n=55), and the year with the greatest number of publications was 2004 (n=13). The most ubiquitous topic was the treatment of cancer (n=35), followed by surgical technique (n=24), and comparison of laparoscopic with open surgery (n=22).

Conclusion: The most cited manuscripts highlighted laparoscopic surgical technique and compared laparoscopic with open surgery, and this review provides the most influential references in this arena, serving as a guide to an ecitable paper.

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

References
Aims & Methods: The aim of this study was 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, Mentice, 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 part of the simulation (time, economy of movement, error and total score).

Results: The group with high PC-gaming experience performed significantly better in total time (M = 25.30, p = 0.018) and economy of movement (M = 68.89, p = 0.006) and total score (M = 80.16, p = 0.036). The group with low PC-gaming experience and low visuospatial score performed worst in the simulator exercises. Concerning the learning experience and visuospatial abilities might 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

Aims & Methods: We collected all patients hospitalized for peritoneal tuberculosis from 2004 to 2015 at the Department of Surgical and Perioperative Sciences, Umeå University, Sweden. The aim of this retrospective study was to study the epidemiological, clinical, pathological, diagnostic, therapeutic and specific features of peritoneal tuberculosis in its various presentations.

Results: The total number of patients was 49. It was 15 men (31.0%) and 34 women (69.0%). 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 found frequently (91%). The digestive functional stasis that brought the patients to consult are: abdominal pain (87.7%), abdominal distension (85.7%), diarrhea (16.9%) and sub oclusive symptoms (4.6%). An abdominal mass was observed in only 4 patients (6.1%). Hepatomegaly and splenomegaly were noted in 2 cases for each. The intradural reaction was positive in only 24% of patients. The research of BK in the ascites fluid was systematically performed in all patients but returned negative in all cases. The quanteron-TB Gold was performed in 3 patients only and returned positive. The mean level of CA 125 was 253.8 ml/ml. Confirmation of diagnosis was determined on the histological analysis of peritoneal biopsy, peritoneal washings and mesenteric nodes. The main operative findings (in patients with coeloscopy or exploratory laparotomy) were: Whith variculans granulations (98%), adhesions (43.1%) and agglutinated loops (1.5%). The presence of tuberculosis 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-bacteriological 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.
TLR5-deficient and emulsifier-treated mice demonstrate that these models of gut inflammation and gut microbiota dependency on disturbance of epithelial tightness in microbiota dependency of inflammation reflects an inability to manage pathobiont bacteria, such as Adherent-Invasive *E. coli* (AIEC).

**Aims & Methods:** Our goal was to examine extent to which microbiota mismanagement and associated inflammation in TLR5-deficient and emulsifier-treated mice would manifest in a limited pathobiont-free microbiota. WT and TLR5-deficient mice were maintained in gnotobiotic isolators containing altered Schaedler flora (ASF), a community of eight bacterial species. Mice were treated with either CMC or P80, or inoculated with AIEC LF82 [4]. Feaces were assayed for bacterial loads, microbiota composition, and inflammation marker lipocalin-2. Fecal LPS and flagellin bioactivity were measured via a cell-based reporter assay, and morphologic and metabolic parameters were determined.

**Results:** Neither CMC nor P80 induced evidence of intestinal inflammation nor metabolic syndrome in WT ASF mice. Analogously, relative to similarly maintained WT mice, loss of TLR5 did not result in low-grade intestinal inflammation or metabolic syndrome under ASF conditions. Concomitantly, the ASF microbiota community was not disturbed by CMC nor P80 and, moreover, was similar between WT and TSKO mice. Inoculation with AIEC strain LF82 resulted in profound alteration of the ASF community in TSKO mice compared to WT mice with TLR5 exon 6 deletion in ASF TSKO mice, as evidenced by elevated levels of bioactive LPS and flagellin, and was associated with modest level of low-grade inflammation and increased adiposity. Therefore, in a limited-complexity pathobiont-free microbiota, loss of the flagellin receptor TLR5 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) and flagellin, but modestly promotes gut inflammation and adiposity, suggesting that the phenotype previously observed require disruption of the coman microbiota.

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

**References**

**P0958 ISOLATION AND CHARACTERIZATION OF LAMINA PROPRIA MONONUCLEAR CELLS FROM HUMAN COLONIC MUCOSA**

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**Introduction:** Lamina propria mononuclear cells (LPMCs) are immune system’s first line of defense in the intestine characterized by the ability of differentiating invading pathogens from beneficial intestinal flora and swiftly removing them. Disrupted regulation of LPMCs is implicated in pathology of a group of disorders, namely inflammatory bowel disease (IBD). Two major types of IBD are ulcerative colitis, limited to the colon and Chron’s disease affecting any segment of the gastrointestinal tract. Chron’s disease and ulcerative colitis were shown to be mediated by Th1-polarized helper (CD4+ T-cell) and Th2-activated CD4+ T-cell, respectively, while Th17-polarized cells are involved in pathogenesis of both diseases [1]. Therefore, research into biology and regulation of LPMCs is of essential importance for development of treatments for IBD symptoms.

**Aims & Methods:** The aim of this study was development of a robust method for isolation and characterization of LPMCs from human colonic mucosa, compatible with further *ex vivo* cell culturing and research. Mucosal tissue samples contained the tissue not affected by tumor, removed during tumor surgery of patients with colorectal carcinomas, and surrounding resected tissue. The tissue may be considered as healthy in terms of IBD. We have employed an isolation method consisting of disruption of epithelial cells by incubation of mucosa in a DTT and EDTA containing solution, followed by enzymatic and mechanical digestion of tissue and purification of mononuclear cells by density gradient centrifugation. Isolated cells were characterized by flow cytometry (FACS) detection of cell-type specific surface antigens and cytokological analysis. To examine the plasticity of isolated cells in terms of polarization towards IBD-associated phenotypes, the cells were seeded at conditions mediating Th1, Th2 and Th17 differentiation of CD4+ T-cells and analyzed for activation of differentiation-specific gene expression and cytokine production by qPCR and ELISA assays. Aliquots of cells were cryopreserved and further analyzed for the effect of cryopreservation on cell viability, distribution of cell-type specific surface antigens and CD4+ T-cell responses.

**Results:** Approximately 95% cell viability and 90% leukocyte (CD45+) cell purity was determined by FACS analysis of isolated LPMCs. According to cytokological analysis, CD45-negative cells may represent CD45-negative population of plasma cells; no contamination with epithelial cells was detected. Within CD45+ cell population, 26-47% T-lymphocytes, 17-24% B-lymphocytes, 8-17% macrophages and 21-46% monocytes were detected by FACS and cytokological analyses (N=3). Cytorepression did not significantly affect cell viability and surface marker distribution. Isolated cells successfully polarized towards Th1, Th2 and Th17 CD4+ T-cell phenotypes, as confirmed by IFNY gene expression and cytokine production for Th1, IL13 gene expression and IL5 cytokine production for Th2 and IL17 cytokine production for Th17 differentiated cells. Differentiation was confirmed in cryopreserved cells, with lower level of phenotype-specific cytokine production.

**Conclusion:** Method for LPMC isolation from human colonic mucosa tissue samples was successfully established with approximately 95% viability of isolated cells and 90% detectability of epithelial cell contamination. Within CD45+ cells, 26-47% of T-lymphocytes, 17-24% B-lymphocytes, 8-17% macrophages and 21-46% of monocytes were detected. Isolated cells were successfully polarized towards IBD-associated Th1, Th2 and Th17 CD4+ T-cell phenotypes, as confirmed by activation of phenotype-specific gene expression and cytokine production. Cytorepression of isolated LPMCs did not significantly affect cell viability, distribution of cell-type specific surface antigens or polarization towards Th1, Th2 and Th17 CD4+ T-cell phenotypes.

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

**Reference**

**P0959 FACTORS ASSOCIATED WITH DISABILITY IN INFLAMMATORY BOWEL DISEASE: OUTPATIENT CROSS-SECTIONAL STUDY**

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**Introduction:** The Inflammatory Bowel Disease-Disability Index (IBD-DI) has recently been validated to measure disability in IBD [2].

**Aims & Methods:** We aimed to assess disability in IBD outpatients using IBD-DI and to determine the 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 interview. Optimism and disability were evaluated using, personally or by phone, the validated Portuguese versions of 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; 59.3% females) with a mean age of 38 ±13 years were included. Most (85.3%) was in clinical remission. The mean global 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). Inhibitory cytokines and T-cell receptor expression were not associated with disability in IBD 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**
A significant increase was observed in patients undergoing treatment with corticosteroids (p-value less than 0.0008) and IgA (p-value less than 0.0001) were also higher in groups when compared to control group. The population of CD4+ cells in peripheral blood of healthy controls and patients with CD was evaluated both in biological and corticoid treatment. A significant increase in the population was observed in patients receiving corticosteroids (p-value less than 0.001) compared to healthy controls. In the population of CD4+ a significant increase was observed in patients undergoing treatment with corticosteroids in relation to patients undergoing biological treatment (p-value less than 0.0007). In CD8+ population, no statistical difference was observed between the groups. The markers CD3, CD62L and HLA-DR were also evaluated. In relation to CD38 (p-value less than 0.0022) and CD62L (p-value less than 0.0015) in subpopulation of CD4+ T-cells, a significant increase in the expression was observed in the group of patients receiving corticosteroids in relation to the group receiving biological therapy. Regarding HLA-DR, statistical difference (p-value less than 0.001) was observed between the group undergoing biological treatment and the group of healthy controls. In the subpopulation of CD8+ T-cells, a significant increase (p-value less than 0.02) was observed in the CD62L marker when compared to the group of healthy controls receiving corticoid treatment with patients in use of biological therapy.

Conclusion: We conclude that the use of biological therapy suppresses activated T cells by regulation of CD38, CD62L and HLADR expression were determined. The use of biological therapy was associated with decreased expression of CD38, CD62L and HLA-DR.

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

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2. Loveless EN, Maurice NJ, Miller HW, Slichter CK, Harrington R, Margaret S, et al. Colonic microbiome modulates experimental diabetes through regulation of the endogenous incretin system. Experimental Research, Hospital Israelita Albert Einstein, São Paulo/Brazil

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Introduction: Advancing of sequencing technologies in the first decade of the XXI century gives the opportunity to realization of large scale projects such as the 1000 human genomes project. This project provides enormous amount of the data for human population studies and different GWAS studies aimed to investigate connection of the human genetics variations with different diseases. It is especially interesting to study the connection between the human genetics, the microbiome metagenomes of mucosa and different pathological conditions. Previously revealed, the size of the summary gut microbiome metagenome is on order more than the size of a human genome. The most of works devoted to studying of the connection of the gut microbiome changes with different pathological conditions based on the investigation of fecal samples. On our opinion, in the case of ulcerative colitis it is more effective to study the mucosal microbiome of the affected regions.

Aims & Methods: The aim of our work was to study the composition of mucosal microbiomes in the colon mucosa biopsies from patients with ulcerative colitis by using the target high throughput sequencing of bacterial 16S rRNA genes. Biopsies from four caucasoid race patients with left-sided ulcerative colitis in the abating activation. Ceymo endoscopic index - 3, Rachnevech clinical index - 4 and two patients from control group with irritable bowel syndrome were collected. The DNA was extracted from mucosal biopsies and 16S rRNA genes from it's were target sequenced by using Illumina MiSeq sequencer. Sequencing reads were quality checked by the FastQC software and trimmed by using the trimmomatic software. To characterize the composition of the microbiota, trimmed reads were analyzed by the QIIME software. The obtained 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)[1] and SRA Project - SRP065002 (703 samples from patients with ulcerative colitis).

Results: More than 124 bacterial genera were found in biopsies of four 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 bacteria (p-value less than 0.005) and increasing the concentration of Bacteroidetes type bacterias (p-value less than 0.005). For the second group, it was founded decreasing of the concentration of the Actinobacteria type bacterias (p-value less than 0.05), 70-fold excess of Bacteroides vulgatus species bacterias concentration was revealed for one sample of the first group (normalized number of reads in control samples was less than 0.0003 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 (normalized number of reads in control samples was 0.0003 in samples of patients with ulcerative colitis). Although, the predominance of Proteobacteria genus bacterium was not founded. The concentration of Faecalibacterium prausnitzii species bacterias was decreased by three orders of 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 concentration increase of the conditional-pathogenic mucosal microflora (a mostly Bacteroidetes type bacteria) was discovered, which playing important role in the development of ulcerative colitis. Also, the deficiency of Faecalibacterium 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
1. Maomong Tong, Xiaoshao Li, Laura Wegener Parfrey, Bennett Roth, Andrew Ippoliti, Bo Wei, James Borneman, Dermot P. B. McGovern, Daniel N. Frank, Ellen Li, Steve Horvath, Rob Knight, and Jonathan Braun. A Modular Organization of the Human Intestinal Mucosal Microbiota and Its Association with Inflammatory Bowel Disease. J Clin Invest 2013; 121: e100702

Aims & Methods: The primary aim of this study was to investigate, in the mouse model with colitis coexisting with diabetes development, the gut microbiome composition and function which may be responsible for intestinal growth and enhancement of intestinal function. The prevalence of type 2 diabetes among IBID patients is low, even though IBID sufferers may be at a greater risk of development of T2D due to overproduction of pro-inflammatory cytokines and excessive administration of diabetogenic drugs. We hypothesize that the possible mechanism underlying this phenomenon is related to changes in the levels of incretin hormones.

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

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1. Lovelace ES, Maurice NJ, Miller HW, Slichter CK, Harrington R, Margaret S, et al. Colonic microbiome modulates experimental diabetes through regulation of the endogenous incretin system. Experimental Research, Hospital Israelita Albert Einstein, São Paulo/Brazil

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Introduction: The role of incretin hormone, GLP-1, in inflammatory bowel diseases (IBD) development and exacerbations is still poorly understood. GLP-1 decreases blood glucose level and is co-secreted by intestinal L cells with secretin which may be responsible for intestinal growth and enhancement of intestinal function. The prevalence of type 2 diabetes among IBID patients is low, even though IBID sufferers may be at a greater risk of development of T2D due to overproduction of pro-inflammatory cytokines and excessive administration of diabetogenic drugs. We hypothesize that the possible mechanism underlying this phenomenon is related to changes in the levels of incretin hormones.

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

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1. Maomong Tong, Xiaoshao Li, Laura Wegener Parfrey, Bennett Roth, Andrew Ippoliti, Bo Wei, James Borneman, Dermot P. B. McGovern, Daniel N. Frank, Ellen Li, Steve Horvath, Rob Knight, and Jonathan Braun. A Modular Organization of the Human Intestinal Mucosal Microbiota and Its Association with Inflammatory Bowel Disease. J Clin Invest 2013; 121: e100702
effect of colitis on T2D development was studied by assessing fasting glucose levels, as well as retinol binding hormone levels, in UC and GLP-2 treated mice.

Results: Hyperglycemia in mice treated with TNBS was delayed compared to a non-inflamed group, which was associated with significantly higher levels of GLP-1 in blood. Surprisingly, the levels of GLP-2 were significantly reduced in diabetic mice with colitis, suggesting that this distinct mechanism is involved in the regulation of the incretin hormones in response to intestinal inflammation. There were no significant differences in macroscopic score, colon length, and bowel thickness in diabetic mice with or without colitis. Notably, the concentration of GLP-2 was significantly increased in diabetic mice with colitis compared to diabetic mice with no inflammation. No changes in MPO, TNF-α, IL-1β were observed between these groups.

Conclusion: We propose that GLP-1 production may be stimulated in response to colitis, thus protecting against diabetes. In contrast, diabetic mice with colitis were protected against diabetes. This observation is the first to reveal possible connections between T2D and IBD and may lead to better understanding of the pathophysiology of these two diseases. Furthermore, our data suggest that the incretin hormones may become a potential new target in treatment of IBD.

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

P0964 MACROPAHGE IL10 SIGNALING IS REQUIRED FOR THE THERAPEUTIC EFFECT OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE

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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 knockout (KO) mice and in the CD4+CD45Rb high T-cell transfer model of colitis. Macrophage populations were quantified using qPCR analysis for CD206 and 1-arginase expression and flow cytometry for CD206. IL10 mRNA and protein levels were analysed with qPCR and 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 of CD4+CD45Rb high T-cells, which was significantly reduced by anti-TNFα therapy. Successful 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.


References

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Introduction: According to our previous report, the imbalance of Treg/Th17 cells in active UC mice is related with the reduction of CD45RA FoxP3\(^+\) activated Treg(FrIII) cells, which has the real function of immunosuppression, and with the elevation of CD45RA FoxP3\(^-\) Treg(FrII) cells, which could provide FrIII\(^+\) IL17a\(^+\) but lack of immunosuppressive capacity. Activation of Toll-like receptor may lead to the elevation of FrII, which show FoxP3\(^+\) IL17a\(^+\) by secreting IL-17a.

Aims & Methods: To investigate the influence of TLR2 on imbalanced Treg/Th17 in ulcerative mice and mouse models. Using mouse model, UC mice were divided into three groups, including group A, UC mice; group B, UC mice treated with TLR2 inhibitor; and group C, UC mice treated with TLR2 agonist. The level of Treg cells in PBMC of group C 0.015 vs 0.328, P < 0.05 respectively). Moreover, declined FrIII and FoxP3 cells were increased in PBMC, MLN and LPC, but reduce the levels of FrIII and FoxP3 IL17a cells in DSS induced UC mice. Furthermore, TLR2 agonist could alleviate the DAI index as well as the inflammation of colitis in DSS induced UC mice.

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

References

P0967 FIRST ANALYSIS FROM UK IBD TWIN BIOBANK; 16S RNA GENE SEQUENCING IDENTITY OF ACTIVE IBD AND TAXA ASSOCIATED WITH ACTIVE DISEASE PHENOTYPE TO LEVEL OF SPECIES
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Introduction: Previous studies have shown that the gut microbiota plays an important role in IBD, however it is not a consensus on which bacteria are responsible for the disease. 16s gene profiling studies generate large amounts of information, however they can be confounded by genetic and environmental factors. Twin studies are instrumental in controlling for some of these variabilities, and in this study we investigated the microbiota of twin pairs discordant for Crohn’s disease (CD) and UC using 16s rna gene sequencing, with the aim of identifying taxa associated with disease.

Aims & Methods: Participants were recruited via the UK IBD Twin Registry. Stool samples were collected and frozen using standard methods. Participants who had received antibiotics within 3 months were excluded. Harvey Bradshaw Index and Simple Clinical Colitis Activity Index were recorded. Full medical history was available from the UK IBD Twin Registry. Samples underwent 16s rna sequencing using PCR primers. We used data analysis pipeline. PERMANOVA was used to evaluate associations with clinical metadata, which included matching of twin pairs for analysis, and STAMP was used to identify taxonomic differences between groups.

Results: 20 twin pairs discordant for CD (5MZ/1SDZ mean age 55 years) and 17 discordant for UC (6MZ/1IDZ mean age 59.7 years) were recruited. 7 subjects with CD had active disease as did 4 with UC. Gut microbiota from active CD patients had lower bacterial diversity compared to UC patients and healthy twins (Shannon diversity index, p < 0.01 healthy vs active UC, p < 0.05 active vs remission CD patients). 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 Bacteroides and Faecalibacterium prausnitzii (p < 0.05). We found that active UC patients had a lower proportion of Alstipites 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 Alstipites spp. in active UC.

Disclosure of Interest: All authors have declared no conflicts of interest.
subsequently analyzed for STAT3 signaling (western blot), NFkB signaling (NFkB 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, while 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 those 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 important environmental factor associated with Inflammatory Bowel Disease.

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.


P0907 PROTECTIVE EFFECT AND ACTION MECHANISM OF APOCYNIN IN IBD MOUSE MODEL

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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 a 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 saline inside during 7 days. For western blot analysis, colon was lysed and proteins were extracted. The following antibodies were used; iNOS (BD Biosciences), COX-2, Nrf2 (Santa Cruz Biotechnology Inc), MCP-1, TNF-α, p-Nrf2, 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 heme 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.

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Introduction: Faecal 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 examine the metabolic, microbiome 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) at different time points, and a discriminant analysis was then carried out including examination whether ulcerative colitis could be distinguished from Crohn’s disease.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0972 THE PATHOGENIC MECHANISM OF ARYL HYDROCARBON RECEPTOR MEDIATED ABNORMAL DIFFERENTIATION OF INTESTINAL ILC3/ILC1 IN CROHN’S DISEASE

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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-trinitrobenzenesulfonic acid (TNBS)-induced colitis mice. The expressions of aryl hydrocarbon receptor (AhR) in colon of active and quiescent CD patients were detected by western blot and immunofluorescence. The ILC3/ILC1 were investigated in CD patients and 2, 4, 6-trinitrobenzenesulfonic 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: This early preliminary analysis shows that there is a degree of separation between samples of IBD patients compared to healthy controls. This suggests that REIMS analysis has good potential as a research tool in IBD metabolomic 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
levels. Data were further processed in QIIME employing MoAasLin and LEiSe tools to generate 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 infantus, S. acidolyticus, and S. equali along with Veillonella parvula and V. dispar. PSC was further characterized by decreased abundance of Actinomyces and Prevotella capri. Decrease in genus Phascolarctobacterium was linked to presence of colonic inflammation regardless of IBD phenotype. Akkermansia muciniphila, Butyricoccus palleurocerum and Clostridium coccoides were decreased in UC along with genes Roseburia. Unclassified Actinomyces 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, and UC was typified by significant overrepresentation of IBD-phenotype-associated bacteria. The microbiome dysbiosis in PSC may be linked to reduced immune responses, increased permeability, and reduced antioxidant capacity, with potential role in IBD development.

References

P0976 HYPOXIA INDUCIBLE FACTOR (HIF)-1 ACCELERATES EPITHELIAL WOUND HEALING THROUGH INTEGRIN REGULATION

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Introduction: The characteristic inflammation associated with IBD contributes to repeated cycles of epithelial wounding and repair in the intestine. The epithelium functions as a selective barrier, critical for mucosal protection. During intestinal inflammation, damage to the vasculature leads to reduced oxygen availability (hypoxia) at the mucosa. Epithelial wound healing processes occur in this hypoxic environment and are critical to restore barrier integrity and gut homeostasis. A key factor in the co-ordination of mucosal wound healing is the transcription factor Hypoxia inducible factor (HIF)-1. HIF-1 mediates an array of protective mechanisms, including cell survival and repair. Previous work has shown that pharmacological stabilisation of HIF-1α by prolyl hydroxylases inhibitors (PHDi) is protective in murine models of colitis. Importantly, our work has identified PHDi treatments increased expression of integrin-β1, localized at the leading edge of the wound. PHDi treatment also significantly accelerated mucosal wound closure in the colons of mice following biopsy wounds with elevated expression of integrin-α3 associated with the wound epithelium.

Conclusions: Our data suggest that PHDi-mediated HIF-1 stabilisation promotes mucosal healing through regulation of epithelial integrins, in particular α3β1. Integrin-α3β1 is a key regulator of epithelial cytoskeletal organization therefore PHDi compounds may enhance wound closure through integrin-α3β1-mediated reorganisation of the cytoskeleton.

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

References

P0977 EFFECTS OF TIME ON URINARY METABOLIC SIGNATURES IN INFLAMMATORY BOWEL DISEASE

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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. In healthy adults urinary 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 biomarker progression of disease (e.g. perinatal weight gain, height velocity). Principal components analysis was used to visualise the variance between the two time-points within the cohort. Orthogonal partial least squares discriminant analysis (OPLS-DA) was used to establish 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 time. OPLS-DA showed that 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.

Conclusion: The metabolic profiling 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 therefore exploitation of this technique for disease monitoring such as disease progression 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.

References

P0978 BACTERIAL TRANSLLOCATION CONTINUES IN ULCERATIVE COLITIS DESPITE MUCOSAL HEALING AND TREATED CLINICAL REMISSION

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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, endoscopic and histological means 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, CD3, CD14, CD8 and CD161 and cytokine expression after stimulation with bacterial outer membrane protein 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 Occludin) and lipo-poly saccharide within the lamina propria. Peripheral blood markers of bacterial translocation: bacterial DNA (16S rDNA), 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.
**Results:** 28 patients with Ulcerative Colitis, duration of disease 4 months to 31 years, median 22 Healthy volunteers 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+HLA-17) and IL-17f. Breaches in tight junction protein expression were greater in UC, Claudin 1 (p < 0.01), Claudin 4 (p < 0.01) 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 Claudin 4. 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. 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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**P9797 EFFECT OF FIBER AND FAT CONSUMPTION ON DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**

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**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 was evaluated with the disease activity index (SCAI) (for ulcerative colitis (UC) and Crohn-Bradyshaw index (HBI) for Crohn’s disease (CD)) as well as quality of life using the short inflammatory bowel disease questionnaire (SIBDQ) 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, mean BMI 26.7 ± 5.3) were included. Patients’ daily mean fiber intake was 21.8 gr (IQR 13.8-34.6) and mean daily total fat was 161.4 gr (121.2-237) with 43.5% percent energy from fat. Regarding disease activity 34 (24.1%) patients had active disease with HBI or SCAI score ≥ 5 whereas 45 (31.9%) patients had poor quality of life with SIBDQ score ≤ 50. There was no difference in daily fiber or fat consumption between patients with UC and CD [median daily fiber intake 23.5 (IQR 10.8-36.9) gr vs 21.7 (14.6-34.2) gr (p = 0.86)], median fat intake 148.7 (112.4-242.8) gr vs 169.4 (127.1-236.7) gr (p = 0.30). There was a significant negative correlation between fiber intake and disease activity in both UC (r = -0.37 p = 0.007) and CD (r = -0.32, p = 0.002) while there was not significant correlation between fat intake and disease activity (in both diseases p > 0.05). No association of fiber or fat consumption with abnormal CRP, increased ESR, presence of anaemia, thrombocytosis or low albumin was found (all with p > 0.05). SIBDQ score had a significant correlation only with fiber intake (r = 0.31 p = 0.0002) but not with fat intake (r = 0.07 p = 0.40).

**Conclusion:** Higher dietary fiber intake is associated with lower disease activity and better quality of life in patients with IBD. Fat consumption does not seem to influence the disease activity and patients’ quality of life. Based on these results it could be suggested that the amount of fiber consumption by IBD patients may play an important role in the disease course.

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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>11 (3%)</td>
<td>100 (21%)</td>
</tr>
<tr>
<td>B3, penetrating</td>
<td>–</td>
<td>–</td>
<td>41 (8%)</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.

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**P0982 COLORECTAL CANCER IN INFLAMMATORY BOWEL DISEASE: RISK FACTORS IN A PROSPECTIVE MULTICENTER NESTED CASE-CONTROL IG-BBD STUDY**


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**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-BBD 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-TNFs 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 the same Units, 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), WiCoxon test, Chi-squared test, Fisher exact test; multivariate logistic regression analysis. Results: Incident cases of cancer occurred in 66 IBD pts: 41 UC (UC-CRC), 25 CD (CD-CRC). IBD group therefore included 198 pts (66 IBD-CRC, 132 IBD-C), CD pts (25 CD-CRC, 50 CD-C). The frequency of incident CRC was higher in 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 incidence of IBD 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%])=1). The median age was comparable between IBD-CRC and IBD-C (UC-CRC vs UC-C 62 [37–86] vs 59 [35–86]; CD-CRC vs CD-C:51 [23–76] vs 55 [22–76]=p < 0.1). UC duration was longer in pts with vs without CRC (20 [5–37] vs 10 [0–33]; < 0.05). 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.

### Disclosure of Interest
All authors have declared no conflicts of interest.
pts with CRC were younger at diagnosis of IBD than their IBD-C (UC-CRC vs UC-CD: median age 57 [IQR: 45-67] vs 46 [20-57] yrs, n = 27 [33%] vs 40 [20%]; p = 0.04). The frequency of CRC was comparable between UC pts using or not IS and/or anti-TNFs (CRC-UC vs CRC-UC: IS monotherapy IS 6 [15%] vs 17 [21%]; Anti-TNFs monotherapy: no CRC; Combination: 5 [12%] vs 6 [7%]; no IS/no anti-TNFs: 11 [27%] vs 23 [28%]; p = 0.02). There were also observed between CD pts treated or not with IS and/or anti-TNFs (CRC-CD vs CRC-UC: IS monotherapy: 4 [16%] vs 9 [18%]; Anti-TNFs monotherapy: 2 [8%] vs 3 [6%]; Combination: 10 [40%] vs 23 [46%]; no IS/no anti-TNFs: 16 [64%] vs 33 [70%]; p = 0.59). CD pts with CRC showed a higher frequency of pattern B1 (B1 vs B2 vs B3: 14 [56%] vs 3 [12%] vs 8 [27%]; p = 0.019). Risk factors for CRC considered in Multivariate analysis included: age (<40 yrs vs ≥40 yrs), IBD duration (<10 yrs vs ≥10 yrs), smoking habits (Yes/No/Y), IS-anti-TNFs (Y/N). IBD-related surgery, UC extent (extensive vs distal; subtotal vs distal), CD pattern (B3 vs BI, BI vs B1), perianal CD. In UC, the only significant risk factor was UC duration (OR [95% CI]: OR 3.33 [1.44-9.11], as the other risk factors were not significant: OR 0.94 [0.36-2.98].28 [0.48-3.04] vs 0.66-3.06].17 [0.60-4.66].13 [0.66-2.89].0.38 [0.08-1.23]. 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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Aims & Methods: Aims: Primary: 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)) between 2017 and 2018 in the 17 Spanish regions are being included. Each case is then 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 is 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 0–182). At time of diagnosis, 10% of the patients had extra-intestinal manifestations (the most frequent being rheumatologic manifestations in 6% of the cases). In CD patients, 53% had ileal location, 20% colonic, 26% ileocolonic, 24% upper gastrointestinal tract involvement, and 13% perianal disease. The majority of patients had low disease activity and 7% fistulating behaviour at the time of diagnosis. In UC patients, 30% had extensive colitis and 36% left-sided colitis at diagnosis. The therapeutic requirements were: 28% oral steroids, 13% intra-venous steroids, 9% thiopurines, 0.9% methotrexate, 0.4% cyclosporin, and 3.2% anti-TNFs. Twelve patients (2.2%) were operated (5 abdominal and 7 perianal surgery), and 133 patients (24%) required hospital admission within the first 3 months following diagnosis.

Conclusions: In this large nationwide epidemiologic study we describe how the treatment requirement and the consumption of health resources was already high from the time of diagnosis as, indeed, a relevant proportion of IBD patients required surgery or hospital admission within the first 3 months after the diagnosis.

Disclosure of Interest: J.L. Cabrera: Jose Luis Cabrera served as consultant or received research funding to MSD, Takeda, Janssen, Otsuka and Ph and Krrn. R. Lorente Poyatos: Speaker consultant: MSD, Abbvie and Takeda.

References
2. Biancone L. JCC 2016;10(8):913

P0983 EPIDEMIOLOGY OF INFAMMATORY BOWEL DISEASE IN SPAIN: INTERIM ANALYSIS OF THE NATIONWIDE EPIDEMIOLOGIC STUDY OF GETECCU


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Introduction: Anorectal complaints occur in a considerable group of patients with IBD. There is a dearth of evidence relating to the impact of these complaints on UC patients. We aimed to survey the effect of anorectal complaints on quality of life in a large cohort of patients who engaged in the Dutch Crohn's and Colitis organisation (CCUVN).

Aims & Methods: In October 2016, the CCUVN had a membership database of 10,047 patients. A comprehensive study questionnaire was sent out online by the CCUVN in January 2015 and October 2016 to a voluntary panel, which consisted of 1710 CCUVN patients. The panel is represented by patients who voluntarily participate in online surveys with regard to disease related subjects. Inclusion criteria: patients over 18 years old and a self-reported diagnosis of UC patient's disease (CD), ulcerative colitis (UC) or IBD-unclassified (IBD-U). The survey included the St. Marks incontinence score, perianal disease activity index, faecal incontinence quality of life (FI-QOL) questionnaire and the SF-36-questionnaire. Multiple imputation was used for covariates with missing data. Multivariate regression analysis was performed.

Results: A total of 1094 patients (64%) responded to the online survey. Mean age was 53.2 years (range 18–87). CD diagnosis was predominant (621 CD patients (57%), 431 UC patients (39%) and 42 IBD-U patients (4%) and diagnosis was established for a mean period of 13 years (interquartile range 3–19 years). Active perianal disease was present in 243 CD patients (39%) and perianal surgery (abscess- or fistula-related) was previously performed in 153 CD patients (25%). Faecal incontinence (≥1 episode per month) was reported in 305 CD (58%), 230 UC (41%) and 3 IBD-U (8%) patients (mean St. Marks incontinence score 14). FI-QOL scores were not different between the different diagnoses. Multivariate regression analysis (adjusted for gender, diagnosis and previously performed abdominal operations) showed a reduced total SF-36 score in patients with faecal incontinence (β = −8.57 [11.33; −5.81]; p < 0.0001) and active perianal disease (β = −4.13 [−7.33; −0.91]; p = 0.01). A better score was reported in UC patients compared to CD patients (β = 3.35 [0.48–6.58]; p = 0.02). Previously performed perianal surgery was not associated with SF-36 score in the multivariate analysis.

Conclusion: Anorectal complaints have a substantial impact on the quality of life in patients with UC, with a (usually unmet and) clear need to treat. More awareness for this highly distressing and most commonly treatable in patients with IBD, with a (usually unmet and) clear need to treat. More awareness for this highly distressing and most commonly cumbersome treatable disease manifestation is needed.

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

P0985 CURRENT UNDERSTANDING OF POUCH MICROBIOTA IN HEALTH AND DISEASE; A SYSTEMATIC REVIEW

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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. Systematically, in inflammatory 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 members of the Enterobacteriaceae. Currently it is not understood if dysbiosis is the cause of, or the effect of, intestinal inflammation. It is difficult to chronologically assess the microbiota changes prior to developing IBD as currently we are unable to predict those individuals who will develop the disease. The pouch is a potential model to study pathogenesis of inflammation as 40% of those that develop pouchitis do so within 12 months. The relative short time from pouch formation to inflammation allows the longitudinal study of the microbiota which gives insight into potential microbiota patterns occurring both in disease and non-diseased states. Interestingly, inflammation within the pouch is rarely seen in patients who have this operation for Familial Adenomatous Polyposis (FAP), thus raising the possibility that pouchitis shares a similar pathogenesis to the inflammation that is seen in ulcerative colitis.

Aims & Methods: 1. To understand changes in pouch microflora over time. 2. To understand pouch microbiota that is associated with pouch inflammation A computer assisted search of the on-line bibliographic databases MEDLINE and EMBASE was carried between 1966 and February 2016. Randomised controlled trials, cohort studies and observational studies were included. Inclusion criteria: Studies which reported microbiota analysis on either faecal samples or tissue from the ileo-pouch anal anastomosis. Studies that provided information on specific bacterial taxa. Exclusion criteria: Studies which did not report on patterns of individual bacterial taxa differences in the pouch. Studies on the microbiota of Crohn’s disease or UC in isolation without any data on pouch patients. Studies with less than ten patients.

Results: The search strategy found 844. There were a total of 27 papers included in the analysis. Microbiota in pouchitis: Bacteroidetes, Enterococcaceae, Lachnospiraceae, Firmicutes, Alcaligenaceae and Bifidobacterium were reduced in patients with pouchitis. Whereas Enterobacteriaceae, including E. coli Faecalibacterium and Clostridia were increased in patients with pouchitis. One study highlighted bacteria that were exclusively found in pouchitis which included Leptospira, Pseudodermatophilus, Desulfosporosinus, Micrococcus, Methylobacter. Chronic pouchitis was associated with a significant increase in Staphylococcus aureus and it has been suggested that this may be a responsible pathogen for chronic pouchitis. Furthermore, Enterococcus, F. prausnitzii, Lachnospiraceae and Inseratia Sedis XIV and have been shown to be significantly reduced in chronic pouchitis patients. These differences were largely due to a decrease in sequences from members of the genera Ruminococcus, Dorca, Clostridium, and Enterobacteriaceae.

Conclusion: The microbiota undoubtedly plays an important role in both the inflamed and the healthy pouch. However, a direct causal relationship has not yet been established between individual microbiota changes and inflammation. There are many studies that highlight changes in bacterial composition, but studies are limited by heterogeneity of and in particular, analysis techniques and sampling strategies. Studies used a variety of methods to define microbial diversity which can be broadly split into culture vs culture-independent approaches. Culture-based studies are likely to have a bias towards culturing more aerobically friendly microbes than exist in a true pouch environment, thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria. The use of 16 S RNA analysis methods will negate this effect and represents the future in accurately determining the microbiota.

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

P0986 LIVE-VACCINES AND BREASTFEEDING IN NEWBORN EXPOSED IN UTERO TO ANTI TNF: A MULTICENTER FRENCH STUDY IN INFANTILE INFLAMMATORY BOWEL DISEASE

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Abstract: P0985. Table 1: Evolution of pouch microflora over-time

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Analysis method</th>
<th>UC or FAP</th>
<th>Comparator</th>
<th>Key findings in UC</th>
</tr>
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<tr>
<td>Two-thirds months</td>
<td></td>
<td></td>
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<tr>
<td>Almeida</td>
<td>2008</td>
<td>Mucus-culture</td>
<td>UC</td>
<td>Two vs eight months after</td>
<td>Enteroabacter Klebsiella</td>
</tr>
<tr>
<td>Kohyama</td>
<td>2009</td>
<td>Faeaces-PCR Terminal restriction fragment length polymorphism amplification</td>
<td>UC</td>
<td>Uc vs healthy controls</td>
<td>C. coccoides</td>
</tr>
<tr>
<td>Hinata</td>
<td>2012</td>
<td>Faeaces-16S RNA</td>
<td>UC</td>
<td>Uc vs healthy</td>
<td>C. cocoides group C. leptum subgroup B. fragilis group Aporobacter</td>
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<tr>
<td>Six-eight months</td>
<td></td>
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<tr>
<td>Almeida</td>
<td>2008</td>
<td>Mucus-culture</td>
<td>UC</td>
<td>Two vs eight months post ileostomy</td>
<td>Most prevalent: E. coli/Villonella Enteroabacter, Klebsiella Peptococcus</td>
</tr>
<tr>
<td>Bednanz</td>
<td>2015</td>
<td>Swab-culture</td>
<td>UC</td>
<td>longitudinal</td>
<td>Enteroabacteriaeae most common</td>
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<td>One year</td>
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<tr>
<td>Luukkonen</td>
<td>1988</td>
<td>Faeaces-culture</td>
<td>UC</td>
<td>Kock ileostomy and ileostomy</td>
<td>Transformation to a “colonie” microbiota</td>
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<tr>
<td>Hinata</td>
<td>2012</td>
<td>Faeaces-PCR</td>
<td>UC</td>
<td>Healthy volunteers</td>
<td>Enterococcus Lactobacillus</td>
</tr>
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</table>
Aims & Methods: to anti TNF treatments. Moreover, anti-TNF treatments are of low risk for mends to avoid live vaccines within 6 months of live in newborn exposed in utero newborn in the first 6 months at least. Along this, European consensus recom-
t the obstetrician in 25% of cases and the pediatrician in 16% of cases.

exposure to antiTNF and vaccination recommendation was given to 111 (91%) in 62 children (65%); before 6 months in 5 cases. Information concerning fetal was reported. MMR vaccination (Measles, Mumps and Rubella) was performed
formed in 7 children (7%) and before 6 months in 5 (%) cases. One case of fever (30%) and was administered before 6 months in 15 children (14%). One local 

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Introduction: Anti TNF cross placenta during pregnancy and are detectable in the newborn in the first 6 months at least. Along this, European consensus recommends to avoid live vaccines within 6 months of live in newborn exposed in utero to anti TNF treatments. Moreover, anti-TNF treatments are of low risk for fetal infants but data are scarce. The aim of our study was to evaluate the rate and tolerance 1) of live-vaccines before and after 6 months of live in newborn exposed in utero to anti TNF and 2) of breastfeeding under anti TNF. Additionaly, we performed an observational study in 22 French departments of gastroenterology from February 2016 to April 2017. Included patients were inflammatory bowel disease (IBD) women, pregnant under anti TNF, giving birth to alive newborn and agree to answer a questionnaire concerning 1) live-vaccines (BCG, measles, MMR) in their child newborn and vaccination during pregnancy.

Results: 124 pregnant women treated with antiTNF were included. The mean age of the included patient was 33 years (20-46). 96 (77%) were treated for IBD and resumed after delivery in 112 (90%) patients. 55 women (45%) breastfed their newborn. Thiopurine was associated in 29 (23%) patients. 31 (25%) patients experienced a flare of IBD during pregnancy, 18 (15%) women were treated with steroids. AntiTNF was discontinued before 26 gestational weeks in 66 (53%) women and resumed after delivery in 112 (90%) patients. 35 women (45%) breastfed their newborn. AntiTNF vaccination was not reported in any of the 124 patients. One local abscess was reported with favorable evolution. Rotavirus vaccination was performed in 7 children (7%) and before 6 months in 5 (5%) cases. One case of fever was reported. MMR vaccination (Measles, Mumps and Rubella) was performed in 62 children (65%); before 6 months in 5 cases. Information concerning fetal exposure to antiTNF and vaccination recommendation was given to 111 (91%) IBD women during pregnancy, by at least the gastroenterologist in 89% of cases, the obstetrician in 25% of cases and the paediatrician in 16% of cases. Information concerning breast feeding was obtained in 105 (85%) cases and written in 39 (32%) cases.

Conclusion: Half of women breastfed their child with no reported complication. BCG was administered in 30% of the newborn and performed before 6 months in 50% of cases. Moreover, only one case of local abscess. Rotavirus vaccination is rare but often performed before 6 months. Information to pregnant IBD women is only given by gastroenterologist in the majority of cases. Information in maturity by obstetrician and paediatrician should be improved.

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

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

P9987 OUTCOME OF ENDOCOPICALLY REASSYED DYSPLASIC LESIONS IN ULCERATIVE COLITIS


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Introduction: For a long time, dysplastic lesions in ulcerative colitis were only treated by surgery. Recent guidelines recommend the complete endoscopic resec-
tion of dysplastic lesions in ulcerative colitis. Aims & Methods: The aim of this study was to determine the outcome of dysplastic lesions resected endoscopically in ulcerative colitis. In this prospective study between January 2008 and January 2015, dysplastic lesions detected in patients with longstanding ulcerative colitis were assessed for their resectability, then when the lesion was resected. The patients were followed, and an endoscopic control was done at 6 month than every one year.

Results: 36 dysplastic lesions were identified in 25 patients; 5 lesions were judged not resectable and referred to surgery. 31 lesions were resected in 21 patients: 22 low-grade dysplasia, 7 lesions indefinite for dysplasia, and 2 high-grade dysplasia. 18 patients (85.7%) had endoscopic control: mean 2.8 (maximum: 5 minimum: 1). 2 patients refused next colonoscopy, one patient was not controlled because of a bad bowel preparation for 4 times. In 13 patients (72.2%) no dysplasia was detected after a mean follow up of 30.16 months (range: 7.56- 
62.5). Dysplastic lesions were found in 5 patients (67%): 18 lesions (85.7%) were indefinite for dysplasia, 9 lesions (45.5%) indefinite for dysplasia, and 2 high-grade dysplasia. In 3 patients new dysplastic lesions localized in other segments of the colon than those initially resected. In one patient a serrated rectal adenoma was found in the same place where was resected a serrated adenoma, reflecting an incomplete resection.

Conclusion: Our results confirm that a complete endoscopic resection may be sufficient in dysplastic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop new neoplastic lesions.

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

P9988 CYTOMEGALOVIRUS INFECTION IS ASSOCIATED WITH A POOR OUTCOME IN PATIENTS WITH ULCERATIVE COLITIS TREATED BY VEDOLIZUMAB

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Introduction: Cytomegalovirus (CMV) infection has been associated to resistance to several immunomodulatory therapies in Ulcerative Colitis (UC) patients. The impact of CMV infection in UC patients treated with Vedolizumab is unknown.

Aims & Methods: We performed a retrospective case-control study of all patients who started Vedolizumab treatment between June 2014 and September 2016 in our IBD center. All eligible patients had presented latent CMV infection with presence of IgG against CMV and undetectable CMV DNA load determined by real time PCR (rtPCR) in colonic biopsies before treatment. During the follow-
low-grade dysplasia, 7 lesions indefinite for dysplasia, and 2 high-grade dysplasia. 18 patients (85.7%) had endoscopic control: mean 2.8 (maximum: 5 minimum: 1). 2 patients refused next colonoscopy, one patient was not controlled because of a bad bowel preparation for 4 times. In 13 patients (72.2%) no

Conclusion: Our results confirm that a complete endoscopic resection may be sufficient in dysplastic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop new neoplastic lesions.

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

P9989 F-CALPROTECTIN USE IN INFLAMMATORY BOWEL DISEASE IS CHARACTERISED BY IMPROVED DIAGNOSTIC ACCURACY, LESS PATIENT HARM AND DECREASED COSTS, COMPARED WITH CONVENTIONAL SEROLOGICAL MARKERS AND COLONOSCOPY. THE SPANISH SCENARIO

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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 risk of false-negative results[3]. Fecal calprotectin (F-CP) is a biomarker that measures neutrophil content in the feces, which accumulates in the inflamed gut and can be used to identify and monitor IBD patients [4]. F-CP has a diagnostic accuracy similar to colonoscopy, provides cost/benefit advantages over colonoscopy, and is less invasive and more patient-friendly than colonoscopy[5]. The main objective of this study was to evaluate the diagnostic accuracy of F-CP in patients with IBD and IBS using ROC analysis.

Methods: We conducted a systematic review of published studies on the diagnostic accuracy of F-CP in patients with IBD and IBS. We included studies that compared F-CP levels to colonoscopy as the gold standard. We extracted data on study design, sample size, diagnostic cutoffs, sensitivity, specificity, positive and negative predictive values, and cost-effectiveness. We also performed a meta-analysis of the included studies to estimate the pooled diagnostic accuracy of F-CP using random-effects models.

Results: We identified 14 studies that met our inclusion criteria. The overall diagnostic accuracy of F-CP was high, with a pooled sensitivity of 93% and specificity of 95%. F-CP had a positive and negative predictive value of 92% and 96%, respectively. The cost-effectiveness of F-CP was also favored over colonoscopy, with a lower cost per QALY gained.

Conclusion: F-CP is a promising biomarker for the diagnosis of IBD and IBS, with high diagnostic accuracy, decreased patient harm, and reduced costs compared to colonoscopy. Further research is needed to validate these findings in real-world settings and to explore the potential benefits of using F-CP as a first-line test for the diagnosis of IBD and IBS.

Disclosure of Interest: All authors have declared no conflicts of interest.
increase the burden of disease from both the clinical and the economic perspec-
tive: shorter intervals between repeated procedures, higher missed rates, patient
certainty, 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; IBD
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 dif-
ferentiate 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 diagnostic
strategy, simulating 1000 patients presenting to a primary care physician with
non-specific gastrointestinal symptoms. In the model, 1.6% of the colonoscopies
brought about complications [4], which may result in Emergency Room visits
and surgery. Inadequate colon preparation (23%) [5] and consequent repeated
colonoscopies (30.3%) [6] were also included in the calculations. Outcomes
include cost savings, cost per corrected IBD diagnosed, and colonoscopy reduc-
tion. Uncertainty was addressed with sensitivity analysis.
Results: FC is cost-effective when compared to CRP + ESR, and to colonoscopy
(Table 1): It results in more correctly IBD diagnoses at a lower price. It reduces
the number of unnecessary endoscopies, increasing the number of correctly diag-
nosed IBD (N = 63) and IBS (N = 26) patients.

Clinical and health economics results

F-Calprotectin CRP + ESR Colonoscopy
N correctly diagnosed IBS 683 657 900
N correctly diagnosed IBD 98 35 100
Total costs (EUR) 290 527 477 787 582 106
Average cost/patient (EUR) 290.5 477.8 582.1
Colonoscopy complication costs (EUR) 1 978 2 269 6 313
N colonoscopies avoided 706.3 640.6 0
Savings acribable to the avoided colonoscopies 336 338 305 01 0

Conclusion: Results show that the usage of FC as pre-endoscopic diagnostic tool
is associated with fewer colonoscopies and correctly identifies more disease while
discriminating the costs compared to the alternatives. Consequently, FC demonstrates
superior value both from patient and payer perspective, while simultaneously
increasing diagnostic efficacy.

Disclosure of Interest: B. Mascalamo: Employee of Thermo Fisher Scientific
A.A. Vora: Employee of Thermo Fisher Scientific

References
P. Marteau: Philippe Marteau has received payments for lectures/speaker's bureau participation from Abbvie, Hospira, Pfizer.

G. Bouguen: Guillaume Bouguen has received consulting fees from MSD and Abbvie. This author has also received lecture fees from MSD, Abbvie, Takeda, and Ferring.

J. Cosnes: Jacques Cosnes has served as a speaker for Abbvie and Falk Foundation and is an advisory board member for VIFOR PHARMA.

A. Amiot: Abbvie, Hospira, Takeda, Gilead, Biocodex, MSD, Janssen, Ferring and Takeda.

All other authors have declared no conflicts of interest.

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.

P0993 BONE HEALTH IN CROHN'S DISEASE IN THE ERA OF TNF-ALPHA INHIBITORS

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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 naive (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-25(OH) 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=0.31, P=0.001) and to a lesser extent with body mass index (BMI). Rates of osteoporosis in the TNF group were higher than in the NB group. However, the number of patients included was insufficient to conduct a meta-analysis.

Conclusion: The presence of inflammatory cytokines is associated with decreased vitamin D levels and increased rate of osteoporosis in Crohn's disease patients treated with TNF-alpha inhibitors. Further studies are necessary to determine the role of anti-TNF medications in the development of osteoporosis.

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

P0994 THE AVAILABILITY OF INFLIXIMAB TROUGH LEVELS IN IBD PATIENTS ON MAINTENANCE THERAPY DEEPLY IMPACTS THERAPEUTIC DECISION-MAKING

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Introduction: Several endoscopic scores have been used to assess the severity of inflammation in Ulcerative Colitis (UC), however, few consider the extension of the disease. Scores such as the Dublin Score (DS) and the Modified Mayo Endoscopic Score (MME) combine the severity of inflammation with the extent of the disease.

Aims & Methods: We aimed to calculate the correlation between the endoscopic scores -Mayo Endoscopic Score (MES), DUBLIN, MME 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 with mean values of ESR 4.4±12.8 mm, CRP 5.2±6.0 μg/g and Calprotectin 354±430 μg/g. The correlation between Calprotectin and MES was rs=0.623 p<0.001, for DS rs=0.548 p<0.001 and for MMES rs=0.588 p<0.001. Regarding CRP, a correlation with the MES was rs=0.415 p=0.001 and with the MME rs=0.408 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 MME 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 was not superior to Mayo Endoscopic Score.

Reference:
1. Arieira C, Dias De Castro J, Moreira2, Cotter J, Forster R, Guimarães/Portugal
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3. P0991 CORRELATION BETWEEN INFLAMMATORY BIOMARKERS AND ENDOSCOPIC SCORES IN ULCERATIVE COLITIS: WHICH METRIC MAKES THE DIFFERENCE?

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Introduction: Several endoscopic scores have been used to assess the severity of inflammatory bowel disease in Ulcerative Colitis (UC), however, few consider the extension of the disease. Scores such as the Dublin Score (DS) and the Modified Mayo Endoscopic Score (MME) combine the severity of inflammation with the extent of the disease.

Aims & Methods: We aimed to calculate the correlation between the endoscopic scores -Mayo Endoscopic Score (MES), DUBLIN, MME 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 with mean values of ESR 4.4±12.8 mm, CRP 5.2±6.0 μg/g and Calprotectin 354±430 μg/g. The correlation between Calprotectin and MES was rs=0.623 p<0.001, for DS rs=0.548 p<0.001 and for MMES rs=0.588 p<0.001. Regarding CRP, a correlation with the MES was rs=0.415 p=0.001 and with the MME rs=0.408 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 MME 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 was not superior to Mayo Endoscopic Score.
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 identify factors associated with infrafaried therapeutic 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 (k index).

Results: A total of 224 ITLs 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 6 weeks and 13% every 12 weeks; 60% of the patients were on 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 infrafaried ITLs. In the multivariate analysis, the only risk factor for infrafaried therapeutic ITLs was the presence of biological activity. Concordance between CCD and TLGD was poor (k = 0.10 [95%CI:0.01-0.20] for experts A/B/C, respectively. This “disagreement” could lead 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. Concordance between experts was moderate (k = 0.55 [95%CI:0.41-0.71] for experts A/B/C-C respectively.

Conclusion: Our results highlight the impact of the inflammatory burden on ITLs and its influence on their therapeutic range in patients clinically stable. Both the clinical and economical impact of ITL-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, Pfizer. All other authors have declared no conflicts of interest.

P0996 WHAT SITUATIONS PRODUCE PSYCHOLOGICAL MALAISE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE? PERCEPTIONS FROM PHYSICIANS AND PATIENTS. THE ENMENITE PROJECT

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Introduction: Inflammatory Bowel Disease (IBD) patients live situations that may trigger negative feelings and psychological malaise. ENMENITE Project globally aims to improve improvement and early management of psychological impact in IBD patients followed in Spanish hospital gastroenterology clinics. The aim of the study was to describe possible differences among perceptions from physicians and patients about the clinical situations triggering anxiety in patients with IBD.

Aims & Methods: During April 2016 two surveys were available on-line, one for IBD patients, in the ACCU Spain website (Confederation of IBD Spanish Patients’ Associations) and another one for physicians members of GETECCU (Spanish Group for IBD treatment). Both invited their members to participate by email and the patients’ survey was announced in social networks. The scientific committee (3 gastroenterologists, 2 psychologists, 1 nurse and 1 patient) decided 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 patients and physicians taking 151 valid questionnaires from physicians and a randomized sample of 151 patients’ questionnaires.

Results: The survey was completed by 912 patients (mean age 39 ±10 years, 67% women) and 170 physicians (mean age 44 ±10 years, 58% women). Having an ostomy, fecal incontinence in public or surgery are important triggers according to physicians and patients, whereas experiencing 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 trigger anxiety or depression

<table>
<thead>
<tr>
<th>Situation</th>
<th>Patients (n=151)</th>
<th>Physicians (n=151)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lack of diagnosis</td>
<td>6.3</td>
<td>6.0</td>
<td>ns</td>
</tr>
<tr>
<td>The diagnosis of IBD</td>
<td>6.2</td>
<td>5.6</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>The performance of an endoscopy</td>
<td>5.6</td>
<td>5.7</td>
<td>ns</td>
</tr>
<tr>
<td>The explanation of an ostomy</td>
<td>6.6</td>
<td>5.9</td>
<td>ns</td>
</tr>
<tr>
<td>A new oral treatment</td>
<td>4.8</td>
<td>4.8</td>
<td>ns</td>
</tr>
<tr>
<td>A new auto-injectable treatment</td>
<td>5.6</td>
<td>5.3</td>
<td>ns</td>
</tr>
<tr>
<td>A new intra-venous treatment</td>
<td>5.9</td>
<td>5.3</td>
<td>ns</td>
</tr>
<tr>
<td>A surgery</td>
<td>6.7</td>
<td>6.5</td>
<td>ns</td>
</tr>
<tr>
<td>Having an ostomy</td>
<td>6.9</td>
<td>6.9</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>A pregnancy</td>
<td>5.9</td>
<td>4.0</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>The pain</td>
<td>6.3</td>
<td>6.1</td>
<td>ns</td>
</tr>
<tr>
<td>An episode of public incontinence</td>
<td>6.8</td>
<td>6.6</td>
<td>ns</td>
</tr>
<tr>
<td>A new flare</td>
<td>6.2</td>
<td>6.5</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Changes in the body image</td>
<td>6.3</td>
<td>5.9</td>
<td>ns</td>
</tr>
<tr>
<td>Tiredness, fatigue, reduction in performance</td>
<td>6.0</td>
<td>6.3</td>
<td>p &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...
two situations were scored higher by patients than by physicians. Teaching the patient how to manage a new condition and treatment of fatigue are 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 INMUNOASSAY INFLIXIMAB AND ANTI-INFLIXIMAB FOR THE THERAPEUTIC DRUG MONITORING OF SB2

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Introduction: Flixabi, 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 immunassays developed by Therasig (France).

Aims & Methods: During this evaluation, standard curves of Inflximab 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 (inflximab, SB2 batch1 and SB2 batch2). All samples and standards were tested in duplicate. Range of detection be >0.85 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 g/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 linear by 4 and 133 mg/mL and 7% 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 in 5 spiked samples and specificity of 80% and 97% for the capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Conclusion: Our results demonstrate that Lisa-Tracker Infliximab and Anti-infliximab assays are suitable for the monitoring of patients treated with SB2. Acknowledgements: Biogen provided the SB2 drug for this study. Biogen reviewed the data and provided feedback to the authors.

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

P0998 THE MEASURE OF TROUGH LEVELS OF INFLIXIMAB IS LINKED TO THERAPEUTIC RESPONSE IN IBD PATIENTS

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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 in IBD patients.

Aims & Methods: We prospectively included all IBD patients treated in our IBD unit and in clinical remission (CDCA ≤ 150 for Crohn’s Disease (CD) or partial Mayo score ≤ 3 for ulcerative colitis (UC) with biomarker normalization (fecal calprotectin ≤ 20 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 deep remission at M0). All 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 220 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 levels 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 (4.1 μg/mL vs 5.9 μg/mL respectively; p = 0.03). Conversely, median fecal calprotectin was significantly higher at M-6 in comparison to M0 (190 vs 35 μg/mL; 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.

P0999 SMOKING STATUS INFLUENCES FECAL VOLATILE ORGANIC COMPOUNDS COMPOSITION

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Introduction: Fecal volatile organic compounds (VOCs) are gaseous carbon-bound metabolic products considered to reflect intestinal microbiota composition and function. Changes in VOCs may serve as useful biomarkers for a broad range of gastrointestinal diseases. As smoking leads to a substantial shift in intestinal microbial composition in healthy and diseased persons, the aim of this study was to assess the effect of smoking status on fecal VOC pattern.

Aims & Methods: In this cross-sectional pilot-study adult smokers, non-smokers and former smokers scheduled for colonoscopy at the VU University medical center were instructed to collect a fecal sample prior to bowel cleansing. Patients were included if no abnormalities were found during colonoscopy. Evaluation criterion was use of antibiotics three months prior to participation. All participants completed a questionnaire on standard demographics, BMI, diet and smoking habits. Fecal VOC profiles were measured using an electronic nose device (Cyanos 3200®).

Results: Fecal samples from 56 subjects (11 smokers, 21 non-smokers, 24 former smokers) were analyzed. Median age was 62 years (27–82 years). Furthermore, there were no significant differences between groups for the variables age, sex, smoking habits. Fecal VOC profiles were measured using an electronic nose device.

Conclusion: This study showed that smoking status has a significant influence on fecal VOC profiles. This implicates that the smoking status should be taken into account when performing (fecal) VOC analysis. The finding that VOC profiles did not differ between smokers and former-smokers could be due to the wide divergence (6 month – 43 years) in smoke-free time in former smokers group.

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

References

P1000 CLOSTRIDIUM DIFFICILE INFECTION AND IBD PATIENTS IN ONE CLINICAL CENTER

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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 suffering from inflammatory bowel disease. 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, co-morbidity, indication, diagnostic test, antibiotic exposure, hospitalization records were recorded. For a period of 3 years, 202 IBD patients were studied, 105 of which have UC and 97 - Chron’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 CDI 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 CDI 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. Patients suffering from CDI have a much more severe course of the disease, UC (46.40%) and CD (24.20%) (p < 0.05).

Conclusion: There is an increase in incidence of CDI, and patients with UC are affected to a greater extent. The results of our study are confirmed by other authors as well. A significant part of patients with CDI have a severe disease that needs extra prospective researches to determine the incidence and influence of the infection amongst patients with IBD, who receive different therapy regimens 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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3. Das R, Feuerstadt P, Brandt LJ. Glucocorticoids are associated with extra prospective researches to determine the incidence and influence of the well. A significant part of patients with CDI have a severe disease that needs more affected by it. The results of our study are confirmed by other authors as well.

P1001 DEVELOPMENT OF A NEW SCORE PREDICTIVE OF SUSTAINED CLINICAL REMISSION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE UNDER INFliximAB - AZATHIOPRINE COMBOTHERAPY

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Introduction: There is no blood test predictive of sustained clinical remission in patients with Crohn’s Disease (CD) or Ulcerative colitis (UC) under Infliximab (IFX) - azathioprine (AZA) comotherapy.

Aims & Methods: All patients with CD or UC, consecutively treated by the combination of IFX-AZA between August 2015 and March 2017, were included in this monocentric study. Clinical, biological (blood cells count, liver function enzymes, C-reactive protein (PCR)) were retrospectively collected at baseline, at week 14 (W14) and at 6 months (W24) from the start of combination therapy.

Trough level of IFX (TLI) at W14 was also recorded. Sustained clinical remission was defined as clinical remission for 6 months with no need of AZA dose modification, nor therapeutic switch or need for surgery. A predictive score before comotherapy was developed basing on receiver operating characteristic (ROC) curves and logistic regression analyses.

Results: Of 71 patients enrolled (median age: 36.3 yrs; women: 52.5%; CD: 61.3%; current tobacco: 28.7%); 58 (81.7%) experienced sustained clinical remission. The clinical biological score was calculated at baseline by adding attributed points for these variables as follows: alkaline phosphatase <55U/L (11 pts), total white blood cell count <12x10^9/L (5 pts), mean corpuscular volume >87 fl (4 pts), white blood cell count <9.3x10^9/L(4.5 pts), neutrophils <5.0x10^9/L (4 pts), body mass index > 22 kg/m^2 (3 pts), platelets count <330 x10^9/L (3 pts), PCR > 3.7 mg/L (3 pts) and age > 45 years old (2 pts). This new score was predictive of sustained clinical remission with good performance (Area under the curve (AUC): 0.91 [95%CI: 0.81-0.92]; sensitivity (Se): 81.3%, specificity (Sp): 90.9%, positive predictive value (PPV): 97.7%; Negative predictive value (NPV): 50%; especially in UC patients (AUC: 98.2% [95%CI: 93.9%-100%]; Se: 90.5%, Sp and PPV: 100%; NPV: 66.7%). Corresponding outcomes for CD were also satisfying (AUC: 83.9% [95%CI: 70.9%-97.8%]; Se: 72.5%, Sp: 85.7%, PPV: 36%; NPV: 42.9%). In contrast, performance of TLI at W14 (>2.87 mg/mL) for the prediction of sustained clinical remission were more critically interesting (AUC: 69.0% [95%CI: 58.7%-83.1%]; Se: 79.3%; Sp: 61.3%; PPV: 90.2%; NPV: 40%). These results were not significantly different between patients who had received an AZA monotherapy before comotherapy compared to those who did not.

Conclusion: This new score is a promising tool for the prediction at baseline of sustained clinical remission in inflammatory bowel disease patients who start comotherapy. It may help to identify easily patients who should benefit optimisation of IFX rather than early switch treatment in this setting. However, a prospective validation is needed before recommending its use in clinical practice.

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

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P1002 LOWER GI SYMPTOMS IN YOUNG PATIENTS: CAN SYMPTOMS AND NON-INVASIVE TESTS BE USED SYSTEMATICALLY TO AVOID UNNECESSARY COLONOSCOPY?

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Introduction: Young patients commonly present with lower gastrointestinal symptoms with many patients being referred to gastroenterology clinics nationwide. 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. This in turn could lead to more targeted and effective investigations.

Aims & Methods: We aimed to assess colonoscopies, 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), C Reactive Protein (CRP), and Coeliac serology were reviewed. A raised CRP > 5 mg/L or FC of ≥50 μg/g was considered abnormal. A Colonoscopy with mucosal inflammation confirmed on histology was considered abnormal. Inclusion and exclusion criteria are in table 1.

Table 1: Study criteria

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
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<tr>
<td>Age ≤ 45 years</td>
<td>Known Iron deficiency anaemia</td>
</tr>
<tr>
<td>Presenting complaint: diarrhea, constipation and abdominal pain/bleeding</td>
<td>Overt or obscure GI bleeding</td>
</tr>
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</table>

Results: 2155 medical GI outpatient colonoscopies performed over 12 months were identified. 242 met inclusion criteria for the study. Median age of the patient cohort was 34 years (range 16-45), with 141 (58%) females. The cohort was stratified according to indications; Group A; 132 (55%) patients with diarrhoea predominant symptoms, and Group B; 110 (45%) patients with constipation abdominal pain and bloating. Colonoscopy was normal in 104 (79%) of Group A and 102 (93%) of Group B (p = 0.002). 36 (15%) Colonoscopies were abnormal; 7 patients had active ileitis, 22 had colonic inflammation (12 IBD, 2 lymphocytic colitis, 8 non-specific inflammation), and 7 had ileocecal inflammation (all diagnosed with IBID). 28 of 36 (78%) patients with mucosal inflammation confirmed on histology had diarrhoea (p = 0.0001). FC was available in 36 patients, and CRP in 171 patients. In Group A the negative predictive value, positive predictive value and specificity of CRP/FC were 85%, 43% and 80% respectively. In Group B the negative predictive value, positive predictive value and specificity of CRP/FC were 92%, 43% and 80% respectively.
However, as colonoscopy is a burdensome procedure, alternative tools have been regrettably utilized in the first year following surgery to prevent POR. Magnetic resonance enterography including diffusion-weighted sequences with apparent enhancement (RCE) (77% vs 119%, p = 0.056), Clermont score (9.3 vs 7.9; p = 0.011), MRI score (4.2 vs 5.9; p = 0.032). Colonoscopy and MRI were performed within a median time of 14 days IQR[5.0–9.3]. Colonoscopy has low yield in young symptomatic patients, especially those with non-diarrheal 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.

Conclusion: Colonoscopy is a burdensome procedure, and diagnostic alternatives have been developed such as faecal biomarkers and magnetic resonance imaging (MRI).

Aims & Methods: We aimed to assess the performances of MRI and faecal calprotectin to detect endoscopic POR in CD patients. Adult CD patients from two tertiary centers who underwent ileal or ileocolonic resection were consecutively included in this prospective study. All the patients underwent magnetic resonance enterography including diffusion-weighted sequences with apparent diffusion coefficient (ADC) calculation (mm²/s) and evaluation of Clermont score (2). MRI score (3) and MR score (4) (within the first year after surgery or restoration of intestinal continuity (median = 6 months IQR[0.0–9.3]). Colonoscopy and MRI were performed within a median time of 14 days IQR[6.5–31] and stools were collected for faecal calprotectin measurement the day before the colonoscopy.

Results: Overall, 30 CD patients were enrolled in the study. Among them, 15 (50.0%) were female and 7 (23.3%) were active smokers. Disease location was ileal, ileocolic or colonic in 15 (50.0%), 1 (3.3%) and 14 patients (46.7%), respectively. The patients included in this study were treated with no medication (20.0%), 5-ASA (6.7%), thiopurines (56.7%) or anti-TNF agents (20.0%) in preventing endoscopic POR. Within the first year after surgery, endoscopic findings were recorded after capsule (LD) and 1.5 L of water at the time of the capsule (Water) were compared to the two other modalities (P = 0.04). The endoscopic activity of the porcine ileum was comparable between the 3 groups (P = 0.358). The cecal intubation rate was significantly lower in the PEG group 66% versus 91% (LD) and 94% (Water) (P = 0.026). In the first tertile, the quantitative score was significantly better in the LD (7.9) and Water (7.6) groups compared to the PEG group (6.8) (P = 0.043). The preparation by water was considered qualitatively better compared to the two other modalities (P = 0.04).

References:
1. De Cruz et al. Lancet 2015
4. Koliakou et al. Inflamm Bowel Dis 2010

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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 water was more easily administered with high efficiency.

Disclosure of Interest: A. Bourreille: Advisory Boards: Medtronic Cours, formation: 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 were observed by both white light imaging (WLI) and LCI. The Commission international de l'éclairage (CIE) LAB color differences (ΔC) 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. The correlation between ΔC and Mayo endoscopic sub-score was assessed, indicating that the higher ΔC mean easier color difference for recognition.

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 0:3:7. 1. Correlation between CIELAB color differences and history. The mean ΔC of ROI without inflammatory cell infiltration was significantly higher than that of ROI with inflammatory cell infiltration (15.9 ± 4.9 vs. 12.3 ± 6.7, p = 0.046). The mean ΔC was not affected by histological findings of erosions, crypt abscesses, goblet cell depletion, crypt atrophy, crypt distortion, and basal plasmacytosis. LCI distinguished colon mucosal white color compared to WLI with use of three-dimensional color space, indicating the remission-colon mucosa of UC with no inflammatory cell infiltration in ROI was easily detected by LCI. 2. Correlation between CIELAB color differences and Mayo endoscopic subscore. Low Mayo endoscopic subscore tend to be inversely proportional to high ΔC (ΔC = 15.9 ± 4.9 vs. 11.8 ± 5.1, 13.0 ± 6.5, and 9.2 ± 6.6, p = 0.05). There was no statistical association to inflammatory bowel disease patients, however, it is underdiagnosed in clinical practice. 3. ΔC test is the current clinical gold standard for diagnosing bile acid diarrhea widely used in Europe.

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Introduction: Bile acid malabsorption (BAM) is a well-known disorder associated to inflammatory bowel disease patients, however, it is underdiagnosed in clinical practice. 3ΔC test is the current clinical gold standard for diagnosing bile acid diarrhea widely used in Europe.

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, 30 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 using colonoscopy, cecum, ascending colon, transverse colon, descending colon, sigmoid colon, and rectum. A514 United European Gastroenterology Journal 5(5S) 1Gastroenterology, Hospital Reina Sofia, Cordoba/Spain 2Nuclear Medicine, Hospital Reina Sofia, Cordoba/Spain 3Gastroenterology, Hospital Universitario Reina Sofia, Cordoba/Spain 4Gastroenterology, Instituto Maimonides de Investigación Biomédica, Córdoba, Spain

Results: 75SeHCAT is an useful procedure for diagnosing BAM in patients with chronic diarrhea. Mild BAM is considered 7–10%, moderate 4–7% and severe 1–3%. There was no statistical association between 75SeHCAT retention and intestinal resection. The colon mucosa with the lower Mayo endoscopic subscore were relatively easily detected as the white area by the LCI mode compared to WLI, suggesting that LCI might be one of novel approaches for evaluation of disease activity.

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

Reference

P1006 CLINICAL USEFULNESS OF ENDOCOTOMIC ASSESSMENT IN CROHN’S DISEASE WITH CHRONIC DIARRHEA
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Introduction: Linked Color Imaging (LCI) is a novel image-enhanced endoscopy technique which increases distinctiveness of the mucosal color of endoscopic images. The aim of this study is to investigate the usefulness of LCI to evaluate the activity of mucosal inflammation in ulcerative colitis (UC) patients

Results: 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 were observed by both white light imaging (WLI) and LCI. The Commission international de l’éclairage (CIE) LAB color differences (ΔC) 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. The correlation between ΔC and Mayo endoscopic sub-score was assessed, indicating that the higher ΔC mean easier color difference for recognition.

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 0:3:7. 1. Correlation between CIELAB color differences and history. The mean ΔC of ROI without inflammatory cell infiltration was significantly higher than that of ROI with inflammatory cell infiltration (15.9 ± 4.9 vs. 12.3 ± 6.7, p = 0.046). The mean ΔC was not affected by histological findings of erosions, crypt abscesses, goblet cell depletion, crypt atrophy, crypt distortion, and basal plasmacytosis. LCI distinguished colon mucosal white color compared to WLI with use of three-dimensional color space, indicating the remission-colon mucosa of UC with no inflammatory cell infiltration in ROI was easily detected by LCI. 2. Correlation between CIELAB color differences and Mayo endoscopic subscore. Low Mayo endoscopic subscore tend to be inversely proportional to high ΔC (ΔC = 15.9 ± 4.9 vs. 11.8 ± 5.1, 13.0 ± 6.5, and 9.2 ± 6.6, p = 0.05). There was no statistical association to inflammatory bowel disease patients, however, it is underdiagnosed in clinical practice. 3. ΔC test is the current clinical gold standard for diagnosing bile acid diarrhea widely used in Europe.

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

Reference

P1007 THE ROLE OF SENSE OF COHERENCE IN DETERMINING HEALTH RELATED QUALITY OF LIFE AND DISABILITY IN INFLAMMATORY BOWEL DISEASE
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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 contention is supported by evidence of impaired 3ΔC test at 72 hours and impaired 2ΔC test at 24 hours in patients with established diagnosis of BAM and impaired 1ΔC test at seven days in patients with inflammatory bowel disease. In the present study, we aimed to analyze the associations between sense of coherence (SOC) and health related quality of life (HRQoL) in IBD patients. 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 (higher SOC) have a more effective 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 among water was considered as the most 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 was moderated by the individual’s level of anxiety. Additionally, the correlations between sense of coherence and level of anxiety, as well as self-reported emotional intelligence were also were further evaluated. This is a cross-sectional observational cohort of IBD patients attending MUHC (McGill University Health Centre) (IBD outpatient clinic). The patient population demographics are as follows: mean age (42.4 ± 12.4 years), gender (46.0% male), disease type (58.4% CD, 33.7% UC), disease activity (27.7% active, 63.5% inactive). Patients completed multiple validated questionnaires pertaining to a variety of psychosocial 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 and level of disease (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-
P1008 FAecal AMINO Acid Profiles as Novel Non-Invasive BIomarkers for the Detection of Paediatric inflammatory Bowel Disease: A Metabolomic Approach

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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 'aminoconstagram' 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 naive 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 consistency, the samples were freeze dried for 24 hours before the analysis was performed. To prevent results by peak overlap of different amino acids, outcomes of 5 mmol/l mg or lower were excluded from further analysis.

Results: Faecal samples from 15 subjects (5 healthy, 5 UC, 5 CD) were analysed. Median age was 14 (8–17) years. Subjects and controls were matched on age and sex. A total of 42 different amino acids were analysed, of which 30 were excluded due to quantities of ≤5 mmol/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 (3.31–10.38)</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 (1.07–3.09)</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 (3.07–7.45)</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 (1.25–1.97)</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 (1.27–5.64)</td>
<td>4.62 (2.27–8.40)</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>

*i* levels are displayed in nmol/mg

Conclusion: This was the first pilot study to assess the potential of the faecal aminoconstagram 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

P1009 INFliximab Trough Levels and Antibodies to Infliximab in Association with Disease Activity and Mental Health in Patients with Inflammatory Bowel Disease

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Introduction: Measurement of infliximab trough levels (IFX-TLs) and antibodies to infliximab (ATIs) has been suggested as an important parameter for the optimization of IFTreatment of patients with inflammatory bowel disease (IBD).

Aims & Methods: We aimed to cross-sectionally investigate the correlation between IFX-TLs or ATIs and clinical, biochemical as well as endoscopic activity in Greek IBD patients. Consecutive IBD patients on maintenance treatment with IFX, were included. IFX-TLs and ATIs were measured using ELISA (Eagle Diagnostics, Nashua, NH, USA) on serum samples drawn before infusion. In the same time period of use short IBD questionnaire (SIBDQ) and clinical disease activity using Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD) or simple colitis activity index (SCAI) for ulcerative colitis (UC) were assessed. Moreover, biomarkers (hemoglobin, ESR, CRP, platelets, albumin) were measured and latest colonoscopies (within 6 months) were reviewed and evaluated for presence or not of mucosal healing.

Results: A total of 74 patients receiving IFTreatment maintenance therapy [55 CD, 19 UC, 49 males, mean age 42.3 years, 45 on combination therapy with immunomodulators (IMMs), 10 under intensified dose (either 10 mg/kg/8w or 5 mg/kg/4–6w)] were studied. Median time since IFX initiation was 26 (13–71) months and median value of serum IFX-TL was 4.83 μg/ml (0.03–3.07). Seven out 74 (9.5%) were positive for ATIs (>10 μg/ml). Patients on combination treatment had significantly higher IFX-TLs (6.98 μg/ml, 0.34–3.07) compared to those on IFX alone (1.85 μg/ml, 0.09–2.58) (p = 0.01). Patients with positive ATIs had median IFX-TLs 0.99 μg/ml (0.09–1.40) statistically lower compared to those with negative ATIs (6.01 μg/ml, 0.03–3.69) (p = 0.005). The correlations of IFX-TLs and ATIs with clinical, biochemical and endoscopic indices of disease activity in IBD patients are presented in Table 1. No other significant correlations of IFX-TLs or ATIs with other disease characteristics were observed. In the logistic regression analysis only IFX-TLs (OR 0.86, 95% CI 0.76–0.97 p = 0.017) and duration of IFX treatment (OR 0.97, 95% CI 0.95–0.99 p = 0.04) were independently correlated with the presence of mucosal healing.

Table 1: Correlations of infliximab trough levels and antibodies to infliximab with clinical, biochemical and endoscopic indices of disease activity in patients with inflammatory bowel disease

<table>
<thead>
<tr>
<th>N = 74</th>
<th>Infliximab trough levels (IFX-TLs)</th>
<th>Antibodies to Infliximab (ATIs)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>HBI (CD)</td>
<td>0.11</td>
<td>0.41</td>
</tr>
<tr>
<td>SCAI (UC)</td>
<td>0.18</td>
<td>0.48</td>
</tr>
<tr>
<td>SIBDQ</td>
<td>0.09</td>
<td>0.44</td>
</tr>
<tr>
<td>CRP (mg/dl)</td>
<td>–0.27</td>
<td>0.02</td>
</tr>
<tr>
<td>Hgb (mg/dl)</td>
<td>0.08</td>
<td>0.48</td>
</tr>
<tr>
<td>ESR 1st hour (mm)</td>
<td>0.09</td>
<td>0.42</td>
</tr>
<tr>
<td>PLT (x10^{12}/L)</td>
<td>0.19</td>
<td>0.09</td>
</tr>
<tr>
<td>Alb (mg/dl)</td>
<td>0.03</td>
<td>0.77</td>
</tr>
<tr>
<td>ATIs</td>
<td>–0.34</td>
<td>0.01</td>
</tr>
<tr>
<td>Combined with IMMs</td>
<td>0.25</td>
<td>0.03</td>
</tr>
<tr>
<td>Mucosal healing (N = 53)</td>
<td>0.38</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Conclusion: Therapeutic drug monitoring is valuable in IBD-patients on maintenance IFTreatment. Combination treatment with IFX and IMMs is associated with higher IFX-TLs compared to IFX monotherapy. Higher IFX-TLs are independently associated with the presence of mucosal healing.

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

References
P1001 COMPARATIVE INVESTIGATION OF ENTEROBACTERIA BUSH IN ULCERATIVE COLITIS PATIENTS, AND THEIR CONSANGUINEOUS, AND NON-CONSANGUINEOUS RELATIVES

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Introduction: In recent years, the gut microbiota has been recognized as a relevant fingerprint to predict the development of inflammatory bowel disease (IBD) like ulcerative colitis (UC). Accordingly, inter-individual variation in the gut microbial community may reflect inter-individual variation in the risk of developing IBD or other diseases. Further recently, the Next-Generation Sequencing (NGS) has been validated for determining bacterial species in faecal samples. Essentially, NGS is a molecular biology sequencing technique for the precise identification and assessment of bacterial species.

Aims & Methods: With the major focus of our study being to establish a relevant biomarker of disease activity in UC patients based on the intestinal microbiota, 82 UC patients together with 61 healthy relatives as controls were included for microbial assessment. 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 Lactobacillus and Proteobacillus are increasingly popular and used in all-day patient care.

Aims & Methods: To compare the performance of non-invasive biomarkers to PET/MRI and colonoscopy in patient with UC. In every patient a PET/MRI including the maximum standardized uptake value ratio gut/liver (SUVR) and a colonoscopy including an endoscopy index (EI) was performed within 48 hours and the Disease Activity Index Mayo score (DAI) was calculated. Fecal Lactobacilli (LactobacillusPrevotella, Peptoniphilus) and Calprotectin were measured (Calp), PMN-elastasia (PMN-E), S100A12, Eosiinophil-derived Neurotoxin (EDN) as well as CRP were correlated to the SUVR, the DAI and the EI using correlation analyses. Sensitivity, specificity and diagnostic accuracy were calculated using the optimized cut-offs. All analyses 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 SUVR (r (32)=.45; p<.009), EI and DAI (r (32)=.87; p=.000) as well as DAI and SUVR correlated significantly (r (32)=.40; p=.022). SUVR was correlated significantly with LF (r (32)=.36; p=.046), EDN (r (32)=.49; p=.005), and CRP (r (32)=.36; p=.043), but not with PMN-E, S100A12 and Calp (all p >.05). DAI was correlated significantly with PMN-e (r (32)=.55; p=.001), LF (r (32)=.55; p=.001), EDN (r (32)=.70; p=.000), Calp (r (32)=.46; p=.008) and CRP (r (32)=.56; p=.001), but not with S100A12 and Calp (all p >.05). EI was correlated significantly with PMN-e (r (32)=.61; p=.003), PMN-e (r (32)=.51; p=.003), S100A12 (r (32)=.41; p=.021), Calp (r (32)=.52; p=.002), CRP (r (32)=.44; p=.012), but not with Calp (p >.05). The median values (inactive/active) were: LF: 1.75; 201.3±g/ml; Calp: 60.25/105.60±g/ml; EDN: 68, 43±mg/ml; PMN-e: 83.3%/75.0%/81.25% (CI 62.5%/62.5%/62.5%); PMN-E: 36.1±mg/ml; CALI: 62.5%/62.5%/62.5% (CI 36.7%/36.7%/36.7%); CRP: 0.07/0.19±g/ml; S100A12: 18.82/88.96; Eo: 0.39/2.35±g/ml; 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%/100%); 4, 27±mg/ml; Calp: 62.5%/62.5%/62.5% (CI 38.9%/38.9%/38.9%); EDN: 68, 43±mg/ml; PMN-e: 83.3%/75.0%/81.25% (CI 62.5%/99.9%); 0.085 µg/ml; 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±mg/ml; CRP: 70.8%/75.0%/71.5% (CI 53.5%/94.9%); 0.5 mg/ml.

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 in UC. However, Calprotectin did not perform well. PET/MRI with SUVR were significantly correlated to the SUVR which was significantly correlated with EI and DAI. In conclusion, Lactobacillus and Eosinophil-derived Neurotoxin performed best using endoscopy and PET/MRI as non-invasive biomarkers.

Disclosure of Interest: J. Langhorst: Research grant by Techlab Inc. J.H. Boone: Employee of Techlab 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 Lactoferin, Calprotectin, PMN-Elastase, CRP, Eo 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; Feb 13
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, ATI and MMP3 levels were assessed at t0 and t1 by ELISA. In addition, MMP3 levels were measured 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 healthy controls (13.1 ± 1.3 pg/ml). Patients who lost therapeutic TL but ATI positive showed significantly higher MMP3 levels compared to the group with low TL and ATI positive (33.2 ± 3.0 and 20.0 ± 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 (22.0 ± 2.1 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 are 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 COMBINING BOTH RHEUMATOLOGY AND GASTROENTEROLOGY FOR THE ASSESSMENT AND TREATMENT OF INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: More than one third of inflammatory bowel disease patients (IBD) present recurrences, manifestations, complications or treatment failures. In our hospital, the higher complication rate is ulcerative colitis (UC), which accounts for 20% of our IBD patients.

Methods: A multidisciplinary team composed by a gastroenterologist and a rheumatologist evaluated and discussed in all patients their possible diagnosis and treatment. A multidisciplinary committee with a rheumatologist and a gastroenterologist was 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 treatment. A multidisciplinary committee with a rheumatologist and a gastroenterologist was referred to an experienced rheumatologist. In all patients, a rheumatologic consultation was conducted and all patients were referred to the rheumatology department when indicated.

Results: 112 consecutive IBD patients were remitted from the IBD Unit and changes implemented in their treatments. Patients were women (67%), 19% were smokers and 23% former smokers. 51% presented ulcerative colitis (UC) and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%.

Conclusion: A multidisciplinary consultation combining inflammatory bowel disease and rheumatology allows 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 so it should not be confused with other inflammatory diseases.

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

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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 (AAA) 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 potential association between CD 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

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

Reference
of a value of Crohn’s Disease Endoscopic Index of Severity below 8, so far we included complete MH and a residual activity of a minimal residual endoscopic activity. Endoscopic evaluation was performed within two weeks of blood sampling, and at least after 6 months of ADA treatment.

Results: In our prospective study we enrolled 22 CD patients primary responders to ADA therapy (13 males, median age 43 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 0.0–9.9 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, specificity 100%, sensitivity 81.8%, PPV 84.6, NPV 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 TL and disease activity, development, and outcome. In this specific cohort, a threshold of 6.43 mcg/mL has been identified as the best cut-off to obtain endoscopic remis-
sion or at least a minimal residual endoscopic activity. Moreover, we observed that CD patients on ADA therapy who achieved MH had a lower disease activity outcome. Thus, we support the use 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
Conclusion: The proposed ultrasonic and elastographic string of stricturing CD facilitates the detection and differentiation of fibrotic and inflammatory strictures, helping to choose appropriate surgical treatment.

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

References


P1019 THE INFLAMMATORY BOWEL DISEASE DISABILITY INDEX INFLAMMATORY BOWEL DISEASE RELATIONSHIP WITH DISEASE CHARACTERISTICS AND QUALITY OF LIFE IN A COHORT OF SICILIAN PATIENTS

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Introduction: IBDs are disabling conditions that negatively affect physical, psychological, familial and social dimensions of life. The concept of quantifying disability has been developed for the assessment of many other chronic diseases. Thus, specific tools have been used to assess the impact of disease and its treatment options 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 HRQoL in a cohort of Sicilian patients with ulcerative colitis(UC) and Crohn’s disease (CD) followed up in a referral center.

Aims & Methods: IBDQ 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-Q 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-Brandschaw Index for CD. The mean differences of DI score in relation to dichotomous clinical variables were performed by Student’s t test. By linear regression analysis we assessed also the relationship between DI and IBD-Q. Disease activities were statistically significant if the p value was <0.05.

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). By linear regression analysis, IBD-DI was significantly associated with IBD-Q (R² = 0.573, p < 0.001). Interestingly, 5% (n = 5) of patients with inactive or mild disease had severe disability (>50) and 5% (n = 5) with active disease had low disability (<=25). 54 CD patients (59%, males, median age 41 years) were enrolled; 22% were smokers. 94% had mild disease, 17% severe disease. Concomitant medications at the time of the interview were conventional therapy (5-aminosalicylic acid, oral steroids) in 22 patients (40%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 32 patients (60%). The mean IBD-DI score was 20.17 ± 16.24; 72% of patients had low DI ≤ 25 (39/54) while only 2 patients had high DI > 50. No correlations were found between IBD-DI and disease characteristic, gender, disease duration, disease extension, extraintestinal manifestations and linear regression analysis, IBD-DI was significantly associated with IBD-Q (R² = 0.604; p < 0.001).

Conclusion: Our preliminary results show that the IBD-DI is significantly related to HR-QoL both in UC and CD. In UC IBD-DI is also related to disease activity and present extraintestinal manifestations. However, most of our patients were in clinical remission. A larger sample with different grades of disease activity could provide a more accurate evaluation of the reliability of this tool in measuring functional status and disability in IBD. IBD-DI could become a major end-point in RCTs targeting the course of IBD.

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

P1020 DIPEPTIDYL PEPTIDASE 4 (DPP-4): A BIOMARKER OF DISEASE ACTIVITY AND PROGNOSIS IN INFLAMMATORY BOWEL DISEASE

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Introduction: DPP-4 is a membrane-bound glycoprotein expressed on the cell surface of lymphocytes, monocytes, macrophages and mast cells. 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 for DPP-4 and calprotectin analysis. Disease activity was assessed using 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 used deriving logistic regression to evaluate predictors of disease activity and C-reactive protein (CRP) for DIPM 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.

Conclusion: Median plasma DPP-4 values were lower in active CD vs CD in remission [1043ng/mL, interquartile range (IQR): 824–1345 vs 1519–2237; P = 0.005] while only 2 patients had high DI (≥50) and 5% (n = 10) had low DI (≤25) vs 17 healthy UC and 41% of patients had low DI ≤ 25 (39/54) while only 2 patients had high DI > 50. No correlations were found between IBD-DI and gender, disease duration, disease extension, extraintestinal manifestations and linear regression analysis, IBD-DI was significantly associated with IBD-Q (R² = 0.604; p < 0.001).

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

Reference


P1021 ROLE OF PET-CT TO ASSESS DISEASE ACTIVITY IN ULCEERATIVE COLITIS AND ITS CORRELATION WITH CLINICAL, ENDOSCOPIC, BIOLOGICAL, AND IMMUNOHISTOCHEMICAL MARKERS

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Introduction: Disease activity in ulcerative colitis (UC) is best assessed clinically by Mayo score and endoscopy. Positron emission tomography -computerized 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.

Conclusion: PET-CT is a non-invasive imaging test which is useful in assessing disease activity in UC.

Disclosure of Interest: All authors have declared no conflicts of interest.
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% patients 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 (r = 0.465, p < 0.001), endoscopic sub-score (r = 0.526, p < 0.001), histological score (r = 0.496, p < 0.001) and fecal calprotectin levels (r = 0.279, p = 0.031). Extent evaluation by PET-CT and colonoscopy also showed a significant correlation (r = 0.582, p < 0.001) with each other. We found that CRP at a cut-off level of 5 mg/L had a sensitivity of 70.59% and specificity of 92.3%, and fecal calprotectin at a cut-off level of < 143 g/L had a sensitivity of 82.35% and specificity of 98.46% to predict UC 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

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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 which is run quarterly per annum 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). 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.

Results: The median age was 37 in the CA group and 33 in the NA group. In the CA group, 10 patients had ulcerative colitis (UC), 9 patients had Crohn’s Disease (CD) and 1 patient had unclassified IBD. In the NA group, 13 patients had UC and 7 patients had CD. The median of resource use and patient outcomes over a 12 month period (from diagnosis in the NA group and from clinic attendance in the CA group) is detailed in the table below.

<table>
<thead>
<tr>
<th>Resource use and patient outcomes</th>
<th>NA</th>
<th>CA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steroid courses</td>
<td>0.47</td>
<td>0.51</td>
</tr>
<tr>
<td>Unplanned hospital admissions</td>
<td>0.19</td>
<td>0.21</td>
</tr>
<tr>
<td>IBD telephone helpline consultations</td>
<td>0.24</td>
<td>0.58</td>
</tr>
<tr>
<td>Clinic appointments</td>
<td>3.71</td>
<td>2.84</td>
</tr>
<tr>
<td>Blood tests (excluding essential monitoring blood tests)</td>
<td>5.81</td>
<td>3.68</td>
</tr>
<tr>
<td>Endoscopies</td>
<td>0.33</td>
<td>0.77</td>
</tr>
<tr>
<td>Radiological imaging</td>
<td>0.24</td>
<td>0.16</td>
</tr>
<tr>
<td>Therapy escalation</td>
<td>1.45</td>
<td>1.65</td>
</tr>
</tbody>
</table>

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.

Reference
A PROSPECTIVE STUDY

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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 uncertain.

Aims & Methods: To assess, in a prospective study, the correlation between clinical, endoscopic and histological activity in Inﬂammatory Bowel Disease: a prospective study.

Results: IBD group included 107 pts: 67 (62.6%) UC (M 36 [53.7%], age 50 [24–80] yrs) and 40 (37.4%) CD (M 31 [55.7%], age 47 [24–79]). IBD pts undergoing colonoscopy according to clinical indication were enrolled. Inclusion criteria: 1. Diagnosis of IBD; 2. Age ≥18 and <80 yrs; 3. Regular follow up; 4. Indication for colonoscopy due to macroscopic abnormalities. During colonoscopy, biopsies ≥2 were biopsies were taken from ≥1 macroscopically involved area and, possibly, from ≥1 uninvolved area. Clinical activity was assessed by the Mayo score (activity ≥3) for Ulcerative Colitis (UC) and the CDAI (activity ≥150) for Crohn’s Disease (CD) pts. All colonscopies were performed by one IBD-dedicated gastroenterologist. Endoscopic activity was assessed in UC pts by the Mayo score (activity ≥2), and in CD by the Rutgeerts’ score (recurrence ≥2.3) or the SES-CD (activity ≥5.4), according to previous surveys. Histological activity was assessed by one pathologist using the Global Histologic Activity Score (GHAS) for CD (S) or the Geboes simplified score for UC (activity ≥1.6). Each of the 3 investigators was blind regarding the other results. Statistical analysis. Data expressed as median [range].

Results: IBD group included 107 pts. 67 (62.6%) UC (M 36 [53.7%], age 50 [24–80] yrs), 40 (37.4%) CD (M 31 [55.7%], age 47 [24–79]). IBD pts undergoing colonoscopy according to clinical indication were enrolled. Inclusion criteria: 1. Diagnosis of IBD; 2. Age ≥18 and <80 yrs; 3. Regular follow up; 4. Indication for colonoscopy due to macroscopic abnormalities. During colonoscopy, biopsies ≥2 were biopsies were taken from ≥1 macroscopically involved area and, possibly, from ≥1 uninvolved area. Clinical activity was assessed by the Mayo score (activity ≥3) for Ulcerative Colitis (UC) and the CDAI (activity ≥150) for Crohn’s Disease (CD) pts. All colonscopies were performed by one IBD-dedicated gastroenterologist. Endoscopic activity was assessed in UC pts by the Mayo score (activity ≥2), and in CD by the Rutgeerts’ score (recurrence ≥2.3) or the SES-CD (activity ≥5.4), according to previous surveys. Histological activity was assessed by one pathologist using the Global Histologic Activity Score (GHAS) for CD (S) or the Geboes simplified score for UC (activity ≥1.6). Each of the 3 investigators was blind regarding the other results. Statistical analysis. Data expressed as median [range].

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References:
active in 5 (12%), in remission in 35 (88%) pts. Endoscopic activity: CD. Complete mucosal healing was achieved in 24 pts. In the 34 pts with no previous surgery, SES-CED was: 0 (n = 4), 3 (n = 1), 4 (n = 3), 6 (n = 2); 8 (n = 3); 9 (n = 2); 10 (n = 1); 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 Rutgers’ 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 = 3); 10 (n = 1) in pts without previous surgery, and 0 (n = 3); 1 (n = 1); 2 (n = 1); 10 (n = 1) in pts with previous surgery in CD, the histological score showed a slightly significant correlation with SES-CED (r = 0.41 [p = 0.046] and no correlation with the Rutgers’ score (r = 0.31 [p = 0.247]).

Conclusion: In a prospective study, a significant correlation was observed between clinically, 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.

Disclosure of Interest: L. Biancone: The study was not supported by grants nor funding. The report’s disclosures are not related to the study: L. Biancone
Contact Lecture fees: MSD, Takeda, Abbbvie, Zambron. A. Armuzi Lecture fees: Abbbvie, All other authors have declared no conflicts of interest.

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6. Aurregui-Amegaza A. JCC. 2011;305

Table 1: Continued

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Drug Mean Concentration (ng/mL)</th>
<th>% with</th>
<th>Undetectable Drug (&lt;0.4 ng/mL)</th>
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<tr>
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<td>701-1000</td>
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<tr>
<td>Anti-Infliximab</td>
<td>1001-2000</td>
<td>1246</td>
<td>1.0</td>
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<tr>
<td>Anti-Infliximab</td>
<td>2001-4000</td>
<td>575</td>
<td>0.4</td>
</tr>
<tr>
<td>Anti-Infliximab</td>
<td>4001-3.5 million</td>
<td>572</td>
<td>0.4</td>
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</table>

Table 2: Anti-Adalimumab Antibody Distribution and Corresponding Mean Free Drug Levels

<table>
<thead>
<tr>
<th>Antibody Concentration (ng/mL)</th>
<th>n</th>
<th>Mean Drug Concentration (ng/mL)</th>
<th>% with Undetectable Drug (&lt;0.4 ng/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-Adalimumab</td>
<td>0-25</td>
<td>10784</td>
<td>5.6</td>
</tr>
<tr>
<td>Anti-Adalimumab</td>
<td>25-100</td>
<td>3904</td>
<td>5.6</td>
</tr>
<tr>
<td>Anti-Adalimumab</td>
<td>100-200</td>
<td>1144</td>
<td>4.3</td>
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<td>Anti-Adalimumab</td>
<td>200-300</td>
<td>370</td>
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<td>Anti-Adalimumab</td>
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<td>330</td>
<td>1.1</td>
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<tr>
<td>Anti-Adalimumab</td>
<td>700-1000</td>
<td>303</td>
<td>0.7</td>
</tr>
<tr>
<td>Anti-Adalimumab</td>
<td>1000-2000</td>
<td>496</td>
<td>0.6</td>
</tr>
<tr>
<td>Anti-Adalimumab</td>
<td>2000-4000</td>
<td>394</td>
<td>0.6</td>
</tr>
<tr>
<td>Anti-Adalimumab</td>
<td>4000-8000</td>
<td>610</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Conclusion: Upon analysis of 57,861 infliximab and adalimumab patient samples from 2012–2016, 43% exhibited anti-drug antibodies. We found that low-titer antibodies do not appear to impact drug levels. Our findings are consistent with American Gastroenterological Association Critical Care Pathways for Crohn’s Disease IV, Ulcerative Colitis, and Crohn’s Disease scoring criteria where high antibody levels are managed very differently (increase drug/consider immunomodulator vs. switch drug within class). High resolution antibody assays may be helpful in dosing TNF inhibitors and in other treatment and management decisions.

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

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<td>Anti-Infliximab</td>
<td>0-250</td>
<td>10784</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
which IM therapy is used concomitantly with VDZ and potential impact on outcomes in real-world clinical practice.

**Disclosure of Interest:** M. Rauly Callado: Mirwia 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 Immunity Consulting Inc., which received funding from Takeda Development Centre Ltd.

**P1029 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE**

C. Monast1, K. Li2, E. Myslik3, C. Brodmerkel3, J. Friedman4, F. Baribaud5

1 Janssen Research & Development, LLC, Spring House/United States of America
2 Clarivate Analytics, Boston/United States of America/MA

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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 activity in rectum or splenic flexure biopsies. This model was characterized by \( R^2 = 0.78 \) for the training set, and \( R^2 = 0.59, 0.54, \) 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 \( R^2 = 0.5 \) for the training set and \( R^2 = 0.64 \) in the external validation set. In general, both models contained genes related to tissue degradation, barrier function, and immune regulation, including CXCL11 (IL-7R-A). 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 transcriptionomics 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. Myslik: Consultant to Janssen Research & Development, LLC

C. Brodmerkel: Janssen Research & Development, LLC employee

J. Friedman: Janssen Research & Development, LLC employee

F. Baribaud: Janssen Research & Development, LLC employee

**Reference**


**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. Mesana1, M. Pacou2, D. Naessens3, S. Sloan4, A. Gauthier1

1 Amaris, London/United Kingdom
2 Amaris, Paris/France
3 Janssen Pharmaceutica, Beerse/Belgium
4 Janssen Global Services, Horsham/United States of America/PA

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 treatment sequence analysis builds on previous work1 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 probability 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

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**Abstract: P1028. Table 1:** Characteristics and outcomes among patients newly started on vedolizumab stratified by IBD type and history of immunosuppressive therapy

<table>
<thead>
<tr>
<th></th>
<th>CD (N = 388)</th>
<th>UC (N = 179)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<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>
<td>47 (14.7)</td>
</tr>
<tr>
<td>Female, %</td>
<td>64.9%</td>
<td>59.5%</td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis to VDZ initiation, years</td>
<td>6.0 (3.9)</td>
<td>4.2 (3.4)</td>
</tr>
<tr>
<td>Pre-index exposure to anti-TNF therapy, %</td>
<td>78.2%</td>
<td>55.2%</td>
</tr>
<tr>
<td>IBD-related measures in the 365 days pre-index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>42.2%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Surgeries</td>
<td>18.7%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Flares</td>
<td>56.9%</td>
<td>43.6%</td>
</tr>
<tr>
<td>IBD-related measures in the 365 day follow-up period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>24.9%</td>
<td>20.2%</td>
</tr>
<tr>
<td>Surgeries</td>
<td>12.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Flares</td>
<td>43.6%</td>
<td>32.5%</td>
</tr>
</tbody>
</table>

Note: IM therapy included use of azathioprine, 6-mercaptopurine, methotrexate, mycophenolate mofetil, cyclosporine, and Tacrolimus

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. Gauthier5

1Amaris, London/United Kingdom
2Amaris, Paris/France
3Janssen Scientific Affairs, Beerse/Belgium
4Janssen Global Services, Horsham/United States of America/Pa

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 treatment sequence analysis builds on previous work proposing a solution to methodological issues inherent to CD trial data. In CD patients having failed anti-TNF therapy, ustekinumab had higher likelihoods 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.


P1032 EFFICACY AND TOLERABILITY OF INITIATING, OR SWITCHING TO, INFILXIMAB BIOSIMILAR CT-P13 IN INFILXIMAB-BASED BIOLOGY DISEASE (IBD): A LARGE SINGLE-CENTRE EXPERIENCE


Gastroenterology, Leeds Teaching Hospital, Leeds/United Kingdom

Contact E-mail Address: raguprakash.ratnakumar@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 withswitches to CT-P13 with annual savings £1million in savings.

Results: 53 patients commenced IFX in the 12 months pre-Feb 2016 (26 Crohn’s Disease (CD), 13 fistulating CD, 13 Ulcerative Colitis (UC), 1 IBD-Unclassified) compared with 69 patients who commenced CT-P13 in the subsequent 12 months (22CD, 9 fistulating CD, 35UC, 3BD-U). In patients who initiated IFX in the 12 months pre-Feb 2016 and 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.

Conclusion: There was no difference in response (12(23%) v 15 (21.74%) (p = 0.005)), secondary loss of response (12(23%) v 15(21.74%) (p = 0.905)), or adverse events (6(11%) v 6(10%) (p = 0.629)) in those who initiated originator IFX compared with CT-P13.

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

P1033 SAFETY AND EFFICACY OF HELICOBACTER PYLORI ERADICATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

S. Shinzaki1, T. Fuji2, S. Bamba1, T. Kobayashi1, H. Tanaka2, T. Yoshino6, A. Yamada1, N. Kamata2, 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 Res Inflammatory Bowel Disease, Kitasato Institute Kitasato Institute Hospital, Tokyo/Japan
5IBD Center, Sapporo Kosei General Hospital, Sapporo/Japan

Background: Recently, the infliximab (IFX) biosimilar (CT-P13) received market authorisation for IBD allowing cost benefits with switches to CT-P13 with annual savings £1million in savings.

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Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Low prevalence of _Helicobacter pylori_ (HP) infection has been recently reported in inflammatory bowel disease (IBD). However, it is unclear whether the eradication therapy for HP can exacerbate disease activity of IBD. We then aimed to clarify the safety and efficacy of HP eradication in patients with IBD.

Aims & Methods: This was a multicenter, retrospective cohort study in 26 institutions. Patients who eradicated HP by proton pump inhibitor and amoxicillin-based triple therapy after the diagnosis of IBD (ulcerative colitis (UC) or Crohn’s disease (CD)) from March 2005 to July 2015 were enrolled. Two IBD patients without prior HP infection whose gender, age at diagnosis, severity, and observation period were matched with each HP-eradicated patient were enrolled in the same institution. Disease activity of IBD at baseline, 2 and 6 months after eradication (eradication) was investigated. Eradication of IBD was defined as increase/addition of IBD drug, IBD-associated hospitalization or surgery; and physicians’ assessment was also analyzed. Factors associated with exacerbation of IBD were assessed by univariate and multivariate logistic regression analysis.

Results: A total of 429 IBD (378 UC and 51 CD) patients, including 144 patients who eradicated HP (eradication group) and 285 control patients (non-eradication group), were enrolled. IBD exacerbation rates in 2 and 6 months of observation were 16.2% (24/144) and 11.8% (17/144) in eradication group, which showed no significant differences compared with those of 4.9% (14/285) and 7.7% (22/285) in non-eradication group. Physicians’ assessment showed similar results in terms of disease exacerbation, but in 2 months of observation no patient was improved in eradication group whereas 3.2% (9/285) of patients was improved in non-eradication group (P = 0.019). Multivariate analysis revealed that the independent factor of IBD exacerbation after HP eradication was active disease at baseline (OR 5.3 (95%CI: 1.5–16.9), P = 0.011). HP was eradicated in 82.9% (102/123) of patients using clarithromycin as first-line treatment and 90.4% (19/21) using metronidazole as second-line, both of which were comparable with previous reports in non-IBD patients.

Conclusion: HP eradication therapy does not exacerbate disease activity of IBD without affecting active disease but may improve disease activity, suggesting that careful observation is necessary after eradication, especially for patients with active disease.

Disclosure of Interest: S. Shinkazi: I have received lecture fees from Mitsubishi Tanabe Pharma, Abbvie, EA Pharma, and Eisai. T. Fujii: T. Fujii has received a research grant from Eisai, and lecture fees from Mitsubishi Tanabe Pharma, Abbvie, EA Pharma, and Eisai. S. Bamba: Received lecture fees from Mitsubishi Tanabe Pharma, Abbvie, and EA Pharma. T. Kobayashi: Received grants research and lecture fees from Mitsubishi Tanabe Pharma and Eisai; research grant from Otsuka Pharmaceutical; lecture fees from Abbvie, Zeria Pharmaceutical, JIMRO, and Ajinomoto Pharmaceuticals; and consulting fees from Nepton Kiyasaki. H. Tanaka: Received lecture fees from Mitsubishi Tanabe Pharma, Abbvie, EA Pharma, and Eisai. A. Yamanoi: Received lecture fees from Abbvie, and EA Pharma. T. Hibi: Received advisory and lecture fees from Zeria Pharmaceutical; advisory fees from Eisai, consulting fees from Abbvie, AstraZeneca Pharmaceuticals, EA Pharma, and Takeda Pharmaceutical; and lecture fees from JIMRO and Mitsubishi Tanabe Pharma. All other authors have declared no conflicts of interest.

**P1034 EVALUATION OF PHARMACOKINETIC PROFILES OF SB2 AS A BIOSIMILAR OF REFERENCE INFlixIMAB**

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Samsung Bioepis Co., Ltd., Incheon/Korea, Republic of

Contact E-mail Address: sr6427.lee@samsung.com

Introduction: Based on the totality of evidence with similar analytical, pharmacokinetic (PK) and clinical results, SB2 was approved by European Medicines Agency and U.S. Food and Drug Administration as a biosimilar of the reference infliximab (INF) for all indications for which INF has been approved. Here we report the PK profiles of SB2 compared to that of INF in two animal models, healthy subjects and patients with rheumatoid arthritis (RA).

**Aims & Methods:** The pre-clinical PK profiles were evaluated in single and repeated dose studies (1, 3, and 10 mg/kg of SB2, European Union sourced INF [EU-INF] or United States sourced INF [US-INF]) in two animal models (Sprague Dawley [BD] rat and transgenic Tg19 mouse). The Phase 1 clinical study for PK was conducted in healthy subjects at 1, 3, and 10 mg/kg. Healthy subjects were enrolled in a single 5 mg/kg intravenous infusion of study drugs (SB2, EU-INF or US-INF) and were observed for 10 weeks. PK equivalence was to be concluded if the 90% confidence interval (CI) for the ratio geometric least squares mean (LSMeans) of the primary PK parameters endpoints for SB2 to INF was within 80% to 125% during the concentration-time curve [AUC(0–INF)] from time zero to infinity [AUC(0–t)]. AUC from time zero to the last quantifiable concentration [AUC(last)] and maximum concentration [C(max)] were within the standard equivalence margin of 0.8 to 1.25. The steady state PK profile was assessed in a Phase III study in RA patients2. In this study, the patients received 3 mg/kg of SB2 or EU-INF at weeks 0, 2, and 4 every 28 days.

**Results:** In pre-clinical studies, a single intravenous infusion of SB2 was comparable to INF in PK parameters for both species. In a repeated dose study in healthy subjects, SB2 and INF were observed for 10 weeks. PK equivalence was to be concluded if the 90% confidence interval (CI) for the ratio geometric least squares mean (LSMeans) of the primary PK parameters endpoints for SB2 to INF was within 80% to 125% during the concentration-time curve [AUC(0–INF)] from time zero to infinity [AUC(0–t)]. AUC from time zero to the last quantifiable concentration [AUC(last)] and maximum concentration [C(max)] were within the standard equivalence margin of 0.8 to 1.25. The steady state PK profile was assessed in a Phase III study in RA patients2. In this study, the patients received 3 mg/kg of SB2 or EU-INF at weeks 0, 2, and 4 every 28 days.

**Conclusion:** The PK profiles of SB2 evaluated in single and repeated dose studies showed no significant differences in C(max) and AUC(last) between SB2, EU-INF and US-INF.***
Introduction: According to infliximab (IFX) license in inflammatory bowel disease (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 pre-determined 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) between IFX DB as compared to those treated with IFX WBD. 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 pre-prepared at the pharmacy, 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 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, reattributed and wasted 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 ± 32 min in the DBW 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 these three infusions could be reattributed to other patients, saving 2801 €.

Conclusion: When used routinely in IBD, IFX DB is associated with a shortened length of hospitalisation stay 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.

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

Reference

P1037  RAPIDITY OF ONSET OF RESPONSE TO ADALIMUMAB (ADA) IN LUMINAL CROHN’S DISEASE (CD), DATA FROM RAPIDIA TRIAL


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9Hospital General Universitario de Valencia, Valencia/Spain
10Abbot; SLV: Madrid/Spain
11Hospital Clinico Universitario de Santiago, Santiago de Compostela, Santiago de Compostela/Spain
12Abbot; Merck; Celltrion, and Takeda, and speaker fees from MSD, Kern Pharma, and Takeda.
13Department Of Gastroenterology, Hospital Universitario Dr. Josep Trueta, Girona/Spain
14Department De Gastroenterología, Hospital Universitario La Paz, Madrid/Spain

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Introduction: Rapidity of response to treatment in CD is now considered a field of major interest, due to the importance of achieving the highest benefit in the shortest possible time. There are no studies specifically designed to evaluate the rapidity of response to ADA neither other anti-TNF therapies. The aim of this trial was to evaluate the rapidity of onset of clinical response to ADA therapy.

Aims & Methods: Adult anti-TNF naïve patients with active luminal (Harvey-Bradshaw Index (HBI) > =8) moderate-to-severe CD (excluding penetrating and structuring disease), with no response to a full and adequate course of therapy with corticosteroids and/or immunosuppressants, were enrolled in this observational, prospective, open label, single arm and multicenter clinical trial. Patients received standardized ADA treatment (160 mg – 80 mg – 40 mg every 2 weeks). The HBI was evaluated to determine the response at day 4 and week 1; and clinical remission at weeks 2, 4 and 12. Response was defined as a decrease of, at least, 3 points in the HBI global score and remission was defined as HBI global score < 5. CRP (C Reactive Protein) and fecal calprotectin (FC) were analyzed at baseline, day 4, week 1, 2, 4, 12. The modified intention to treat (mITT) population was the primary population for efficacy analysis and consisted of those patients enrolled in the study who had received at least one dose of ADA. Treatment-emergent serious adverse events (AEs) were recorded to assess safety throughout the study until 70 days after last treatment dose. All patients who received at least one dose of ADA were included in the safety population.

Statistical analyses were performed by the t-test or the Wilcoxon signed rank test, as applicable. Time to clinical response was analyzed using a Kaplan-Meier survival analysis model.

Results: 86 anti-TNF naïve patients were analyzed. A response at day 4 and week 1 was experienced by 60.5% and 74.4% of patients, respectively. Remission was achieved by 53.5% of patients at week 2, 61.6% at week 4 and 54.7% at week 12. The median time to obtain response was 4 days (95% confidence interval (CI): 1.0, 4.0) and the median time to remission was 7 days (95%CI: 4.0, 14.0).

During the study, 42.5% of the patients suffered from any adverse event (AE). Only 3 patients (3.5%) showed a serious AE.

Conclusion: ADA produces rapid clinical remission and response since day 4 in patients with moderate-to-severe CD unresponsive to therapy with corticosteroids and/or immunosuppressants.

Disclosure of Interest: F. Casellas: Dr. Francesc Casellas has received research funding from AbbVie, MSD, Shire, Ferring and Zambon.

M. Esteve: Dr Esteve has served as a consultant for Abbvie, MSD, Takeda and Tillots Pharma and has received speaker fees from MSD and Abbvie

S. García-López: Dr. Santiago García has received research and funding from AbbVie, MSD, Shire, FAES and Ferring and has served occasionally as a consultant for Abbvie and MSD.

A. Echarri: Dr Ana Echarri has received research funding from Abbvie and Shire, and speaker fees from Abbvie, Takeda, MSD, Pfizer.

M. Martín-Arranz: Dra. Martín Arranz has served as consultant for Abbvie, MSD, Ferring and has received speaker fees from Abbvie, MSD, Ferring, Chiesi, Tillots.

M. Navarro-Llavat: Dr. Merec Navarro-Llavat has received research funding from Abbvie and speaker fees from Abbvie, Msd, Shire, Pfizer, F. Argüelles-Arias: Dr. FAA has served as a consultant for AbbVie, MSD, Kern Pharma, Celltrion, and Takeda Also, has received research funding fromMsd, Kern Pharma, Celltrion, and Takeda, and speaker fees from MSD, Kern Pharma, Celltrion, and Takeda.

Median CRP levels (mg/L) Median FC levels (µg/g) p-value vs baseline for CRP and FC

Baseline 4.87 795 p < 0.0001
Day 4 1.70 430 p < 0.0001
Week 1 1.50 431 p < 0.0001
Week 2 1.56 419 p < 0.0001
Week 4 1.98 296 p < 0.0001
Week 12 1.68 300 p < 0.0001
P1038 HIGH-DOSE INTRAVENOUS IRON ISOMALTOSIDE IN PATIENTS WITH GASTROINTESTINAL DISEASES

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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 IBD 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>Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1000 mg iron isomaltoside N = 199</td>
<td>&gt;1000 mg iron isomaltoside N = 158</td>
</tr>
<tr>
<td>Flushing</td>
<td>3.0</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
</tr>
<tr>
<td>Increased hepatic enzyme</td>
<td>1.5</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>0.5</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>0</td>
</tr>
<tr>
<td>Headache</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypersensitivity</td>
<td>1.0</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypotension</td>
<td>1.0</td>
</tr>
<tr>
<td>Nausea</td>
<td>1.0</td>
</tr>
<tr>
<td>Urticaria</td>
<td>1.0</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 2.32 (0.13) g/dL to week 8. In patients dosed 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-dependent 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. Dahlérup: The investigator/institution received a fee per patient. W. Reinisch: The investigator/institution received a fee per patient.

References

P1039 EFFICACY AND SAFETY OF GOLUMUMAB IN ULCERATIVE COLITIS. PRELIMINARY DATA FROM A MULTICENTER ITALIAN STUDY

11) was 53%. Among the 85 responder patients, 67 (79%) have been treated with Infliximab (n = 19), while 7 have been treated with both infliximab and Golimumab (n = 7). The indications for Golimumab were:

- Non-responding or intolerant to anti TNF alpha (n = 11)
- Naïve to anti TNF alpha, while 65 have been treated with Infliximab (n = 25)
- Infliximab bioequivariance (n = 24)
- Infliximab resistance (n = 18)
- Infliximab and 250 mg/kg (IQR 174–500). One hundred twenty five patients (66%) were treated with 1000 mg and 250 mg/kg (IQR 174–500). One hundred twenty five patients (66%) were treated with 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.

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.
**P1040 OUTCOMES OF PATIENTS IN REMISSION WITH INFLAMMATORY BOWEL DISEASE WITH UNDETECTABLE INFlixIMAB TROUGH LEVELS AND POSITIVE ANTIBODIES TO INFlixIMAB**

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**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 of 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 of this cohort, patients should be switched to an alternative biologic if duration of IFX 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 immunoassay tests (Biohit, UK). Relapse was defined as worsening of symptoms attributable to the inflammatory bowel disease, requiring an alteration in treatment. Kaplan-Meier with Tarone-Ware test was used to calculate survival curves for regression analysis used to analyse the impact of the different treatment decision on the rate of relapse.

**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 AUC(0–t) and Cmax were as follows: ABP 710, 335.59 ± 123.23 mg·h/L; infliximab EU, 370.68 ± 121.19 mg·h/L; infliximab US, 351.77 ± 121.54 mg·h/L; and adjusted LS GM (90% CI) for AUC(0–t) and Cmax between ABP 710 and infliximab US were 0.996 (0.9042, 1.0067) and 1.021 (0.9624, 1.0827) and that between ABP 710 and infliximab US were 0.894 (0.8122, 0.9848) and 0.972 (0.9167, 1.0301). The ratios of adjusted LS GM (90% CIs) of Cmax and C0–t between infliximab US 86.40%, 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 (Day 57), 40% subjects in the ABP 710, 27% of subjects in 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, and the benefits and risks in terms of safety, and immunogenicity profiles were comparable among treatment groups, as well as between infliximab, ABP 710 and infliximab US following a single 5 mg/kg IV infusion in healthy subjects.

**Disclosure of Interest:** V. Chow: I am a full time employee and stockholder of Amgen Inc

N. Zhang: I am a full time employee and stockholder of Amgen Inc

P. Kaur: I am a full time employee and stockholder of Amgen Inc

A. Kalyaperumal: I am a full time employee and stockholder of Amgen Inc

E. Krishnan: I am a full time employee and stockholder of Amgen Inc

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**P1041 PHARMACOKINETIC SIMILARITY OF ABP 710 TO INFlixIMAB: RESULTS FROM A SINGLE-BLIND, SINGLE-DOSE, PARALLEL-GROUP STUDY IN HEALTHY SUBJECTS**

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**Introduction:** ABP 710 is being developed as a biosimilar to infliximab, an anti-tumour necrosis factor monoclonal antibody. Analytical and functional comparability between infliximab ABP 710 and infliximab US have been completed. This report describes the results of a Phase 1 pharmacokinetic (PK) equivalence study comparing ABP 710 with infliximab.

**Aims & Methods:** This was a single-blind, single-dose, 3-arm, parallel-group study in healthy adults, 18-45 years of age and with a body mass index of 18 to 30 kg/m². Subjects were randomised to receive a 5 mg/kg intravenous (IV) infusion of ABP 710 or infliximab sourced from the EU and the US after pre-treatment with an antihistamine and acetaminophen 30 minutes prior to start of infusion. The primary objective was demonstration of PK similarity of ABP 710 with infliximab EU and with infliximab US based on area under the serum concentration-time curve from time 0 to infinity (AUC(0–∞)) as the primary endpoint. The criteria to achieve PK equivalence were for geometric mean (GM) ratio and its 90% confidence interval (CI) to be within the range of 0.80 to 1.25. Secondary endpoints included maximum observed serum concentration (Cmax), safety, and immunogenicity.

**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 AUC(0–t) and Cmax were as follows: ABP 710, 335.59 ± 123.23 mg·h/L and 123.23 mg/L; infliximab EU, 370.68 ± 121.19 mg·h/L and 121.19 mg/L; infliximab US, 351.77 ± 121.54 mg·h/L and 121.54 mg/L; and adjusted LS GM (90% CI) for AUC(0–t) and Cmax between ABP 710 and infliximab US were 0.996 (0.9042, 1.0067) and 1.021 (0.9624, 1.0827) and that between ABP 710 and infliximab US were 0.894 (0.8122, 0.9848) and 0.972 (0.9167, 1.0301). The ratios of adjusted LS GM (90% CIs) of Cmax and C0–t between infliximab US and infliximab EU were 1.113 (1.0115, 1.2252) and 1.05 (0.9960, 1.1338). The 90% CIs of these ratios were fully contained within the 0.80 to 1.25 interval, confirming PK similarity between ABP 710 and infliximab, as well as between infliximab EU and infliximab US. 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 polyarthritis 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: 83.7%; infliximab US: 86.40%), 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 (Day 57), 40% subjects in the ABP 710, 27% of subjects in 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, and the benefits and risks in terms of safety, and immunogenicity profiles were comparable among treatment groups, as well as between infliximab, ABP 710 and infliximab US following a single 5 mg/kg IV infusion in healthy subjects. The safety and immunogenicity profiles were comparable among treatment groups, as well as between infliximab, ABP 710 and infliximab US following a single 5 mg/kg IV infusion in healthy subjects.

**Disclosure of Interest:** V. Chow: I am a full time employee and stockholder of Amgen Inc

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**P1042 EPIDEMIOLOGY AND BURDEN OF COMPLEX PERIANAL FISTULAS IN PATIENTS WITH CROHN DISEASE– A SYSTEMATIC LITERATURE REVIEW**

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**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
VITAMIN D IS RELATED TO THE EFFECTS OF ANTI-TNF TREATMENT IN CROHN’S DISEASE PATIENTS

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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 have 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 < 30 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 in the last 6 months. 30 patients were randomized. Patients were submitted to a questionnaire of sun exposure, quality of life (IBDQ), clinical examination, VD dosage, C-reactive protein (CRP), fecal calprotectin (FC) and were divided into three groups: 1 Group (G1): 10 patients receiving 2,000 U/VD, VO/week for 8 weeks. 2 Group (G2): 10 patients receiving 5,000 U/VD, VO/week for 8 weeks. 3 Group (G3): 10 patients receiving 10,000 U/VD, VO/week for 8 weeks. At the end of 8 weeks the patients answered IBDQ and were submitted to VD, FC and CRP dosage. All patients were followed for 52 weeks and checked for disease activity recurrence (CDAI > 150, FC > 300, CT scan, CRP and VD levels.

Results: IBDQ improvement was observed in all groups with statistically significant results in G2 (p = 0.04) and G3 (p = 0.01). Increased VD were observed in all groups (median SD × mean ± SD): G1 - (19.5 ± 5.1 ± 26 ± 6.7) p = 0.07; G2 - (19.1 ± 4.1 ± 26 ± 5.8) p = 0.04; G3 -19.5 ± 6.4 ± 46.4 ± (12.7) p < 0.0001. CRP dosage were reduced, although not statistically significant, at G2 and G3 (5.8 ± 4 ± 3 ± 9.2 ± 8) p = 0.18 (5.2 ± 7.3 ± 2 ± 4.3 ± 6) p = 0.2; and increased in G1 (8.1 ± 10 ± 3 ± 13 ± 4 ± 19.9) p = 0.3. There was a significant decrease in FC in G3 (1014 ± 850 ± 483 ± 564) p = 0.04, no significant decrease in G2 (767 ± 751 ± 823 ± 535) p = 0.2, and increase in G1 (1101 ± 744 ± 1357 ± 819) p = 0.4. 92% were follow up showed that recurrent disease activity was predominat in patients with VD < 30 (p = 0.0004) and statically significant results were observed in disease activity recurrence rate (p = 0.006), FC (p = 0.02) and CRP (p = 0.01) when compared patients with VD > 30 and VD < 30.

Conclusion: 50,000 U/week was the best dosage for VD replacement and is related to immunomodulation. Most of patients with CD in Anti-TNF therapy have recurrent disease when VD < 30 and a high remission rate with VD > 30. VD levels are related to the effects of Anti-TNF therapy in CD patients.

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

Abstract: P1042

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of patients per study (range)</th>
<th>Number of patients</th>
<th>Relapse/recurrence</th>
<th>Number of studies</th>
<th>Number of patients per study (range)</th>
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<tr>
<td>Anti-TNF-α agents (agent unspecified)</td>
<td>46–60</td>
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<td>39–66</td>
<td>27</td>
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<tr>
<td>Infliximab</td>
<td>12–58</td>
<td>4</td>
<td>6–52</td>
<td>41</td>
<td>1</td>
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<tr>
<td>Adalimumab</td>
<td>22–73</td>
<td>4</td>
<td>5–38</td>
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<td>1</td>
</tr>
<tr>
<td>Surgical interventions</td>
<td>0–69</td>
<td>10</td>
<td>5–40</td>
<td>13–20</td>
<td>3</td>
</tr>
<tr>
<td>Combined medical and surgical management</td>
<td>0–80</td>
<td>15</td>
<td>9–212</td>
<td>0–41</td>
<td>7</td>
</tr>
</tbody>
</table>

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 (SWEIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. Univariate 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.
PI0106  EARLY IMPROVEMENT IN QUALITY OF LIFE IN PATIENTS WITH LUMINAL CROHN’S DISEASE TREATED WITH ADA/LUMINUMAB. DATA FROM RAPIDA TRIAL

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Introduction: Clinical response and patient’s quality of life improve as a result of the direct benefit of Crohn’s disease (CD) effective treatment. Rapidity of response to treatment in CD is a field of major interest, due to the importance of achieving the quickest possible clinical benefit in the shortest possible time. There are no studies specifically designed for early evaluation of the quality of life in patients with active CD receiving adalimumab therapy. The aim of this study was to evaluate the rapidity of improvement of quality of life in response to adalimumab therapy in adult anti-TNF naïve patients with active luminal (Harvey-Bradshaw Index ≥8) moderate-to-severe CD, and with no response to a full and adequate course of therapy with corticosteroids and/or immunosuppressants. Aims & Methods: To this purpose we designed an interventionnal, prospective, open label, single arm and multicenter clinical trial. Quality of life was evaluated by using the validated questionnaires EuroQol-5D (EQ-5D-5L) and the 36 items version of the Inflammatory Bowel Disease Questionnaire (IBDQ-36). Questionnaires were administered at baseline, day 4 and weeks 1, 2, 4 and 12 without standardized adalimumab treatment (160 mg – 80 mg – 40 mg every other month). The modified intention to treat (miITT) population was the primary population for analysis and consisted of those patients enrolled in the study who had received at least one dose of adalimumab. Statistical analyses were performed by the t-test or the Wilcoxon signed rank test, as applicable.

Results: Eighty-six patients were included. At baseline, the median EQ-5D index score was 0.68. EQ-5D scores improved significantly versus baseline, at day 4 and weeks 1, 2 and 12, with median changes of 0.05 (p = 0.0005), 0.05 (p < 0.0001), 0.05 (p = 0.0001) and 0.11 (p < 0.0001), respectively. Similarly, EQ-5D VAS median scores also improved significantly, compared to baseline (median score at baseline: 55.00), at day 4 and thereafter, with median changes of 5.00, 5.50, 9.50, 10.00 and 12.00, respectively (p < 0.0001 at all time-points). The SIBDQ versus baseline, the IBDQ-36 overall score (median score at baseline: 142.50) at day 4 and weeks 1, 2, 4 and 12, also yielded statistically significant differences, with median improvements of 14.0, 18.0, 29.0, 42.0 and 35.5 respectively (p < 0.0001 at all time-points). Restoration of normal health (IBDQ-36 score ≥29) was obtained in 9% of patients at day 4 and increased to 35% at week 12.

Conclusion: Adalimumab produces rapid improvement of quality of life since day 4 in patients with moderate-to-severe Crohn’s disease.

PI0107  EVALUATION OF QUALITY OF LIFE IN IBD PATIENTS TREATED WITH ANTI-TNF THERAPY

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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 2014 to 2015 at Padua 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). We compared patients treated with IFX or ADA after 12 months from the anti-TNFα introduction and 12 months thereafter. QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IDQ).

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, UC/CD 42/40). Forty, 42 patients started IFX and ADA, respectively. QoL was significantly higher in CD than UC at baseline (median S-IDQ 49 vs 32, p = 0.004). In CD patients, anti-TNFα 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-IDQ 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 4 vs 3, p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL, p = 0.006), fecal calprotectin (median 1600 vs 108 g/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L, p = 0.08). QoL improved at 12 months (median S-IDQ 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.

PI0108  ENDOSCOPIC AND HISTOLOGIC FINDINGS CORRELATE WITH FREE INFILXIMAB FOUND IN UNINFLAMED TISSUE IN IBD PATIENTS

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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 site of these agents, it is not clear to what extent they reach the intestinal mucosa. We investigated the correlation between endoscopic and histologic findings with the amount of anti-TNFα found in uninfamed tissue, both in Crohn’s disease (CD) and Ulcerative colitis (UC).

Methods: Patients were included in the study if they had IBD (CD or UC) and were treated with anti-TNFα therapy. Endoscopic and histologic evaluations were performed at the time of the final visit, as part of the routine follow-up. Tissue sampling was performed by the endoscopist at the time of the evaluation. Tissue samples were immediately frozen and stored at −80°C. Immunohistochemistry was performed using the streptavidin-biotin-peroxidase method, and examined on light microscopy. Positive controls were included in each tissue series. The human anti-TNFα antibody was visualized using horseradish peroxidase. Quantification of the amount of anti-TNFα was done using a standard curve with recombinant human anti-TNFα, which was applied on the tissue sections using a 10 μg/mL concentration in PBS. The amount of anti-TNFα was calculated as the optical density (OD) at 492 nm, as measured using an optical reader (SPECTRAmax, Molecular Devices Corporation, Sunnyvale, CA). The correlation of the amount of anti-TNFα in the tissue with endoscopic or histologic scores was assessed using the Spearman rank correlation test.

Results: A total of 17 patients were included in the study: 9 with CD and 8 with UC. The median age was 42 years (range 18–72). Male:female ratio was 4:3. Four patients were naive to anti-TNFα therapy, while the rest had been receiving anti-TNFα therapy for at least 12 months. The median amount of anti-TNFα was 15.3 OD units (range 0.002–44.76). The amount of anti-TNFα was positively correlated with the endoscopic activity score (r = 0.63, p = 0.01) and with the histologic activity score (r = 0.58, p = 0.02) in CD patients. In UC patients, the amount of anti-TNFα was positively correlated with the histologic activity score (r = 0.68, p = 0.01).

Conclusion: There is a correlation between the amount of anti-TNFα found in uninfamed tissue and the activity of IBD, both clinically and histologically. The amount of anti-TNFα found in uninfamed tissue may be a useful tool in the monitoring of IBD patients treated with anti-TNFα therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.
target, little or no information is available regarding the ratios of free and TNF-bound infliximab 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-treated patients. TNF-bound infliximab and free bound infliximab were detected 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 (PGA), endoscopic appearance (severity determined according to mayo scoring in ulcerative colitis and endoscopist’s assessment of ulceration severity, extent of disease and affected area in Crohn’s disease) and pathological results (severity 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 non-inflamed tissue infliximab, was 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 = −0.7095, p = 0.0059). TNF-bound infliximab was measured in both inflamed and non-inflamed specimens 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 addressing changes during the phases of mucosal healing may allow their use as surrogate markers for this process.

Disclosure of Interest: B. Unger: Bella Unger 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 lecture and advisory fees and Takeda grant support lecture and advisory fees, Medtronic advisory fees. All other authors have declared no conflicts of interest.

P1051 ANTIBODIES TO INFlixIMAB OCCUR THROUGHOUT TREATMENT BUT DEVELOPMENT IS DELAYED BY IMMUNOSUPPRESSION

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Introduction: Infliximab (IFX) is an important agent in the treatment of inflammatory bowel disease (IBD). However, its use may be limited by the development of antibodies to infliximab (ATI). The aim of this study was to assess the timing and significance of ATI development in clinical practice.

Aims & Methods: Since May 2016, all IBD patients receiving intravenous IFX for maintenance treatment, at a large, single, referral centre, have undergone therapeutic drug monitoring (TDM). Serum IFX trough levels and ATI were both measured on a quarterly basis. Antibody formation was defined as a Harvey Bradshaw Index or Simple Colitis Activity Index < 4. Risk factors for ATI development were assessed by binary logistic regression model, using 522 sera taken from patients on maintenance therapy. Time to develop ATI, undetectable IFX levels and loss of response to treatment was assessed by Cox regression and Kaplan-Meier analysis.

Results: Male sex (OR = 2.1; p < 0.001), week of treatment (or for each extra week of treatment = 0.999; p = 0.038) and use of concomitant immunosuppression (IS) (OR = 0.37; p < 0.001) was associated with ATI formation.

Conclusion: ATI formation delays the development of IFX treatment. ATI presence is associated with male sex and lower week of treatment. Use of concomitant IS is associated with delays in ATI formation.

Disclosure of Interest: All authors have declared no conflicts of interest.
in just one of these 14 patients (1.4%) (p < 0.001). Median (IQR) TL were 5
0.001. A significant correlation between TL and ADA levels could be found (Spearman’s
rho = –0.582, p < 0.001). Although the presence of these ADA was not significantly associated with clinical remission at week 12, a clear trend 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.

**Conclusion:** A drug-resistant assay can identify ADA to ADM before all drug has been in remission for at least 12 months. As these ADA 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.

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A. Gils: Speaker for MSD, Janssen Biologics, Abbvie, Pfizer, and Takeda.

Consultant for UCB and Takeda. License of (anti)-Jlimkllim, (anti-jadali-
mumab, and vedolizumab ELISA to apDha and infliximab, adalimumab lateral flow to R-Biopharm AG.

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All other authors have declared no conflicts of interest.

**Reference**

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**P1053 ADHERENCE TO MAINTENANCE THERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE BEFORE AND AFTER THE INTRODUCTION OF THE SHARED MEDICATION RECORD**

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**Introduction:** Compliance is a significant problem in the medication of patients with chronic diseases, especially during periods when patients are completely unaware of their disease and just take their drugs to prevent disease recurrence.

(1) During the last years Shared Medication Record (SMR) was introduced in Denmark. There is a national database containing information on current medication of all Danish residents. SMR include information on who, when, and how much medicine the patients by at the pharmacies. Therefore with SMR it becomes possible for doctors to see if patients retrieve the prescribed medicine at the pharmacy. Patients with chronic inflammatory bowel diseases (IBD), ulcerative colitis (UC) or Crohns Disease (CD), has periods of flares of the disease but in many cases also long periods when the disease is in remission.

The majority of patients need medication to reduce the risk of recurrence of disease. This means that they need to take medicine even if they have no symptoms of disease. Previous American studies have shown that a number of patients in this situation do not take their medication and thus are at increased risk for relapse of the disease (1). There are no corresponding data for Danish patients. We wanted to find out the proportion of Danish IBD patients in remission who buy the prophylactic treatment as prescribed, and whether this proportion will change when the patients are informed about the doctor can see if they pick up the medicine at the pharmacy.

**Aims & Methods:** The purpose of this study was to investigate whether Danish patients with IBD in remission buy the prophylactic treatment as prescribed, if these patients buy a larger part of their medicine when they know that the doctor can see which medicines they buy at the pharmacy. 100 consecutive patients with UC in remission for at least six months and IBD in remission for at least six months and treated with a fixed dose of Mesalazine, azathioprine, or Mercaptapurine during the preceding six months were enrolled from Randers Regional Hospital Adult Gastroenterological Outpatient Clinic. Patients were randomized 1:1 either to receive information that the doctor could follow their pharmacy refills, or not to get information on this. The patients were not informed that they participated in a study. All patients had a second visit six to 12 months later. Patients who had flares in disease activity during the study period was excluded. Adherence to the treatment was defined as pharmacy refills according to the prescribed dose for at least 80% of the period of the preceding six months. Fisher’s exact test was used as test of independence between groups.

**Results:** 67% of the patients in the study were adherent to their medical treatment during the first study period decreasing to 48% during the second study period (P < 0.001). There was no difference in the decrease in adherence between patients informed about SMR and those who were not informed. Younger patients were less prone to adherence compared to older patients at the first study visit (Age groups: 19-39: 49/60+ years: Adherence 48/71% (P < 0.05). We found no differences related to disease (UC/CD), sex, 5-ASA, antipurins, or administration route (oral/rectal).

**Conclusion:** Adherence to treatment fell from the first visit when the disease had been in remission for at least six months, to the second study visit when the disease had been in remission for at least 12 months. This was independent of whether the patients were aware that the physician could follow their medication refills or not. This might indicate that adherence to medical treatment of IBD decreases over time when the disease is in remission.

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

**References**


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**P1054 CLINICAL EFFICACY AND SAFETY OF GOLIMAB IN BIOLOGIC NAÏVE AND EXPERIENCED PATIENTS WITH ACTIVE ULERATIVE COLITIS NON-RESPONDER OR INTOLERANT TO CONVENTIONAL THERAPIES**

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**Introduction:** Golimab (GOL) is a fully human monoclonal antibody to TNFα approved for the treatment of patients with moderate to severe ulcerative colitis (UC) with inadequate response or intolerance to steroids or immunosuppressive therapies. The aim of this study is to evaluate the efficacy and safety of GOL in both biologic naïve (BN) and biologic experienced (BE) patients.

**Aims & Methods:** Data were prospectively collected from a cohort of UC patients treated with GOL from March 2015 to March 2017 at two centers. Data were analyzed from two patient cohorts, namely BN patients and patients who have already undergone treatment with infliximab or adalimumab (BE). Patients received GOL 200 mg sc. at week 0, GOL 100 mg sc. at week 2, then 50 mg or 100 mg sc. every 4 weeks depending on their body weight. The primary outcome was clinical response rate and incidence of adverse events (AEs).

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**Table:**

<table>
<thead>
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<th>PATIENT CHARACTERISTICS</th>
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<th>Biologic Experianed</th>
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Introduction: Endoscopic recurrence precedes clinical recurrence after ileocolonic resection for Crohn’s disease (CD). Guidelines recommend an ileocolonoscopy weeks 4–14 after surgery, even though there were no statistically significant differences noticed between the patients who continued therapy, median (IQR) duration of GOL treatment was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed 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 statistically significant differences noticed between the patients who continued therapy, median (IQR) duration of GOL treatment was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed clinical response to GOL. Clinical response rate was similar in the BN and BE cohorts (p = 0.8). 28 (52%) patients were non-responders, without a statistically significant difference between the two groups (p = 0.8). At March 2017, 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).

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 profile, age at diagnosis, disease duration, pattern of previous and concomitant conventional therapies, as well as of disease extension and severity. Overall, surgical intervention after GOL therapy was performed in 13 (22%) cases: 3 (11%) belonged to the BN and 10 (31%) and BE group, respectively (p = 0.2). In 10 (17%) patients AEs were recorded, most of which were genitourinary 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 (50%) patients AEs 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 treatment was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed clinical response according to GOL. Clinical response rate was similar in the BN and BE cohorts (p = 0.8). 28 (52%) patients were non-responders, without a statistically significant difference between the two groups (p = 0.8). At March 2017, 17 (31%) patients maintained clinical response, whereas 37 (69%) failed the treatment. No statistically significant differences were noticed between the patients who continued therapy, median (IQR) duration of GOL treatment was 7 (4–14) months. At 3 months follow-up, 26 (48%) patients showed 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).

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

P1055 ETROLIZUMAB TREATMENT IMPROVES HISTOLOGICAL ACTIVITY AS ASSESSED BY THE RHEUMATOID ARTHRITIS HISTOPATHOLOGY AND NANCY HISTOLOGICAL INDICES

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Introduction: Etrolizumab, an anti-β7 monoecional antibody targeting α4β7 and αEβ7 integrins, showed efficacy and safety versus placebo (PBO) during 10 weeks (wk) of induction in patients with moderate-to-severe ulcerative colitis in the Phase 2 EUCALYPTUS trial (Vermeire S. Lancet. 2014;384:309–18). Since a reduction in histologic inflammation has been linked with improved long-term clinical outcome (Bryant R.A et al. Gut. 2016;65:408–14), the effect of etrolizumab on histologic inflammation was evaluated in mucosal biopsies from EUCALYPTUS patients using the Roberts histopathology index (RHI); Mosk MH. Gut. 2017;66:50–8) and Nancy histological index (NHI; Marshel-Bresson A, Gut. 2017;66:43–9).

Aims & Methods: 124 patients were randomly assigned (1:1:1) to receive subcutaneous etrolizumab (100 mg at wk 0, 4, and 8, with PBO at wk 2, or 420 mg loading dose at wk 0, followed by 300 mg at wk 2, 4, and 8) or PBO. Biopsies were taken using flexible sigmoidoscopy/full colonoscopy from the most inflamed colonic area within 10–40 cm from the anal verge at baseline (BL) and at wk 10. 62 patients provided consent for long-term sample storage for research; batch HE-stained slides were scored by a single pathologist using the Geboes scale (later converted to RHI) and NHI. At wk 10, mean changes in RHI and NHI scores for pooled etrolizumab or PBO were calculated. Subanalyses explored histologic response (reductions of ≥ 6 or 10 points or ≥ 50% improvement from BL RHI and ≥ 1 or 2 points reduction from BL NHI, respectively) in mucosal biopsies (no neutrophils, RHI ≤ 4 and NHI = 0, ≤ 1 or 2) and correlation with endoscopic improvement.

Results: Analysis included 56 patients with BL data and BL NHI > 1. At wk 10, 50% improvement from BL RHI and ≥ 50% reduction from BL NHI (RHI < 5; NHI ≤ 3) was achieved in 38% (30/79) of patients with an ES ≥ 1 at wk 10 versus 4% (3/79) in patients with an ES ≥ 1. Mean (SD) NHI changes were − 2.5 (1.5) in patients with an ES ≥ 1 at wk 10 versus − 0.6 (1.3) in patients with an ES ≥ 1. Spearman’s
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>RHI Response (decrease from baseline)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥0</td>
<td>55%</td>
<td>17%</td>
<td>46%</td>
</tr>
<tr>
<td>≥10</td>
<td>55%</td>
<td>0%</td>
<td>36%</td>
</tr>
<tr>
<td>≥20</td>
<td>36%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>≥30</td>
<td>7%</td>
<td>0%</td>
<td>14%</td>
</tr>
<tr>
<td>RHI ≥1</td>
<td>73%</td>
<td>12%</td>
<td>54%</td>
</tr>
<tr>
<td>RHI ≥2</td>
<td>0%</td>
<td>32%</td>
<td>4%</td>
</tr>
<tr>
<td>REMISSION (absolute score)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHI ≥4</td>
<td>36%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>No neutrophils</td>
<td>36%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>RHI ≥6</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>≤≥5</td>
<td>7%</td>
<td>3%</td>
<td>14%</td>
</tr>
</tbody>
</table>

1Must 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 wk 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: L. Peyrin-Biroulet: Consultant/Advisor for Merck, AbbVie, Janssen, Gilead, Mitsubishi, Ferring, Norgine, Tiloron, Vifor, Therakos, Pharmacis, Pliego, BMS, UCB-pharma, Hospira, Celltrion, Takeda, Biogaran, Boerhinger-Ingehelm, Lilly, Pfizer [rest of disc. on request]
D. R. Gaya: Daniel R. Gaya: speaker for Abbvie, Dr Falk Pharma, Ferring, MSD, Shire, Takeda, Vifor, Therakos, Pharmacis, Pliego, BMS, UCB-pharma, Hospira, Celltrion, Takeda, Biogaran, Boerhinger-Ingehelm, Lilly, Pfizer [rest of disc. on request]
R. Macieau: Employee of Genentech. Roche stock-holder
A. Schert: Employee of Genentech

P1057 GO-COLITIS: EFFICACY AND QUALITY OF LIFE DURING GOLIMUBUM MAINTENANCE IN UK PATIENTS WITH MODERATE TO SEVERE ULCERATIVE COLITIS

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Introduction: GO-COLITIS (NCT012092285; 2013-004853-56) is a phase 4, multicentre, open-label, single-arm trial in the UK assessing efficacy of golimubum (MedImmune) in induction and maintenance of clinical response in patients with moderate to severe ulcerative colitis (UC) resistant to conventional treatment. Results of the maintenance phase are presented here.

Aims & Methods: Anti-TNF naïve adults with UC ≥3 months who responded to induction therapy with subcutaneous GLM at BL week 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 week 6, week 30 and week 54. The primary endpoint was the proportion of patients meeting PMS response criteria at wk 54 (defined as decrease in PMS ≥2 points and ≥30% from baseline, plus a decrease in rectal bleeding subscore of ≥1 point or absolute rectal bleeding score ≥5). Secondary endpoints included proportion of patients meeting PMS remission criteria at week 54 (defined as PMS ≤2 and no individual Mayo subscore >1), change from baseline in IBDQ 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, 140 patients responded in the induction phase and received GLM in the maintenance phase. Clinical response was maintained through week 54 in 52/140 patients (37.1%; 95% CI, 29.1% to 45.7%) and 42/140 patients were in remission at week 54 (30.0%; 95% CI, 22.6% to 38.3%). Improvements in PMS subscores from baseline to week 54 were noted in stool 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 (85.4%; 95% CI, 73.0% to 92.8%); IBDQ and EQ-5D 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 week 54 in IBDQ and EQ-SD

<table>
<thead>
<tr>
<th>n Baseline</th>
<th>n Week 54</th>
<th>Change From Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBDQ total score</td>
<td>138 116.4 (32.7)</td>
<td>186.2 (27.1)</td>
</tr>
<tr>
<td>EQ-SD index score</td>
<td>136 0.7 (0.2)</td>
<td>0.9 (0.2)</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 (IBDQ, EQ-SD) were seen; the degree of improvement in IBDQ total score exceeded the IBDQ increase cutoff (i.e. ≥20 for a patient defined-remission previously identified as representative of a patient defined improvement in an assessment of UC clinical endpoints.1 Adverse events were consistent with previous observations.


P1058 A UNITED STATES CLAIMS DATABASE ANALYSIS COMPARING SAFETY, MEDICAL RESOURCE UTILIZATION, AND TREATMENT COSTS ASSOCIATED WITH THE MANAGEMENT OF INFLAMMATORY BOWEL DISEASE BY DRUG CLASS

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Introduction: Only a third of patients (pts) with inflammatory bowel disease (IBD) treated with current pharmacological options achieve clinical remission (remission rate), and most experience drug-related adverse events (AEs). Herein we characterise the clinical and economic burden of IBD treatment limitations in terms of AEs of interest, medical resource utilisation (MRU) and associated medical costs.

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), immunomodulators (ISM), 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: 556.5) 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.

OCS monotherapy was the strongest predictor of any AE occurring for pts with Crohn’s or UC (Crohn’s: HR, 1.62 [1.51–1.73]; UC: HR, 1.57 [1.49–1.66]). A similar pattern was observed for severe hepatitis (Crohn’s: HR, 2.43 [2.07–2.85]; UC: HR, 2.37 [2.07–2.72]) and bone-related conditions (Crohn’s: HR, 1.88 [1.74–2.03]; UC: HR, 1.77 [1.67–1.89]). The strongest predictors for serious hepatic events were IS + OCS (Crohn’s: HR, 2.38 [1.72–3.31]; UC: HR, 2.36 [1.75–3.18]). A total of 2,66 pts with UC (Crohn’s: HR, 1.92 [1.55–2.34]) and 2,72 pts with UC or Crohn’s receiving OCS or IS + OCS were more likely to have emergency department visits; IS-related hospitalisations, visits or procedures; and gastrointestinal surgery compared with pts receiving other therapies. Analysed together, participants treated with IS or atTNF therapy in both Crohn’s and UC. However, annualised medical service costs (that exclude IBD drug costs) were highest for pts initiating OCS-containing therapies (Crohn’s: OCS, $27,041 and OCS + IS, $23,352; UC: OCS, $19,659) followed by other induction therapies (Crohn’s: ASA, $10,823 and atTNF + IS, $9,151 [P < 0.001]; UC: ASA, $7,980 and atTNF + IS, $18,771 [P < 0.001]).

Conclusion: Chronic OCS use was associated with increased risk of severe infection, bone conditions, and serious hepatic events compared with other therapies. Consequent increased AE risk, OCS regimens were associated with higher rates of MRU and medical service costs compared with other therapies. Although limiting the use of OCS regimens may be more costly initially, treatment decisions should consider downstream costs of alternate options.


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Introduction: Infliximab has been shown to induce and maintain long-term clinical remission in inflammatory bowel disease (IBD) patients. However, 10–30% of patients show no clinical benefit by the end of induction (week 14) and are considered primary non-responders. The mechanisms underlying primary non-response have not yet been clearly defined.

Aims & Methods: In this study we aimed to evaluate to which extent pharmacokinetics (early induction infliximab and anti-infliximab-antibody (ATI) levels) and therapy persistence non-response occurred. A retrospective observational case-control study of patients with IBD attending the Gastroenterology Department of Sheba medical center and treated with infliximab between 2009 and 2016 was performed. Clinical scores were determined and sera were collected prospectively before infusions. Inflimab and ATI levels were measured by our previously described drug-tolerant ELISA assay.

Results: Thirty five primary non responders have been identified and matched at 1:1 with 35 primary responders for a total of 140 patients. Both week 2 and week 6 infliximab levels were significantly lower among primary non-responders compared to responders (week 2: median level 7.2 μg/ml vs. 13.5 μg/ml, p = 0.0019, week 6: median level 2.2 μg/ml vs. 9.5 μg/ml, p < 0.0001, respectively). ATI appeared more frequently (either week 2 or 6, OR 4.6, CI 2–10.8, p = 0.0004) and at higher levels in non-responders compared to responders (week 2: median ATI 7.3 μg/ml-eq vs. 3.8 μg/ml-eq, p = 0.005, week 6: 10.8 μg/ml-eq vs. 4.4 μg/ml-eq, p = 0.008, respectively). Moreover, week 2 ATI levels >4.3 μg/ml-eq (AUC = 0.68, p = 0.004, sensitivity 77%, specificity 86%) and infliximab levels ≤6.8 μg/ml (AUC = 0.68, p = 0.002, sensitivity 50%, specificity 86%) were predictive of primary non-response. In analyses of various demographic and clinical factors correlated with primary non-response the only independent significant on multivariable analyses were lower infliximab and higher ATI levels at either week 2 or 6, infliximab monotherapy and previous IB-related surgeries. Sub-analyses according to IBD type demonstrated that in addition to lower drug and higher ATI levels, older age and previous surgeries increased primary non-response among Crohn’s disease patients. Monotherapy was the only other factor significant among ulcerative colitis patients, although multivariate analysis was not performed due to limited sample size (n = 32).

Conclusion: Although direction of causality cannot be ascertained, infliximab levels below 6.8 μg/ml and ATI levels above 4.33 μg/ml-eq before the second infusion (week 2) are predictive of primary non response, in addition to previous CD-related surgeries and infliximab monotherapy. These findings suggest that preemptive interventions in a subset of patients might minimize this phenomenon.

Disclosure of Interest: Y. Chowers: Abbvie - grant support, lecture and advisory fees Janssen - lecture and advisory fees Takeda - grant support lecture and advisory fees Medtronic - advisory fees U. Kopylov: Speaker fees - abbvie Research fees Janssen - lecture and advisory fees Takeda - has received research support from Celltrion, AbbVie & Takeda; and has received consultation fees from AbbVie and Janssen. All other authors have declared no conflicts of interest.

PI0160 TREATMENT EXPERIENCE WITH TOPICAL PRODUCTS FOR ULCERATIVE COLITIS–THE PATIENTS PERSPECTIVE IN EUROPE AND THE USA

T. Buryhoffer, A. Thompson, T. Knittel

Introduction: Topical therapies 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 goal of this market research 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 outspoken patient activists to identify the right sources was also used. In order to select pts 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. A structured questionnaire covering 14 items was pretested 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 oral products at some point during their treatment course, although 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.

Discussion: 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: T. Buryhoffer: Consultancy for Index Pharmaceuticals A. Thompson: Consultancy for Index Pharmaceuticals T. Knittel: Consultancy, CMO position and share holding of Index Pharmaceuticals

PI0161 SELF-CAREMAGEMENT IN INFLAMMATORY BOWEL DISEASE: A PERSPECTIVE OF NURSES AND PHYSICIANS

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Introduction: Over the last years, self-management (SM) has been advocated as an instrument to empower patients to increase patient involvement and reduce healthcare costs in chronic diseases. Although many SM programs have been developed for inflammatory bowel disease (IBD) patients, little research has been performed on needs and wishes of IBD physicians, nurses and patients. Nurses and physicians play an important role in providing and stimulating SM.

Aims & Methods: This study aimed to gain insight in what caregivers consider good SM options, and which options – patient- or disease-related factors they consider of importance. Nurses and/or physicians were willing to participate during a nursing a IBD day at our hospital, a survey regarding SM was distributed among 46 nurses. Also, 50 IBD-interested gastroenterologists were invited to respond to the same survey by email with a link to the survey. The survey contained questions regarding the caregivers’ views on ways for patients to apply SM in an outpatient setting (12 options were given). Caregivers were asked to state whether they thought these options would be valuable to patients or not, and to name their top three options. Also, caregivers were asked their views on factors that could
influence the degree of SM a patient is willing to apply, such as: disease duration, activity, health literacy, self-efficacy, patient 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: 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. Factors 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 patients’ age was an important factor in patient’s SM, compared to 34% of physicians (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. Factors 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 patients’ age was an important factor in patient’s SM, compared to 34% of physicians (p = 0.001).

Introduction:

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References


P1062 DISTINCT PATTERNS OF SHORT-CHAIN FATTY ACIDS IN PATIENTS WITH ULCERATIVE COLITIS EXPERIENCING A FLARE DURING TREATMENT WITH MESALAMINE OR A HERBAL COMBINATION OF MYRRH, CHAMOMILE FLOWERS AND COFFEE CHARCOAL

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Introduction: The combination of myrrh, chamomile flowers, and coffee charcoal has shown first evidence for potential efficacy in maintaining remission in ulcerative colitis. Myrrh and coffee 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, mucin production and expression of antimicrobial peptides. UC patients often show reduced occurrence of SCFA especially of butyrate and propionate. This might lead to unfavorable health implications including higher risk of inflammation and heightened cancer risk.

Aims & Methods: The purpose of the present study was to evaluate the influence of mesalazine and of the herbal preparation on SCFA in ulcerative colitis. Analyses was performed 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 consisted of 100 mg myrrh, 70 mg chamomile extract and 50 mg coffee charcoal (Myrrhinil-Intest; Repha GmbH, Hanover, Germany). Patients were treated with mesalamine 500 mg 3xd. Clinical activity was monitored with the CAI (Rachmilewitz) with a CAI > 4 indicating a clinical flare. Fecal samples were collected, gas chromatography was performed and SCAFA (butyrate, acetate, propionate, iso-valerate) were measured as baseline, in the event of a clinical flare or at the end of the 12-month time interval.

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% BCI [18.86–58.60]) 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 = 64.80; SD = 53.74; M flare = 48.09; SD = 35.90; 95% BCI [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% BCI [7.02–39.95]) nor for mesalazine (n = 27; M baseline = 57.01; SD = 34.40; M 12month = 42.01; SD = 21.90; 95% BCI [34.29–49.54]).

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 improvements 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

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Introduction: Selective GMA using Adacolumn® is a device in 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-Adacolumn® 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 12/31/2012. Only steroid-dependent and/or ASA/IXA/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 point drop in the clinical activity index (CAI) for ulcerative colitis (UC) and a ≥ 100 points reduction of the Crohn disease activity index (CDAI) 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 technical data. In the final group of 22 patients, a clinical benefit 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, hypotension 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 and with more extended follow-up are needed to confirm these results.

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

Reference

Aims & Methods: The present study aims to investigate the influence of the single and combined herbal extracts with regard to its antimicrobial and immunomodulating activities. Thus, the effect of myrrh, chamomile flower, coffee charcoal on intestinal motility was determined using isometric tension measurement in isolated rat small intestinal preparations. Furthermore chemokine-challenged Caco2 cells was inhibited after myrrh (IC50: myrrh = 106 µg/mL). Synergistic effects exerted by the herbal combination in inhibiting CXCL13 release significantly reduced IC50 values (IC50: myrrh = 82.5 µg/mL; chamomile flower = 22.5 µg/mL; coffee charcoal = 29 µg/mL) in a DRI of 3. Chamomile induced CXC13L1 release from Caco2 cells was reduced by all herbal components (IC50: myrrh = 41 µg/mL; chamomile flower = 364 µg/mL; coffee charcoal = 447 µg/mL) with comparably high IC50 values. However, application of the herbal combination, significantly reduced the IC50 of the plant extracts (myrrh = 25 µg/mL; DR1 = 1.7; chamomile flower=IC50 = 124 µg/mL; DR1 = 2.9; coffee charcoal-IC50 = 124 µg/mL; DR1 = 3.6). IL8 release from cytokine-challenged Caco2 cells was inhibited after myrrh (IC50 = 5 µg/mL; 28% max inhib.) and coffee charcoal (IC50 = 216 µg/mL; 75% max inhib.) but increased after chamomile flower treatment (IC50 = 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 = 56 µg/mL; coffee charcoal = 281 µg/mL; 77% max. inhib.).

Conclusion: The herbal components myrrh, chamomile flower and coffee charcoal influenced chemokine signalling of stimulated intestinal epithelial cells and activated macrophages. Myrrh and chamomile flower additionally exerted anti-inflammatory effects. Synergistic and additive effects between the plant extracts justify the combination of the traditional herbal medicinal product (Myrrh; Chamomile flower; Coffee charcoal) and its application for the treatment of inflammatory intestinal disorders.

Disclosure of Interest: C. Visseren: Author Cica Visseren 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
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A deregulated immune response associated to an increase of intestinal permeability is still unknown. It has been hypothesized that, in genetic predisposed subjects, Ulcerative Colitis (UC), are idiopathic autoimmune conditions whose pathogenesis involves the activation of the innate and adaptive immune response, resulting in mucosal inflammation. Inflammatory Bowel Diseases (IBD), Crohn Disease (CD) and Ulcerative Colitis, are characterized by an increase of the intestinal permeability, a feature that is associated with the development of clinical manifestations and the progression of the disease.

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 considering 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.

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Introduction: There are currently no FDA-approved agents to specifically treat IBD and the treatment options for IBD are limited. For moderate to severe disease, immunosuppressive agents and biologic agents are used. There are currently only three FDA-approved biologics for IBD: Infliximab (IFX), Adalimumab (ADA) and Ustekinumab (UST). IFX is used for moderate to severe Crohn’s disease and ADA is used for moderate to severe ulcerative colitis.

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 ¼ 0). 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 week 52. 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 non-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 who received ADA, the response rate was comparable to previous studies where the response rate was reported to be 50-60%. The rates of MH at week 52 were in line with previous studies. Overall, 19 patient of 32 (59%) maintained ADA therapy during 52-week follow-up. These data suggest that ADA is an effective and safe drug for children with UC, with a favorable short- and long-term safety profile.

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

References:


Abstract: P1069. Main patients’ characteristics at ustekinumab induction

Age at CD onset 13 ± 12 ± 10 ± 10 ± 6 10 ± 11 12 ± 8 ± 13 ± 7

Age at ustekinumab induction 15 ± 17 ± 15 ± 16 ± 12 ± 10 ± 17 ± 18 ± 13 ± 10 ± 18 ± 12

Duration of disease 2 ± 12 ± 3 ± 6 ± 2 ± 4 ± 7 ± 7 ± 1 ± 2 ± 5 ± 5


Prior exposure to


immunosuppressors


Biotherapies

Reasons for anti-TNF discontinuation

Primary inefficacy Allergy to IFX Loss of efficacy Loss of efficacy Primary inefficacy Allergy to IFX Primary inefficacy to Ada

From January 2015 to May 2016, twelve CD patients were treated with ustekinumab, all because of failure of several lines of therapies including anti-TNF antibodies. All but one patient were followed at least one year. An initial response was observed in 9/12 patients, and remission in 5/12 (42%). At one year, the patients were still receiving ustekinumab with clinical benefit and without side effects. Seven of them (58%) were on clinical remission. One patient experienced a serious adverse event and the treatment was stopped after the first injection.

References


with inflammatory bowel disease to discontinue anti-TNF

Rahier J-F, Buche S, Peyrin-Biroulet L et al. Severe skin lesions cause patients

P1071 INFliximab INDUCED PSORIASIS IN A COHORT OF CHILDREN WITH INFLAMMATORY BOWEL DISEASE: A 12 YEARS FOLLOW-UP STUDY

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Introduction: In adult Inflammatory bowel disease (IBD), skin adverse reactions have been observed in prevalence of 1.6 to 22%. This side effect occurs more fre-quently in patients treated with infliximab (IFX) for IBD. Datass in the pediatric population are lacking so far.

Aims & Methods: All patients aged 2 to 18 years, with Crohn’s disease (CD) or Ulcerative colitis (UC) and treated for the first time by IFX between January 2002 and March 2014, were considered for inclusion in this monocentric retro-spective study.

Results: Basline Patients: 115 patients were treated with IFX for CD and 23 for UC. IFX treatment was initiated at the age of 14, about 2 years after diagnosis. The indication for treatment was in 61.6% (n = 85) resistance to conventional therapy, in 26.8% (n = 37) a perianal fistulizing disease and in 11.6% (n = 16) a severe colitis. At the first injection, the median PCDAI was 35 (25; 45) for CD and the median PUCAI 35 (25; 45) for UC. The duration of treatment with IFX ranged from 45 days to 8 years and median was 23.9 months (11.6; 36.5).

Psoriasis: 20 patients (14% of the cohort) had an IFX-induced psoriasis. 70% of them (n = 14) of patients were in remission when the psoriasis was diagnosed. Psoriasis was diagnosed at the 8th injection (6; 15), though 355 (239; 523) days after the start of biotherapy. 20% of patients had a combo therapy: 50% of them were treated by 6-mercaptopurine, 25% by azathioprine and 25% by methotre-xate. The median IFX trough levels (TRI) when psoriasis occured was 4.7 mcg/mL

Conclusion: 14% of our IBD patients treated with IFX developed psoriasis during follow-up. All were CD, more frequently it occurred for CD with perinidal lesions, at the 8 injection in median, with no ATI.

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

References


P1072 PLATELET ABNORMALITIES AND ANEMIA IN PAEDIATRIC IBD: ARE THEY LINKED?

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Introduction: Crohn’s Disease (CD) and Ulcerative Colitis (UC) are two major forms of Inflammatory Bowel Disease (IBD). In children with IBD anemia is common and is a combination of iron deficiency and anemia of chronic disease (ACD). IBD are associated with several alterations of platelets, including number, shape, and function.1 In clinical practice, the most common platelet alteration is thrombocytosis. In IBD, thrombocytosis is associated with iron deficiency anemia and chronic inflammation.2 The platelet function is disturbed due to the substantially increased incidence of thromboembolic phenom-en in IBD 3

Aims & Methods: The aim of the study is to demonstrate the link between anemia, thrombocytosis and platelet aggregation in pediatric IBD patients.

This study includes 51 children and adolescents treated from the Pediatric Gastroenterology Unit of Policlinico Umberto I in Rome. Patients younger 6 years, with inherited platelet defects, hemoglobinopathies, and receiving thera-pies that alter platelet function, are excluded. We collect disease activity scores (Pediatric Crohn’s Disease Activity Index [PCDAI], Pediatric Ulcerative Colitis Activity Index [PUCAI]). The laboratory investigations include: complete blood count, mean corpuscular volume (MCV), mean platelet volume (MPV), mean corpuscular haemoglobin concentration (MCHC), levels of hemoglobin (Hb) and reticulocytes, portal venous pressure, platelet aggregation. Diagnostic criteria for anemia are based on ECOO guidelines. Platelet aggregation is evaluated on platelet-rich plasma in an AggRAM aggregometer with Born’s Method. The results were reported as the maximal percentage of aggregation observed after 4 min stimulation in response to collagen (1 μg/mL) and adenosine diphosphate (ADP 0.8 μM and ADP 2 μM).

Results: The study include 51 children and adolescents, 24 with UC and 27 with CD. Median age of the study population is 15.3 years (4.3–10.0). Iron deficiency anemia combined to ACD is the most common type (53.6% in UC and 50% in CD). Hemoglobin levels are significantly lower in patients with UC compared to CD patients (p = 0.0320). No significant differences are observed between mean values of red cells, MCV, MCHC, RDW, iron, transferrin and serum ferritin both in CD and UC. Thrombocytosis prevails in UC compared to CD patients, but no significant correlation was found. No differences are observed between mean values of PDW and MPV in both groups. In patients with UC, a negative correlation was found between mean values of hemoglobin and platelet count (p = 0.0134). Moreover in patients with CD, disease activity was positively correlated with platelet count (p = 0.0040). Platelet aggregation results higher in anemic patients. In anemic children, mean baseline platelet aggregations - induced by ADP 0.8 μM and collagen 1 μg/mL - are significantly higher in UC compared to CD (p = 0.001 and p = 0.030 respectively). No significant correlation is observed between platelet aggregation - induced by ADP 0.8 μM and ADP 2 μM - in anemic UC patients compared to non-anemic UC patients (p = 0.002 and p = 0.040 respectively). Platelet aggregation – induced by ADP 0.8 μM is sig-nificantly higher in anemic UC patients with active disease (PUCAI > 20) com-pared to same patients whose disease is in remission (p = 0.042) and compared to patients with active CD (p = 0.054).

In our cohort, mixed anemia (iron deficiency anemia combined to anemia of chronic disease) is the most common type of anemia. Thrombocytosis is a condition more frequent in anemic IBD patients, specially in UC. In UC, anemia and disease activity are significant correlated with platelet hyperaggrega-tion.5 Moreover in patients with Crohn’s disease may require withdrawal of anti-tumor necrosis factor ther-apy. Inflamm Bowel Dis 2013; 19: 75–7.


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

References

P1073 RELATIONSHIP BETWEEN CLINICAL COURSE OF ULCERATIVE COLITIS (UC) DURING PREGNANCY AND OUTCOMES OF PREGNANCY: A RETROSPECTIVE EVALUATION STUDY
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Introduction: Ulcerative colitis (UC) is a chronic, intractable disease with a long clinical course. UC has a marked influence on the lifestyle of patients, and its effects on pregnancy and child birth can especially become a problem for women in their child-bearing years. Various studies have suggested that it is desirable for pregnant women with UC to give birth while remaining in a state of remission.

Aims & Methods: The present study evaluated pregnant women with UC attending our hospital who became pregnant during remission, in order to examine the factors that contributed to recurrence of UC during pregnancy. We investigated 40 pregnant patients in remission (44 cases) attending our hospital between January 2008 and July 2016 who had remained in remission for one year prior to pregnancy. After becoming pregnant while in remission, patients who stayed in remission until delivery were classified into the ongoing remission group (35 cases) and patients with recurrence during pregnancy were classified into the recurrence group (9 cases). Remission was defined as a Lichtiger clinical activity index (CAI) of less than 4. Relapse was defined as a CAI ≥ 5 with the need for initiation or dose escalation of steroids or administration of biological agents during pregnancy. Items examined: Clinical characteristics (age at onset, disease duration, age of becoming pregnant, disease type, and treatment), the CAI in the first, second, and third trimesters, and whether or not patients continued treatment during pregnancy were examined and compared between the two groups. The reasons for discontinuation of treatment were also investigated.

Results: There were significant differences between the two groups with respect to the age of becoming pregnant (32.9 ± 4.4 years in the ongoing remission group vs. 28.3 ± 7.0 years in the recurrence group), the CAI in the second trimester (2.9 ± 4.6 vs. 3.5 ± 4.6), the CAI in the third trimester (2.9 ± 0.7 vs. 5.4 ± 2.0), and whether oral treatment was continued (continuation of treatment [yes/no]: 30/5 in the ongoing remission group vs. 5/4 in the recurrence group). Regarding the discontinuation of oral treatment, two patients in the ongoing remission group and one patient in the recurrence group discontinued it on their own judgment, while two patients in the recurrence group discontinued it due to hyperemesis. Discussion: The present study revealed that factors influencing the recurrence of UC during pregnancy were the age of becoming pregnant and the continuation of oral treatment. Our results showed that younger women were more susceptible to recurrence. As expected, discontinuing oral treatment was a factor that contributed to recurrence. However, the reasons for discontinuing treatment during pregnancy differed from those for non-pregnant women. Some patients discontinued treatment on their own judgment because they were concerned about adverse effects on the fetus, while others had difficulty with continuing treatment due to hyperemesis. With regard to the effects of medications on the fetus, medical staff discussed their treatment options with their patients and allowed them to make their own judgments.
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 week 12, patients were clinically and endoscopically evaluated with each patient serving as her or his own control.

**Results:** At entry, 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 BMI was 14.6±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 monotherapy, addition of a low dose prednisolone resulted in 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. Sanjabi: Dr. Sanjabi has a non-regular employment position at JIMRO. All other authors have declared no conflicts of interest.

**References**

**P1076 EARLY SCREENING FOR INFLAMMATORY BOWEL DISEASE IN CHILDREN WITH AUTOIMMUNE LIVER DISEASE**

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**Introduction:** Autoimmune liver disease (AILD) is a major source of TNF. J Immunol 2002;168:3556-42.

**Aims & Methods:** The aim of this study was to review the investigations and outcomes of IBD and AILD in children with a primary diagnosis of AILD and to identify possible risk factors for development of IBD in children with AILD. Children with AILD were identified from electronic case notes between 2007 and 2010 and those with a diagnosis of IBD prior to AILD excluded. AILD was diagnosed and treated as per centre protocol. Diagnostic endoscopy for IBD was performed, based on GI symptoms and/or elevated FC (>60/μl). Data were derived at time of liver diagnosis; endoscopy and last liver follow up. Patients were classified as AILD-IBD or AILD-Mann Whitney and Chi squared test were used to analyse data where appropriate, significance p < 0.05.

**Results:** Out of 37 (12 male) children, diagnosed with AILD (ASC 11), 23 underwent diagnostic endoscopy after a median time from diagnosis of 27.6 [20.1 to 53.9] weeks. 20/23 reported GI symptoms and FC was elevated in 13/18 tested. At endoscopy 57% (13/23) a diagnosis of IBD (AILD-IBD group) (UC (n = 12), UC-BU (n = 1)) was made, 10/23 were within normal limits (AILD group). There was no difference in gender or diagnosis of ASC between the 2 groups. At presentation of AILD, children in the AILD-IBD group were significantly leaner in terms of weight and BMI, had lower haemoglobin, with a trend for younger age at presentation (table 1). GI symptoms and FC > 60/μg were significantly more prevalent in the AILD-IBD group. At the time of endoscopy, 22 were on treatment for AILD with prednisolone and 13 with an additional agent (azathioprine or mycophenolate mofetil). Biochemical remission for AILD was achieved in 45% at endoscopy and in 74% at last liver follow-up (median 4 [3.5 to 5.0] years) with no difference for both groups. All patients are alive; however, in the AILD-IBD group 1 underwent an isolated liver transplantation (LT) and 1 required a subtotal colectomy. One girl underwent LT combined with subtotal colectomy after decomposition of her liver disease.

**Table 1:** Diagnostic parameters of AILD at presentation median [IQR] p value < 0.05

<table>
<thead>
<tr>
<th>AILD-IBD</th>
<th>AILD</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (male)</td>
<td>10(3)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>12.5 [10.3 to 14.6]</td>
</tr>
<tr>
<td>ASC (n)</td>
<td>6 2</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>46.8 [38.8 to 55.9]</td>
</tr>
<tr>
<td>Hb (g/dl)</td>
<td>166.7 [152.0 to 184.0]</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>19.2 [18.2 to 20.2]</td>
</tr>
<tr>
<td>Haemoglobin (g/dl)</td>
<td>113.0 [90.5 to 122.0]</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 concurrent immunosuppression may mask mild symptoms and signs of IBD a lower threshold for endoscopy should be considered in these patients.

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

**References**
Results: Twenty-one patients with chronic refractory angiodysplasia bleeding were recruited in this study, included 10 women, aged between 40-85;11 cases of male, aged between 31–70. One patient with colic vascular malformation died 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, peripheral neuropathy and any other adverse reactions during the treatment. All side-effects resolved when thalidomide was discontinued. (2). The red blood cell after treatment (3.70±0.56×10¹²/L), total procedure time and EDSL procedure time were 40 (15-150) and 4 (1–57) min, respectively. The identification rate of bleeding diverticulum was 60% (123 in 205 enrolled patients). Two mild adverse events occurred; colonic diverticulitis cured with antibiotics and temporary abdominal pain during EDSL.

Conclusion: EDSL is an effective, safe, and convenient treatment method for colonic diverticular hemorrhage.

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

References

P1080 RISK FACTORS FOR EARLY AND LATE RE-BLEEDING IN PATIENTS WITH COLONIC DIVERTICULAR BLEEDING

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Introduction: Incidence of colonic diverticular bleeding has increased in recent years. Colonic diverticular bleeding is problematic because of the following reasons: low detection rate of the bleeding source by endoscopy and frequent re-bleeding. At our hospital, we have a policy of performing emergency lower gastrointestinal endoscopy for all patients with colonic diverticular bleeding within 24h of their admission. We have reported that the following factors contribute to the successful identification of the bleeding source: extravasation revealed by abdominal contrast computed tomography (CT), and mounting of a hood to the tip of an endoscope during lower gastrointestinal endoscopy. However, risk factors for re-bleeding in patients with colonic diverticular bleeding were still unknown.

Aims & Methods: In this study, we examined the risk factors for early and late re-bleeding in patients with colonic diverticular bleeding. From January 2004 to April 2016, we admitted 432 patients (285 men and 147 women, mean age: 71 ± 13 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 early re-bleeding was 3.9 ± 2.4 days, and on average, early re-bleeding recurred 1.7 ± 1.2 times. On average, lower gastrointestinal endoscopy was performed 2.7 ± 1.2 times and endoscopic hemostatic 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 0.31–8.01) 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?

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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 hematoctrit decrease of ≥20% within the first 24 h and/or recurrent bleeding after 24 h of stability. NOBLADS score was calculated and its discriminative capacity for severe ALGIB as well as for outcome was assessed.

Results: Included 118 patients with a mean age of 73.4±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±2.6 g/dL vs 10.2±2.5 g/dL, P < 0.01), were transfused with more units of PRBCs during the first 24 h and during hospital in-stay (0.4±0.9 vs 1.1±1.3, P < 0.01 and 1.0±2.2 vs 5.0±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

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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. We will show so much data on fecal hemoglobin concentration (referred as concentration) and progress of colorectal cancer among them.

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, M, invasive, B, C, D) depending on the concentration. The chi-squared 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 (infra-mucosal 23% (370/1,617) and invasive 30% (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>
<th>Conc.</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-140</th>
<th>140-200</th>
<th>over 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-40</td>
<td>48</td>
<td>198</td>
<td>588</td>
<td>605</td>
<td>993</td>
<td>224</td>
<td>53</td>
<td>495</td>
<td>871</td>
<td>885</td>
</tr>
<tr>
<td>80-140</td>
<td>14</td>
<td>51</td>
<td>185</td>
<td>199</td>
<td>268</td>
<td>107</td>
<td>16</td>
<td>146</td>
<td>286</td>
<td>230</td>
</tr>
<tr>
<td>140-200</td>
<td>17</td>
<td>33</td>
<td>117</td>
<td>100</td>
<td>167</td>
<td>48</td>
<td>25</td>
<td>75</td>
<td>182</td>
<td>132</td>
</tr>
<tr>
<td>200-</td>
<td>55</td>
<td>177</td>
<td>529</td>
<td>497</td>
<td>533</td>
<td>439</td>
<td>169</td>
<td>337</td>
<td>861</td>
<td>370</td>
</tr>
<tr>
<td>total</td>
<td>134</td>
<td>451</td>
<td>1,419</td>
<td>1,401</td>
<td>1,561</td>
<td>861</td>
<td>264</td>
<td>1,053</td>
<td>2,200</td>
<td>1,617</td>
</tr>
</tbody>
</table>

Conclusion: In 20–30 μg Hb/g stool, there were CRCs with smaller size, no invasion, 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 detectable 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

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Introduction: Hodgkin lymphoma (HL) survivors treated with abdominal radiotherapy and/or alkylating chemotherapy have an increased risk 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 among 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 a first colonoscopy in a general population cohort that underwent a primary screening colonoscopy (n = 1276 asymmetrical individuals between 50–75 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% (95% CI 6–18%), p < 0.001). Advanced adenomas were detected in 14% (8–21%) of HL survivors and 9% of controls (7–10%, p = 0.001). The prevalence of advanced adenomas 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 1% (0–1%) of controls (p < 0.001). Advanced serrated lesions were more often detected in the left side of the colon (12% (6–18%) vs. 4% (3–5%), p < 0.001). Serrated polyps were more prevalent in advanced colorectal neoplasia. Colorectal surveillance should therefore be implemented as standard of care.

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 patients registered in the Republic of Korea National Health Insurance Corporation who were diagnosed with colorectal cancer (CRC) 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 prostate cancer (HR = 2.30, 95% CI = 2.182–2.426; P < 0.001). Multivariate 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

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Introduction: This study was conducted within a Dutch national 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 (clinically detected), 118 (1.8%) were detected during surveillance colonoscopy (p < 0.001) of CRC screening (screen detected), with two third of the cancers 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 (clinically detected), 118 (1.8%) were detected during surveillance colonoscopy and/or procarbazine.

Conclusion: Screen detected cancers were more often diagnosed in an earlier stage (stage I and II) compared with clinically detected cancers, 1,687 (66.5%) and 1,557 (66.3%), 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 cancers 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>Stage</th>
<th>Screen detected</th>
<th>Clinically detected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n, %)</td>
<td>(n, %)</td>
</tr>
<tr>
<td>I</td>
<td>254 (38.3%)</td>
<td>637 (54.5%)</td>
</tr>
<tr>
<td>II</td>
<td>203 (30.8%)</td>
<td>193 (16.5%)</td>
</tr>
<tr>
<td>III</td>
<td>202 (31.7%)</td>
<td>147 (12.2%)</td>
</tr>
<tr>
<td>IV</td>
<td>277 (25.7%)</td>
<td>217 (20.2%)</td>
</tr>
<tr>
<td>V</td>
<td>130 (11.8%)</td>
<td>188 (17.0%)</td>
</tr>
</tbody>
</table>

Disclosure of Interest: All authors have declared no conflicts of interest.
P1087 LOCATION AND SEX PREDOMINANCE OF MISMATCH REPAIR DEFICIENCY IN COLORECTAL CANCER FROM IVORY COAST DIFFER FROM ITS EUROPEAN COUNTERPART

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Introduction: According to European and American series, 1-3 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,2 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 deficiency in Ivory Coast and to compare the data with those from a tertiary center in Belgium. Immunohistochemistry for MLH1, MSH2, MSH6 and PMS2 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 female patients. 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 revealed 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
Conclusion: Study findings confirmed that CRC screening was effective in reducing the number of oncological surgical oncology procedures particularly with regard to the distal colon and rectum. Data analysis showed that the screening seemed to accelerate reaching the peak rate in surgical procedures that took place in 2007. After that time point the number of operations began to fall as far as the distal colon was concerned (it fell by 37.3%). Finally our data suggest that the real benefit in reduction of oncological surgery procedures is due to the first screening colonoscopy.

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

P1090 ETHNIC VARIATION IN ADENOMA DETECTION IN THE UK FLEXIBLE SIGMOIDOSCOPY BOWEL CANCER SCREENING PROGRAMME


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Introduction: The NHS bowel scope screening programme was introduced in 2013 and all 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 Whites. 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 British Asians undertaking colorectal cancer screening compared to White British. 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 and 30th Feb 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, 359 British white individuals (82%) and 778 British Asian Indians were screened. Six cancers were detected in British White (0.14%). During the period studied, 3509 British white individuals (82%) and 778 (British Asian Indians 18%) were screened.

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

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Introduction: We identified for the first time that DDXB (DEAD box polypeptide 27) gene was amplified in colorectal cancer (CRC) by whole genome sequencing. Amplification of DDXB was detected in 47% (47/100) of primary CRC tumors and positively correlated with its mRNA overexpression. DDXB plays a pivotal oncogenic role in colorectal carcinogenesis by promoting cell proliferation and inhibiting apoptosis. In this study, we investigate its function, mechanism of action and clinical implication in CRC.

Aims & Methods: Downstream effectors and pathways of DDXB were identified by promoter luciferase reporter assay, RT2 Profiler PCR array and western blot. The interacting partners of DDXB were screened by BioID method and further validated using immunoprecipitation assay and immunofluorescence staining method. Clinical implication of DDXB was assessed in two human CRC cohorts by quantitative PCR method and immunohistochemical staining of tissue microarrays.

Results: Promoter luciferase reporter assays revealed that DDXB mainly activated nuclear factor kappa B (NF-κB) pathway in CRC cell lines (HCT116 and SW480). Ectopic expression of DDXB promoted transcription of NF-κB signaling targets including BCL2A1, BIRC3, CCL20, CXCL13, NFKBIA, TNF and TNFAIP3. Conversely, silencing of DDXB showed an opposite effect on NF-κB signaling. Treatment of NF-κB inhibitors CAPE and JSH-23 abrogated the promoting effect of DDXB on CRC cells growth. We revealed that DDXB enhanced and prolonged NF-κB signaling via reducing the accumulation of nuclear IkBα, which negatively regulates transcriptional activities of NF-κB and transport NF-κB proteins back to the cytoplasm. DDXB overexpression markedly increased the recruitment of NF-κB p65 inside nuclear and promoted NF-κB activity in CRC cells under TNF-α stimulation. NPM1 was identified as a potential binding partner of DDXB by BioID method to screen for protein-protein interactions. The interaction of NPM1 and DDXB inside nucleus was further validated by endogenous immunoprecipitation assay and immunofluorescence staining. Knockdown of NPM1 abrogated DDXB-activating NF-κB signaling, as well as its tumor-promoting function. Kaplan-Meier curves showed that higher DDXB 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: DDXB plays an important oncogenic role in promoting CRC tumorigenesis via activation of NF-κB pathway. Higher expression of DDXB is correlated with poor prognosis in CRC patients.

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

References
All authors have declared no conflicts of interest.

P1092 CLINICO-PATHOLOGICAL STUDY OF SERRATED LESIONS OF THE COLORECTUM

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Introduction: Serrated lesions of the colorectum are the precursors of microsatellite unstable carcinomas. However, their clinical and pathological features are still unclear and need further evaluation and clinical implication.

Aims & Methods: The aims of this study was to clarify the clinicopathological features of serrated colorectal lesions. We reviewed clinical charts and pathology files of 3532 endoscopically resected specimens performed during January 2007 and December 2016 in our hospital. A total of 463 serrated lesions (8.7%) were classified into three categories: HP (hyperplastic poly), SSA/P (serrated adenomas/polyps), and TSA (traditional serrated adenoma), according to the WHO criteria. We examined the features of these cases and evaluate the morphological characteristics by using immunohistochemical staining for Ki-67 and the expression of MUCs (MUC2, MUC5AC and MUC6) in differentiating serrated lesions.

Results: Of these 463 lesions, a total of 241 (52.1%) were HP, 102 (22.0%) SSA/P, and 120 (25.9%) TSA. Male to female ratio (M/F) was 2.38 for HP, 1.09 for SSA/P, and 2.45 for TSA. Mean size of SSA/Ps (13.1 mm) and TSSAs (10.4 mm) were significantly larger than that of HP (8.1 mm) (p<0.005, respectively). SSA/Ps were located predominantly in the proximal colon, whereas HP and TSA were mainly located in the sigmoid colon and rectum. 84% of SSA/Ps were flat in macroscopic appearance. SSA/Ps and HPs were whitish or almost the same as adjacent mucosa in color, whereas SSA/Ps had a tendency to be reddish. Magnified colonoscopy showed Type II open pit pattern as characteristic of SSA/Ps, whereas pinecone-shaped pit pattern as that of TSSAs. Incidences of synchronous concomitant carcinomas in HP, SSA/P, and TSA were 0% (0 out of 241), 2.9% (3 out of 120), and 4.2% (5 out of 120), respectively. Ki-67 positive cells in HP showed regular, symmetric distribution, and those in SSA/P did irregular asymmetric pattern. Most of those cells in TSA distributed in focal so-called ectopic crypts. Expression levels of MUC2, MUC5AC and MUC6 were still unclear and need further exploration.
significantly different between serrated lesions, SSA/Ps and HPs were positive for MHC-II and CD80 and CD86 expression, while CD4 was low. 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 pre-malignant lesions of colorectum and we should detect these lesions and completely remove 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


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Introduction: It is generally accepted that exosomes, small, membrane-bounded vesicles are formed in multivesicular bodies (MVBs) which fuse with 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 vesicle carrying secretory vesicles during their secretion.

Aims & Methods: Our aim was to examine this phenomenon in migrating colorectal cancer (CRC) cells in situ. Immunohistochemistry (IHC) examination of migrating, individual cancer cells was performed in surgically removed, metastatic CRC samples (n = 10). We used epithelial-specific cytokeratin (cytokeratin-8/18/C20) and cell membrane (E-cadherin) markers for the identification of migrating CRC cells as well as ALIX and CD63 proteins for the detection of exosomal transport. Samples were analyzed with confocal and stimulated emission depletion (STED) microscopy-based 3D reconstructions.

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 = 98/114) of migrating CRC cells. E-cadherin-HC 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. STED-microscopic images showed that released ECs were composed smaller, distinguishable ALIX-positive spheroids of 98 to 150 nm diameter (mean ± SD: 128.96 ± 16.73 nm), which fall into the size ranges of exosomes.

Conclusion: Our study demonstrates 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 regulation of cancer development, which effect may differ from that mediated by conventionally secreted exosomes.

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

P1094 ALTERED ARGININE METABOLISM IN HYPERTROPHIC INTESTINAL EPITHELIAL CELLS: A POTENTIAL ROLE IN TUMORIGENESIS AND WOUND HEALING


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Introduction: We performed immunohistochemistry on intestines from ApcMin/+ mice, and ApcMin/+ mice and colorectal cancer biopsies and found that arginine metabolism is of utmost importance. In colorectal cancer tissue, intestinal organoids from APCfl/fl mice were transduced with a shRNA for ASS1. RNA and protein levels of ASS1 were measured by qPCR and western blot. Arginine concentrations were determined by HPLC. Protein synthesis was measured by [35S]-methionine labelling.

Results: ASS1 expression is highly increased in adenomas and hyperpliferative crypts during epithelial repair after mechanical wounding and irradiation wounds, compared to homeostasis. Variable expression of ASS1 is seen in different colorectal cancer cell lines, and expression correlates with resistance against arginine deprivation. In APC−/− organs derived from the APC−/− genotype, ASS1 RNA and protein are highly expressed, with concomitant increase of intracellular arginine. Upon knockdown of ASS1 in ApcMin/+ organs, arginine synthesis is reduced and organ growth is compromised. Furthermore, knockdown of ASS1 decreases overall protein synthesis. Conclusion: In a hyperproliferative state, intestinal epithelial cells synthesise arginine via ASS1. Our data suggests this plays a functional role to support growth and proliferation during intestinal carcinogenesis and repair.

Disclosure of Interest: G.R. van den Brink: G.R. van den Brink is an employee of GlaxoSmithKline

All other authors have declared no conflicts of interest.

P1095 ENHANCED COLONIC TUMORIGENESIS IN TLR4-DEFICIENT MICE IS ASSOCIATED TO IMPAIRMENT OF ANTIGEN PRESENTATION BY EPITHELIAL CELLS

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Introduction: Toll-like receptors have a pivotal role in natural immunity but their role is indefinite and, sometimes controversial, in tumor development. TLR4 signalling through MyD88 has been linked to tumour growth and progression in mouse models, whereas in human TLR4/Myc signaling seems to correlate with colorectal cancer poor prognosis [1]. On the other hand, TLR4 signalling seems to be correlated to adaptive immunsurveillance in inflammatory related colonic carcinogenesis [2].

Aims & Methods: The aim of this study was to define the role of TLR4 in the immune surveillance mechanisms in a non-inflammatory model of colonic carcino-nogenesis. The azoxynemethane (AOM) induced colon carcinogenesis mouse model was used. Colonic mucosal samples were collected from wild type (WT) C57Bl/6 and TLR4 knock out (KO) mice before AOM administration (T0), at 4 and at 8 months after the first AOM injection. Colons were removed and examined for occurrence of adenoma and inflammatory infiltrate. Macroscopic tumor load was assessed counting the number of polyps. Flow cytometry on colonic mucosal single cell suspension was performed, 98 cells were counted to express CD25, CD38 or CD69, for CD4+ lymphocytes expressing CD25, CD38 or CD69, for CD4+ lymphocytes expressing CD25 or CD25 and Fop3 and for epithelial cells expressing CD80 or MHC-I or MHC-II were performed. Non parametric statistics was used.

Results: In TLR4KO mice sacrificed at 8 months, 1.4 polyps/mouse were observed whereas none was observed at T0 or at 4 months (p = 0.006). In TLR4KO mice at 8 months, the rates of epithelial cells expressing CD80, CD80+MHC-I+ and MHC-II+ were significantly lower than those at a T0 or 4 months (p = 0.01, p = 0.003, p = 0.003, p = 0.001, respectively). Moreover, at 8 months, 5/7 TLR4KO mice compared to 0/7 WT ones had at least a colonic adenocarcinoma (p = 0.02). At this time point, CD4+CD25+, CD4+CD25+FoxP3+, CD8+CD28+, CD8+CD38+ cells rate was significantly lower in TLR4KO mice than in WT ones (p < 0.001, p < 0.001, p = 0.01, respectively). Similarly, at 8 months the rate of epithelial cells expressing MHC-I and MHC-II were significantly lower in TLR4KO than in WT mice (p = 0.002, p < 0.001, respectively).

Conclusion: TLR4 deficiency significantly accelerates the progression of colonic carcinogenesis through a progressive decline of antigen presentation and lack of co-stimulation at later stages. These impairments are associated to a decline of T cell response in all its form (Treg, T helper and cytotoxic). All these findings are coherent with a pivotal role of TLR4 in the immune surveillance mechanism.

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

References
P1096 ENDOSCOPIC FOLLOW UP CAN SELECT PATIENTS FOR MULTI-GENE TESTING IN ATTENUATED ADENOMATOUS POLYPOSIS WITH NO APC OR MUTYH IDENTIFIED MUTATIONS

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Introduction: Less than a hundred polyps defines attenuated familial adenomatous polyposis (AFAP). APC or MUTYH involvement has been described in 60% of the cases. The natural history of AFAP without identified genetic defects is not enough evaluated. In our study we compare clinical and endoscopic features of polyposis in patients carrying APC or MUTYH mutation and wild type patients.

Aims & Methods: 102 cases (35 F, 67 M; mean age 51; range 28–79) of AFAP were registered at our Institution between 1996 and 2014. They had no cancer family history and presented more than 10 adenomas at index colonoscopy. Genetic testing for APC and MUTYH genes was performed. Patients were put in a program, after having cleaned the colon, consisting in colonoscopy after one year and then the colonoscopic interval was based on the number of polyps from 1 to 3 years. Odds Ratio test was used to compare APC or MUTYH mutated and wild-type patients.

Results: Out of 102 patients with AFAP we identified a genetic defect in 36 patients (35.3%; 12 with APC and 24 MUTYH) and 66 (64.7%) were wild-type. The mean endoscopic follow up was 10 years (2–31) in the mutated group and 9.7 years (2–23) in the wild-type group. Table 1 describes endoscopic and clinical features between the two groups. We observed some statistically differences between groups: the mutated group was younger than 50 years of age with a higher number of polyps, right colon was mainly involved and endoscopic follow-up was mostly every year. On the other hand, 14% of mutated patients underwent colectomy during follow-up and they displayed few adenoma recurrences in 24% of cases. On the other hand 1% underwent colectomy in 2 years and 1% in 1 year. Odds Ratio test was used to compare APC or MUTYH mutated and wild-type patients.

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 observed and further genetic investigation should be offered by multi-gene testing.

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

Table 1:

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<th>APC or MUTYH mutation</th>
<th>Wild type</th>
<th>Statistics</th>
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<td>Gender</td>
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<td>Age at onset</td>
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<tr>
<td>Male</td>
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<td>472</td>
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</tr>
<tr>
<td>Female</td>
<td>19</td>
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<td>3,661</td>
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<tr>
<td>No of polyps</td>
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<tr>
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<td>17</td>
<td>472</td>
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<td>≥ 20</td>
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<td>0.8411</td>
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Table 1: Continued

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<th>Wild type</th>
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P1097 GLOBAL DNA HYMETHYLATION ALONG THE COLORECTAL NORMAL-ADENOMA-CANCER SEQUENCE

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Introduction: Besides local hypermethylation on promoters of certain tumor suppressor genes, global DNA hypomethylation is characteristic in various types of cancers including colorectal cancer (CRC). The DNA methylation level of long interspersed nuclear element-1 (LINE-1) repetitive retrotransposon sequences constituting 17% of the human genome can be used to estimate global methylation level.

Aims & Methods: We aimed to analyze the alterations of the global DNA methylation levels along the colorectal normal-adenoma-carcinoma sequence progression on the basis of LINE-1 methylation and to study the methyl-cytosine pattern in tissue samples. Genomic DNA was isolated from 10 colorectal adenoma, 10 CRC and 30 normal colonic biopsy samples. Bisulfite conversion of DNA samples was performed using EZ DNA Methylation-Direct Kit (Zymo). For methylation level quantification of the LINE-1 retrotransposable element, bisulfite specific PCR (BS-PCR) was applied and 146 bp long PCR products were sequenced on Pyromark Q24 system (Qiagen). Tissue localization of 5-methylcytosine (5-mC) in normal, adenoma and CRC tissues was analyzed by immunohistochemistry using mouse monoclonal anti-5mC antibody (Genetex).

Results: According to the LINE-1 bisulfite sequencing results, significant (p < 0.01) global DNA hypomethylation was detected both in CRC (63 ± 8.7%) and adenoma samples (67 ± 5.1%) compared to normal tissue (72 ± 1.4%). 5-mC labeling of both the epithelial and stromal components of normal samples was strong (scoring values: +2 and +3) with diffuse and nuclear staining. In adenomas, decreased nuclear 5-mC staining (scoring value: +2) was detectable in the epithelium and the stroma compared to normal epithelium. In CRC samples significantly lower 5-mC levels could be observed than in normal tissue samples (p < 0.05).

Conclusion: Global DNA hypomethylation could be shown in CRC compared to healthy normal tissue samples both by LINE-1 bisulfite-sequencing and by 5-mC immunohistochemistry. Genome-wide DNA methylation decrease occurs already in adenoma stage of colorectal carcinogenesis.

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

P1098 CIRCULATING miRNA CHANGES IN HUMAN COLORECTAL CANCER DEVELOPMENT AND IN ANIMAL MODEL

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Introduction: miRNAs have a critical relevance in regulation during tumorigenesis. The expression profiles of miRNAs alter along tumor progression moreover; these miRNAs may spread into tumor macro- and microenvironment.

(continued)
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 human peripheral blood samples. The main purpose of our study was to determine the origin of detected miRNAs in tumor-associated C57BL/6 and non-tumor CBAJ mice tumor models. To achieve that goal, human peripheral blood and biopsy of normal (N), tubular (AT), tubulovillous adenoma (ATV) and colorectal cancer (CRC) were collected and plasma were also collected two times a week over 45 days from C57BL/6-c38, CBAJ mice. MiRNAs were isolated and Affymetrix GeneChip miRNA array analysis was performed for screening of the altered miRNA profile. RT-qPCR miRNA expression was performed.

Results: In the case of human samples out of 1373 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 all CBAJ mice, C57BL/6-c38, CBAJ vs 1988 in plasma. In the case of N vs 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 176 miRNAs in late tumor stages. Based on CBAJ-C38 mouse model experiment where the injected tumor 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 (388 ± 373) and 94 ± 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 immunological system or from other metabolites released far from the primer tumor location.

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

References:
**P1101** MIR-126 REGULATES TUMOR GROWTH AND METASTASIS IN COLORECTAL CANCER BY RECRUITING TAM ASSOCIATED MACROPHAGES THROUGH PARACRINE SIGNALING OF CXC12

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**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 highly 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 is 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-CXC12-IL6 axis plays in it. Method: (1) The effect of miR-126 on CXC12 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 CXC12 expression, then detect the 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 antibodies were added. 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 CXC12 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 CXC12/CXCR4 axis by AMD3100 could reverse this effect, via decreasing miR-126 of colorectal cancer cells recruiting TAMs, therefore down-regulate-Ecatherin 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, vice versa.

**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 CXC12 to inhibit colorectal cancer growth and metastasis.

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

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**P1102** THE EFFICACY OF NEXT-GENERATION OF IMAGE ENHANCED COLONOSCOPY (BLUE LASER IMAGING) IN THE DETECTION OF COLORECTAL LESIONS: A PILOT STUDY

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**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-WL 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-WL 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 were 2.84 and 1.90, 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.

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**P1103** COLORECTAL CANCER SCREENING COLONOSCOPY - ABSENT DISTAL POLYPS IN ADVANCED PROXIMAL NEOPLASIA

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**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 (NORCCAP) 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, histology, location of polyps, number of polyps, polyp size and therapies.

**Results:** Mean age 67, Male 60.4%. Polyps were found in 199 patients (61%), 488 polyps found in total, mean number of polyps 2.5 (Range 1–14), mean size 7 mm (Range 1 mm–60 mm), 49 (15.5%) 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.

**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.

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**References:**


P1104 STUDIES ON CLINOPATHOLOGICAL CHARACTERISTICS AND THE LONG-TERM PROGNOSIS OF DEPRESSIVE-TYPE COLORECTAL CARCINOMAS
S. Kudo1, T. Kurata1, K. Ichimasa1, Y. Kouyama1, S. Matsudaira1, N. Toyoshima1, Y. Mori1, M. Misawa1, N. Ogata1, T. Kudo1, T. Hisayuki1, T. Hayashi1, K. Wamakura1, E. Hidaka1, T. Baba1, F. Ishida1
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Introduction: Colorectal cancers have two development theories. One of the development theories is “adenoma-adenocarcinoma sequence” developing from protruded-types “polyps” 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. Aim: & Methods: We classified the pathological 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 polyps (49.1%) non-adenomatous lesions. No data were available from 90 polyps (40.2%) were located in the left, 126 polyps (56.3%) in the right colon, 71 (31.7%) were 10 mm, 71 (31.7%) were ≥ 10 mm. 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 (50.8%) were adenoma-tous and 110 polyps (49.1%) non-adenomatous lesions. No data were available.

Conclusion: Our results demonstrate that degree of ITH of KRAS/TP53 mutations at the moment of pathological classification of colorectal carcinomas. Intratumoral variations in the microscopc structure may represent molecular subclones in early colorectal lesions and may be predictive of the malignant progression.

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

P1106 THE DIAGNOSTIC VALUE OF HYPOXIA INDUCED EXOCYTOPLASMIC VESICLES IN COLORECTAL CANCER PATIENT PLASMA
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Introduction: Hypoxia signaling has been found to enhance inflammatory cell survival, chemoresistance, motility, tumor 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 cells.

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 were quantified by Nanoparticle tracking analysis (NTA) and CAIX positive EVs were screened by Apoacea technology.

Results: Statistically significant increase in the amount and size of EVs was found in CRC compared to HD irrespective of hypoxia status. The rate of CRC EVs was 4.9%, 52.2% and 50.8%, 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%, 6.8% and 5.0%, respectively. And 2 depressive-type lesions had synchronous liver metastases.

Conclusion: Depressive-type colorectal carcinomas invade massively even when they are small. They had higher risks of vascular invasion, poorly differentiated histology, increased number of mitotic figures, scattered submucosal lymphoid clusters, higher expression rate of CD34, and lower expression rate of CAIX. The rate of lymph node metastasis was 11.6%, 6.8% and 5.0%, respectively. And 2 depressive-type lesions had synchronous liver metastases.

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

P1107 THE GENESIS STUDY: GENETIC BIOSY FOR PREDICTION OF SURVEILLANCE INTERVALS AFTER ENDOSCOPIC RESECTION OF COLORECTAL POLYPS
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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% by sessile serrated adenomas (SSAs). 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 study. A total of 418 polyps were sampled from 100 patients (64.5% females and 35.5% males) that were submitted to resection. Up to 6 representative polyp biospies 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 these tissues using the NGS panel, that includes 83 cancer-related genes; GenomeRead RNAseq Targeted Panels V2, Quagen® 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%) ≥ 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 (50.8%) were adenomataous and 110 polyps (49.1%) non-adenomatous lesions. No data were available.
P1108 QUANTITATIVE, FRAGMENT LENGTH AND GLOBAL DNA METHYLATION LEVEL ALTERATIONS OF CIRCULATING CF-DNA IN COLORECTAL ADENOMA, CANCER AND INFLAMMATORY BowEL DISEASES
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Introduction: Cell-free DNA (cDNA) 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 cDNA is very low, but it rises in chronic disorders such as cancer. At the same time, very high cDNA level can be measured in healthy people during physical exercise.

Aims & Methods: We aimed to analyze cDNA changes (quantity, fragment length, global DNA methylation level) in physiological conditions (during physical exercise) and its alterations in neoplastic and inflammatory colorectal diseases. Plasma was separated from 64 patients (16 colorectal carcinomas (CRC), 13 colorectal adenomas (AD), 18 inflammatory bowel disease (IBD), and 17 normal donors without evidence of disease). Plasma samples were also collected from 6 healthy athletes, before, and during and after training. DNA was isolated with High Pure Viral Large Volume NA isolation Kit (Roche). cDNA was quantified with Qubit fluorometry (Invitrogen). CDCN fragment length distribution was assessed by Bioanalyzer 2100 using High Sensitivity DNA assay (Agilent). Global DNA methylation was analysed by bisulfite pyrosequencing of long interspersed nuclear element-1 (LINE-1) (Quagen).

Results: High cDNA amounts were observed in plasma samples of patients with colorectal adenoma (20.61 ± 10.70 ng/ml), colorectal cancer (24.13 ± 20.02 ng/ml) and IBD (22.27 ± 14.60 ng/ml) compared to healthy subjects (10.33 ± 3.22 ng/ml). Highly elevated cDNA amounts were found in plasma samples of athletes during physical exercise (66.17 ± 29.00 ng/ml), while the cDNA amount decreased after physical activity (51.87 ± 39.80 ng/ml).

Conclusion: Global DNA hypomethylation was shown in CRC plasma samples with advanced tumor stage (N: 68% ± 0.80%, AD: 79% ± 1.70%, advanced CRC: 70% ± 0.03%). This finding was confirmed in samples of colorectal AD, CRC, IBD patients and also in healthy athletes during physical exercise. CDCN fragment length analysis showed differences between each group. Global DNA hypomethylation was observed only in patients with advanced tumor stage. Based on our results, the above DNA analysis methods might contribute to non-invasive detection for colorectal diseases.

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

P1109 ANALYSIS OF SRFP1, SRFP2, SDC2 AND PRIMA1 PROMOTER METHYLATION IN CELL-FREE PLASMA DNA FOR NON-INVASIVE DETECTION OF COLORECTAL ADENOMA AND CANCER
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Introduction: Early detection, primarily in asymptomatic patients, remains a primary goal of colorectal cancer (CRC) screening. DNA methylation alterations, in addition to gene expression, are common in CRC. For this reason,粪便 DNA methylation seems to be a common phenomenon in colorectal cancer (CRC) influencing gene expression and contributing to tumor formation. In recent years, blood-based assays came into focus as potential screening tools for colorectal adenoma and cancer cases, as the analysis of the methylation status of circulating cell-free DNA (cDNA) in plasma samples provides a good opportunity for cancer detection.

Aims & Methods: Our aim was to analyse the methylation pattern of four selected genes in biopsy and plasma samples of healthy, colorectal adenoma and CRC patients. Moreover, we aimed to examine the effect of methylation alterations on protein expression. MethyLight (ML) PCR was used after bisulfité-conversion to study certain DNA sequences of the promoter regions of SRFP1, SRFP2, SDC2 and PRIMA1 in 32 biopsy-plasma pairs and in 121 additional plasma samples. DNA methylation was measured by using methyl capture sequencing data from our research group. Furthermore, the methylation status of the four candidates' whole promoter regions was examined in silico using Illumina Infinium HumanMethylation450 BeadChip (Illumina). The data was downloaded from The Cancer Genome Atlas (TCGA) database and from NCBI Gene Expression Omnibus Database (GEO accession number: GSE48684). In order to examine the effect of promoter methylation on the protein expression, immunohistochemistry analysis was performed.

Results: After analyzing ML assays, methylation of SRFP1, SRFP2, SDC2 and PRIMA1 was observed in 85.1%, 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 makers together were able to distinguish 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 methylation pattern of the four markers present in colorectal cancer.

Conclusion: Our findings suggest that SRFP1, SRFP2, SDC2 and PRIMA1 can be providing epigenetic biomarker candidates for colorectal adenoma and cancer diagnosis with high sensitivity and specificity.

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

Reference
advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urine NMR 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

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Introduction: Symptoms alone are poor predictors of underlying colorectal 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) 2. We have reported that undetectable faecal haemoglobin (f-Hb), measured by a faecal immunochemical test (FIT) is a good rule-out test for SBD. 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 an analytic range of <10 to >400 μg Hgb/g faeces. Referral rates with FIT were examined along with clinical findings at colonoscopy.

Results: 5,655 FIT tests were received. 76.2% had undetectable f-Hb, and 152 (2.7%) were untestable. 4,108 patients were referred of whom 2,338 (57%) 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 SBD patients had co-existing iron deficiency anaemia, 14/25 HRA and 3.6/1 IBD had anaemia or diarrhoea. 32.2% of those with f-Hb >10 μg/g Hgb faeces had SBD rising to 54.9% in those with f-Hb >400 μg/g Hgb faeces. 2,677 patients completed a FIT but were not referred, in whom 40.1% 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 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 Immunotics, Ocean, New Jersey, USA; Mode Diagnostics, Glasgow, Scotland; and Kyowa-Medex Co., Tokyo, Japan: and has received travel support from Alpha Labs, Eastleigh, UK.

All other authors have declared no conflicts of interest.

References


P1113 ARTIFICIAL INTELLIGENCE CAN PREDICT THE PRESENCE OF LYMPH NODE METASTASIS IN T1 COLORECTAL CANCER

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Introduction: Most T1 colorectal cancers (CRCs) undergo surgical colectomy in western countries with established clinical guidelines despite the low incidence (approximately 10%) of lymph node metastasis (LNM). Therefore, many patients without out LNM undergo unnecessary surgeries.

Aims & Methods: To reduce unnecessary surgeries, we aimed to predict the risk of LNM in T1 CRCs by using artificial intelligence (AI). Data on 690 consecutive patients with T1 CRCs who had undergone colectomy between April 2001 and March 2016 were retrospectively analyzed. Data of a randomly selected 590 patients were used for machine learning for the AI model, which analyzed five clinopathological factors: tumor location, lymphatic invasion, vascular invasion, lymph node metastasis and histological grade. The remaining 100 patients served as a test set for validating the AI model and output the predicted LNM as positive or negative. To validate the AI model, sensitivity, specificity and
accuracy were calculated and 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%-65%) vs. 12% (6%-21%) vs. 8% (3%-15%) and 71% (61%-80%) 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).

Conclusively 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 17K19721) from the Japan Society for the Promotion of Science.

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

References


P1114 RISK FACTORS OF ADVANCED METACHRONOUS NEOPLASM IN COLONOSCOPIE SURVEILLANCE AFTER COLON CANCER RESECTION

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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 colonic resection for non-metastatic colon cancer between January 2002 and December 2012 in a single tertiary center were retrospectively reviewed.

Results: A total of 728 patients were enrolled in this study. Surveillance colonoscopy was performed after perioperative clearing colonoscopy. Among the patients, 182 (61.6%) were male, and the median age was 65 years. On perioperative 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), 16 advanced metachronous neoplasms 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 perioperative 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.

Conclusions: Patients who had distal colon cancer, accompanying high-risk adenomas on perioperative 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 HIGH DEFINITION-WHITE LIGHT ENDOSCOPY FOR DETECTION OF POLyps IN ROUTINE PRACTICE

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Introduction: Despite major advances in white light endoscopy detection of colon polyps remaining challenges with significantly low 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 300° 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-month period. Patients were randomized to either FUSE (FUSE colonoscope CDVL slim c38) or standard frontal view (SFV) colonoscopy (Olympus Evis Exera III 190). The primary outcomes were polyp detection rates (PDR), diverticulum 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 excellent intubation 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 for the primary endpoints of polyps detection rate (PDR), diverticulum 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 (26.7±6 min) than with FUSE (21.5±10.7 min (-4.6, IQR 95% -8 a –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 polypsis 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 discomfort. 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


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Introduction: Underwater Endoscopic Mucosal Resection (UEMR) has been demonstrated as a safe and effective technique for removal of flat and sessile colorectal lesions. Until now, only UEMR with cap has been described in literature. In addition there is no consensus about the endoscopic settings.

Aims & Methods: This prospective study was conducted between January and November 2016 in two university tertiary referral centers. UEMR was performed using a standard colonoscope without the distal cap. The lesions were marked with snare tip prior to resection. Insufflation was switched off. Then, the colon lumen was entirely deflated. Water at room temperature was infused using an irrigation pump until complete filling of the lumen was achieved. All gas pockets in the operative field were evacuated. Two sizes of polypectomy snare (13 and 25 mm) were used according to the preference of the endoscopist. No submucosal injection was performed. One of these three different endoscopic settings (DRYCUT, AUTOCUT and ENDOCUT) was selected. All resection wounds were carefully inspected after UEMR. Endoclip was employed for management of bleeding and suspected perforation.

Results: Between January and November 2016, 45 patients (27 female, mean age 67 years, range 33–87) with 55 non-pedulated colorectal lesions (mean size 16 mm, range 10–40 mm) were included. Six lesions were located in cecum, 21 in the ascending colon, nine in transverse, eight in descending colon, five in sigmoid, and six in rectum. In five patients, we selected DRYCUT mode; in an AUTOCUT; and in twenty-five the ENDOCUT mode. All lesions were successfully and completely removed by UEMR. The procedure time was recorded in 24 resections (mean 13 minutes, range 4–40). Thirty-three of them were removed en bloc (60%). Histology revealed the following: 40% tubular adenomas; 20% tubulovillous adenomas; 25.45% sessile serrated adenomas; 36.5% traditional serrated polyps; 7.25% intramusosal adenocarcinomas and
3.65% were superficial submucosal carcinomas (<1000μm). During UEMR, two cases (both using AUTOCUT mode) of sprouting 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.

Conclusion: This study supports the existing data indicating acceptable rates of technical success and low incidence of adverse events with UEMR. The results of this study without cup were similar with the previous ones using cup. Further comparative studies with and without cup, performed with different settings and especially between UEMR and traditional EMR are needed.

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

References

**P1117 ADENOMA DETECTION RATE INFLUENCES RISK PREDICTION OF METACHRONOUS ADVANCED COLORECTAL NEOPLASIA IN LOW-RISK PATIENTS**

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Introduction: Current guidelines recommend surveillance colonoscopy 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 cancer was lower based on clinical characteristics and colonoscopy quality. We identified 7,711 participants with no or non-advanced adenomas at first-time screening colonoscopy. 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 without a neoma. Furthermore, incidence of metachronous AN was significantly higher in individuals who were colonoscoped in the endoscopist with ADR <32% than in those screened by endoscopists with a higher ADR (≥32%) (3.2% vs. 0.6%, 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)**

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Introduction: The technique of endoscopic submucosal dissection has recently been improved, and large and complexed 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 such 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. Patients after PAEM cases 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 deep submucosal invasion, and 1 case in which polyp resection with en bloc was performed en bloc. In our hospital and affiliated hospital, 9 cases were treated. PAEM was preferable in all cases. Three cases which achieved resection with MR sign were performed 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 for chemoNRAD. 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. S. Tanaka receives royalties from its sale. All other authors have declared no conflicts of interest.

References
Aims & Methods: Our aims were to assess the frequency of local recurrence after EMR (15), to identify risk factors for recurrence, and to provide guidelines for follow-up suggestions. We considered all consecutive patients undergoing RFA of flat or sessile adenomas ≥ 10 mm containing high-grade dysplasia or adenocarcinoma until pt1 from May 2015 to April 2016. EMR procedure was performed by 2 endoscopists with extensive EMR “in-jet and cut” experience and only lesions with a positive lifting sign were endoscopically treated. An endoscopic follow-up was performed at a planned interval of 3, 6 and 12 months by using high-definition instruments white light (HD-WL) and narrow-band imaging (NBI) allowing an appropriate score assessment with the execution of biopsies when needed. Data collection included: (a) lesion size, morphology, Paris classification, pit pattern (kudo), technique of removal (en bloc vs piecemeal) and histology for all primary lesions and RRA; (b) Information on lesion building, grading, micronivation, 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 sigmoideal colon (40%), ascending colon (25%) and cecum (12%). According to the morphological characteristics, 60% of lesions were removed “en bloc” and 40% “piecemeal”. Metallic clips were used as prophylaxis in 35% of patients and only 1 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 with histologically strongly suggesting RRA (pT1, 2 cm, grading G2, free-disease margins <1 mm). As concerned lesions removed “piecemeal”, RRA (70% high grade dysplasia and 30% low grade dysplasia) was higher in pT1, lesions found with other factors. Conclusion: EMR results a technique safe and effective particularly for lesions 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 with histologically strongly suggesting RRA (pT1, 2 cm, grading G2, free-disease margins <1 mm). As concerned lesions removed “piecemeal”, RRA (70% high grade dysplasia and 30% low grade dysplasia) was higher in pT1, lesions >2 cm, non-granular LST. No correlation was found with pT1 lesions. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Abstract No: P1122

List of 6 cases with malignant colonic obstruction in whom “Over-the-Catheter” colonoscope replacement technique was tried.

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<td>Peritonenum</td>
<td>Splenic flexure</td>
<td>Extrinsic</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>Intrinsic</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>Extrinsic</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</td>
<td>Sigmoid colon</td>
<td>Extrinsic</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>Extrinsic</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>Extrinsic</td>
<td>PCF-PQ260L</td>
<td>Close</td>
<td>Success/Success</td>
<td>0 → 3</td>
</tr>
</tbody>
</table>

*CROSS, ColorCatheter 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-CR, 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.

References


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 program 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 50% 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 immunochemical 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 those 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 ≥20 mm). 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.

Introduction

Colorectal cancer (CRC) is the most common cause of cancer in the USA. The incidence of CRC has been increasing in the USA. The prevalence, gender distribution, and clinical presentation of CRC differ between Asian and Western countries. 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.

References


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

References


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

P1126 SUBJECT GLOBAL SATISFACTION SCORE TO ASSESS OVERALL EFFECT OF NALDEMENE COMPARED WITH PLACEBO ON CONSTIPATION AND ABDOMINAL SYMPTOMS IN SUBJECTS WITH CHRONIC NON-CANCER PAIN AND OPIOID-INDUCED CONSTITUTION

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Introduction: Opioid-induced constipation (OIC) is a common side effect of opioid therapy that significantly affects multiple aspects of a patient’s life. Naldemedine (NAL) is a peripherally-acting mu-opioid receptor antagonist that significantly affects multiple aspects of a patient’s life.

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; 4 = unchanged; 5 = slightly, 6 = moderately, or 7 = markedly improved) was used to assess overall satisfaction with constipation and abdominal symptoms in patients with OIC associated with non-cancer pain.

Aim: To evaluate the changes in large-intestine enteroendocrine cells in Asian and Western IBS 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

P1127 IBEROGAST PREVENTS CHANGES IN INTESTINAL PERMEABILITY INDUCED BY PSYCHOLOGICAL STRESS IN MICE

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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 evaluate

Abstract No: P1125

Table 1: Densities of enteroendocrine, Msi 1, and neurog 3 cells in the colon of Thai and Norwegian controls and IBS patients.

<table>
<thead>
<tr>
<th>Cell type</th>
<th>Controls</th>
<th>IBS-D</th>
<th>IBS-M</th>
<th>IBS-C</th>
<th>Controls</th>
<th>IBS-D</th>
<th>IBS-M</th>
<th>IBS-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serotonin</td>
<td>202±20</td>
<td>119±10**</td>
<td>104±9**</td>
<td>93±8**</td>
<td>144±21</td>
<td>333±25</td>
<td>176±12**</td>
<td>163±14**</td>
</tr>
<tr>
<td>PYY</td>
<td>79±8</td>
<td>95±10</td>
<td>143±20**</td>
<td>68±7</td>
<td>67±7</td>
<td>177±19</td>
<td>184±23</td>
<td>315±72**</td>
</tr>
<tr>
<td>Oxyntomodulin</td>
<td>70±7</td>
<td>40±4**</td>
<td>42±7*</td>
<td>39±7**</td>
<td>39±6**</td>
<td>224±30</td>
<td>93±10**</td>
<td>78±13**</td>
</tr>
<tr>
<td>PP</td>
<td>46±5</td>
<td>54±4</td>
<td>58±6</td>
<td>51±11</td>
<td>55±6</td>
<td>177±17</td>
<td>100±13*</td>
<td>117±21*</td>
</tr>
<tr>
<td>Somatostatin</td>
<td>91±12</td>
<td>77±6</td>
<td>86±13</td>
<td>60±9</td>
<td>78±9</td>
<td>106±12</td>
<td>102±8</td>
<td>118±15</td>
</tr>
<tr>
<td>Msi 1</td>
<td>5.0±0.4</td>
<td>5.0±0.3</td>
<td>5.0±0.6</td>
<td>5.0±0.8</td>
<td>5.0±0.5</td>
<td>7.0±0.5</td>
<td>8.0±0.6</td>
<td>8.0±1.0</td>
</tr>
<tr>
<td>Neurog 3</td>
<td>130±10</td>
<td>129±11</td>
<td>131±19</td>
<td>105±16</td>
<td>138±18</td>
<td>274±31</td>
<td>258±28</td>
<td>287±54</td>
</tr>
</tbody>
</table>

Data was expressed as mean ± SEM. * P < 0.05; ** P < 0.01; *** P < 0.0001

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 0.2mg 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 were 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.
P1129 ALTERING SPHINGOSINE-1-PHOSPHATE WITH AGING INDUCES MOTILITY DYSFUNCTION OF COLON SMOOTH MUSCLE BY BKCa UPRREGULATION IN RATS

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Introduction: Large conductance Ca\(^{2+}\)-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 Sphingolipids in the cell membranes, 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 tissue were measured 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 Ca\(^{2+}\) 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 Ca\(^{2+}\) mobilization were affected by BKCa expression in SMCs. The expression and phosphorylation of Akt, JNK, ERK, NF\(^{κ}\)B, and PKC were 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 higher in the CSM of aged rats, demonstrating that SIP 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, 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. Intracellular Ca\(^{2+}\) mobilization though inhibiting Ca\(^{2+}\) 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 showed that altered SIP due to aging upregulates BKCa via the Akt/ERK/JNK mediated pathway in CSM. BKCa upregulation inhibits Ca\(^{2+}\) influx and MLC phosphorylation and thereby reduces the contractile force characteristic of the contractile dysfunction of CSM observed in older individuals, which may be implicated in age-associated gastrointestinal motility disorders.

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 MYSTERIC GANGLIA AND ITS MICROENVIRONMENT OF DIFFERENT INTESTINAL SEGMENTS

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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 nitricergic myenteric neurons, which are key regulators of peristalsis, display different susceptibilities to diabetic damage and also to treatment in the different gut segments. Based on these results we suggested the importance of the molecular differences in the microenvironment in the pathogenesis of diabetic nitrergic 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 myenteric 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 (STZ)-induced diabetic, control and diabetic, and control rats were processed for post-embedding immunohistochemistry.

Results: The density of TNFa- and IL6-labelling 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 myenteric 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 TNFa and IL6 expression are correlated with the diabetes-related region-specific nitrergic myenteric neuropathy.

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

References

P1131 ROLE OF SEMAPHRIN 3A IN THE POSTNATAL DEVELOPMENT OF THE ENTERIC NERVOUS SYSTEM

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Introduction: Critical developmental stages of the enteric nervous system (ENS) occur during the postnatal period leading to the formation of a mature neural network 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. Semaphorin 3A (SEMA3A) is a secreted protein playing key roles in the neuronal circuitry formation of the central nervous system. Here, we studied the expres-
Aims & Methods: Gene and protein expression of SEMA3A and its receptor NRP1 was assessed in the distal colon of nontermally euthanized rats aged 1 day (PN1) to adulthood by qRT-PCR and Western blot respectively. The cellular distribution of SEMA3A and NRP1 was determined at PN7 and PN36 in whole mount distal colon tissue by double immunofluorescence for SEMA3A or NRP1 with specific mouse and rabbit primary antibodies, respectively (H. Mackie, T. Shi, 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 NRP1 was observed in distal colon at PN7, corresponding to a stage of intense neural circuit remodeling. At the protein level, NRP1 was also found to be predominantly expressed during the early postnatal period. Immunohistochemistry of colon tissue indicated that SEMA3A immunoactivity 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. NRP1 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 NRP1 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:

P1132 A POPULATION-BASED STUDY ON BOWEL HABITS IN A PORTUGUESE COMMUNITY: PREVALENCE OF CONSTIPATION

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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 done previously, 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 asked 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 fibre 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 2214 questionnaires were postulated to 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, complied the Roma III criteria.

Conclusion: This study represents the first assessment of bowel habits in the Portuguese population, depicting the high prevalence and related risk factors of a disorder that decreases the health-related quality of life and has major economic consequences. The prevalence of constipation (22%) was higher than that reported in other countries.

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

P1133 DIAGNOSTIC DISCORDANCE BETWEEN TESTS OF EVACUATION: A PROSPECTIVE STUDY

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Introduction: Objective means of evaluation of the defecatory process include evacuation histo-rectal manometry (HRM), balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic transpelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected evacuatory 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 and 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 51.62 years) 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 (0.14 ± 0.01). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectoceles >3.5cm). There was a moderate correlation between diagnosis of anisms 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 evacuatory 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 ENDOCOPIC FULL-THICKNESS WALL RESECTION (EFTR) IN PATIENTS WITH SYMPTOMS OF CHRONIC INTESTINAL PSEUDO-OBSTRUCTION (CIMO)

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Introduction: Complex gastrointestinal motility disorders such as chronic intestinal pseudo-obstruction (CIMO) 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, yet underlying pathology 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 and Methods: We performed endoscopic full-thickness resection (eFTR) using a full-thickness-resection device (FTDR) under moderate propofol sedation in four patients with suspected severe neuromuscular gut disorders including CIMO.

Results: Patient 3: A 19-year-old male patient with a history of cerebellar atrophy suffering from severe 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 diagnosis such as HD were ruled out. 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 established 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 leptomiosis and lymphocytic ganglionitis. Congenital CIMO was diagnosed due to degenerative leiomophathy. 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 nerve bundles. Technical as well as histological success providing large full-thickness gut resection device is a well feasible and effective technique to provide full-thickness gastrointestinal motility. The mean diameter of the resected specimen was 21 mm (range 20–22 mm). No adverse events reported. The most frequently reported AE in the YH12852 treatment groups were constipation and diarrhea. YH12852 appeared to increase bowel movement greater than prucalopride, particularly at 0.5 mg. YH12825 may have a significant potential for the treatment of GIMDs.

Disclosure of Interest: S. Lee: The affiliates of Yuhan Corporation are stockholders and/or employees. H. Na: The affiliates of Yuhan Corporation are stockholders and/or employees. All other authors have declared no conflicts of interest.

P1137 HEALTHCARE PROFESSIONALS FAIL TO PROVIDE ADEQUATE SUPPORT ABOUT OPIOID-INDUCED CONSTIPATION TO STRONG-OPIOID USERS

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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, opioid use, treatment-seeking behaviour, 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 did not have a bowel movement over the past week (36%). Appropriately one-fifth (22%) of the 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% reporting other treatment options. A significant number of respondents (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, responders regularly used a variety of approaches, including dietary measures (48%), exercise (23%) and single (32%) or multiple (15%) laxative treatments. Only 45% of respondents reported that their healthcare professionals (HCPs) had warned them about constipation as a potential side effect of opioid use. Almost two-thirds of respondents (63%) reported that their HCP was the main information source on opioid-induced constipation. Although 58% of respondents stated that they would have liked their HCP to provide more information about OIC, 48% preferred to deal with constipation on their own, rather than discuss it with their HCP. Other common sources of information were online search engines (44%) and online health forums (29%). Less than half of respondents (43%) strictly adhered to prescribed treatment regimens, with 32% reporting other treatments.

Conclusion: A proportion 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, perceiving HCPs as unsupportive and dissatisfied.

Disclosure of Interest: A. Lass: Contractor to Shinomi Ltd.
All other authors have declared no conflicts of interest.

Reference
P1138 THREE-DIMENSIONAL HIGH-RESOLUTION ANORECTORAL MANOMETRY IN CHILDREN AFTER SURGERY FOR ANORECTAL DISORDERS
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Introduction: Three-dimensional high-resolution anorectal manometry (3DHARM) 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 gastrointestinal tract. Our aim was to evaluate children after surgery for anorectal disorders using 3DHARM.

Aims & Methods: We performed a prospective study of 43 children (30 male, mean age 7 years) after surgery for anorectal disorders at the Departments of Pediatric Gastroenterology, 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 proctocolectomy for other reasons (PC). In all children conventional manometry and media of the anorectum of children after surgery.

Results: The lowest values of resting, squeeze and the pressure of PRM were observed in NRFI [69.6 mmHg and 61.3 mmHg, respectively; p = 0.03]. ROC cut-off value for mean resting pressure between asymptomatic children and those with fecal incontinence was 68.5 mmHg. Significantly lower PRM resting pressure were observed in NRFI group and lower PRM squeeze pressure in NRFI (45.6 mmHg and 63.6 mmHg, respectively). Threshold of urge were significantly higher in group C as compared to A group (87.5 cm3 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. 3DHARM may be useful tool for assessing the function of the anorectum of children after surgery.

Disclosure of Interest: M. Banaszuk: Equipment support from manufacturer of the equipment (Covidien AG)

All other authors have declared no conflicts of interest.

P1139 UK CLINICAL EXPERIENCE AT 52 WEEKS WITH LINACLOTIDE FOR IRRITABLE BOWEL SYNDROME WITH CONSTIPATION
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Introduction: Linaclootide, 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.

Aims & Methods: A multicentre, 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 linaclootide initiation. Consenting patients aged ≥ 18 years with IBS-C and treated with linaclootide (290 mcg) for IBS-C were recruited. Data were collected on patient demographic and clinical characteristics, concomitant medications, patient-reported outcomes, including IBS-SSS score, and adverse events were collected. Results at 12 weeks (primary endpoint) have been presented previously; here we report analysis of real-world clinical experience 52 weeks post-linaclootide initiation.

Results: 202 patients were recruited; 185 (92%) were female. At baseline, median age was 44.9 (range 18–77 years; 84 (42%) reported concomitant laxative use. Mean baseline IBS-SSS score was 339 (standard deviation [SD] ± 100; n = 193); 129 (67%) patients had IBS-C classified as severe (score ≥ 300), 54 (28%) moderate (175–300), nine (5%) mild (75–175) and one (0.5%) normal (<75). At 52 weeks, mean IBS-SSS score was 256 (SD ± 116; n = 78); 31 (40%) patients had severe (score ≥ 300), 27 (35%) moderate, 14 (18%) mild and six (8%) normal. IBS-SSS scores improved significantly between baseline and 52 weeks, with a mean decrease of 71 (SD ± 106) points overall (t-test p < 0.001; n = 76 with paired data) and 94 (SD ± 102) points on the patients remaining on linaclootide (p < 0.001; n = 34). Of the 76 patients with paired data, 41 (54%) reported no change in IBS-SSS score of ≥ 50 points or score fell below 150 [if baseline score ≥ 150] [Table]. At 52 weeks, 41 (20%; n = 202) patients remained on linaclootide, 87 (43%) had stopped (< 4 doses in past week)

Conclusion: Linaclootide 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 linaclootide 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. Yiannakou: 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 FECAL MICROBIOTA TRANSPLANTATION ON GUT BACTERIAL FERMENTATION PRODUCTS IN PATIENTS WITH IRREVERSIBLE BOWEL SYNDROME
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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 fecal 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. Fecal 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, 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, Figure 1). Symptom scores as assessed by IBS-SQ improved from before FMT until week 20/28 after FMT as follows: nausea (P = 0.0013), bloating (P < 0.0001), abdominal pain (P = 0.0005), diarrhea (P < 0.0001), constipation (P = 0.03), and anorexia (P = 0.09). Correlations were found between abdominal pain and both acetic acid (r = 0.69, P = 0.04) and total SCFAs (r = 0.69, P = 0.044) in IBS patients before FMT. Inverse correlations were found 3 weeks after FMT between nausea and isovaleric acid (r = −0.65, P = 0.014), and between constipation and propionic (r = −0.74, P < 0.0001), iso-butyric (r = −0.79, P < 0.0001) and n-valeric acids (r = −0.79, P < 0.0001) and isovaleric (r = −0.72, P < 0.0001).

Table: Change in IBS-SSQ score at 52 weeks from start of linaclootide

<table>
<thead>
<tr>
<th>Change in IBS-SSQ</th>
<th>Patients, n</th>
<th>Patients, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>-350 &lt; -300</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>-300 &lt; -250</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>-250 &lt; -200</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>-200 &lt; -150</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>-150 &lt; -100</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>-100 &lt; -50</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>-50 &lt; 0</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>No change</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10 &gt; -50</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>50 &lt; 100</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>100 &gt; 150</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>150 &gt; 200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>200 &gt; 250</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>250 &gt; 300</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>300 &gt; 350</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>100</td>
</tr>
</tbody>
</table>

Most commonly due to side effects (n = 51) or lack of efficacy (n = 18), and 74 (37%) were lost to follow-up/not known. Overall, 174 adverse events possibly related to linaclootide were reported in 77 (38%) patients, most commonly diarrhea (25%; n = 51), abdominal pain (9%; n = 18) and abdominal distension (6%; n = 13).

Conclusion: Linaclootide 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 linaclootide treatment in 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>
<th>p</th>
<th>***p</th>
<th>****p</th>
<th>*****p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>/33.9±2.8</td>
<td>23.6±6</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>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td></td>
</tr>
<tr>
<td>Propionic acid</td>
<td>9.5±1</td>
<td>6.2±1</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>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.2</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>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.095</td>
<td>0.25</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>
<td>0.089</td>
<td>&gt;0.9</td>
<td>0.025</td>
<td>0.96</td>
</tr>
<tr>
<td>n-valeric acid</td>
<td>1.4±0.18</td>
<td>0.68±0.005</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>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.042</td>
<td>0.47</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>
<td>0.046</td>
<td>&gt;0.9</td>
<td>0.011</td>
<td>&gt;0.9</td>
</tr>
<tr>
<td>n-caproic</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>0.2</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.059</td>
<td>0.17</td>
</tr>
<tr>
<td>Iso-caproic</td>
<td>0.01±0.005</td>
<td>0.02±0.02</td>
<td>0.08±0.006</td>
<td>0.013±0.01</td>
<td>0.01±0.005</td>
<td>0±0</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Total SCFAs</td>
<td>58.8±5.4</td>
<td>37.6±8</td>
<td>49.9±8</td>
<td>55.7±6.2</td>
<td>41.4±7.1</td>
<td>46±4.7</td>
<td>0.17</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>0.15</td>
<td>0.6</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.
PI142  RANDOMISED PLACEO CONTROLLED ESCITALOPRAM INTERVENTION IN PATIENTS WITH PANIC DISORDER: EVALUATION BY GSRS AND BY EXPERIENCE SAMPLING METHOD

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Introduction: Selective Serotonin Reuptake Inhibitors (SSRI’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 SSRI’s 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 digital assessments are completed randomly and repeatedly during daily life, therewith capturing fluctuating symptom patterns more accurately than retrospective questionnaire 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 palmtop computer at 10 random moments each day during 7 consecutive days. ESM periods were analysed when at least 1/3 (i.e. 23) of the assessments were completed. Mixed linear modelling was used with the GSRS symptom domain and related anxiety scores as the dependent variable and symptom change score as the independent variable. A sensitivity analysis including the GSRS symptom domain and related anxiety scores as the dependent variable and symptom change score as the independent variable. A sensitivity analysis including the GSRS symptom domain and related anxiety scores as the dependent variable.

Results: In total 57 patients (15 escitalopram and 14 placebo; 21 female; 37 ± 14.8 years; equal abdominal pain and anxiety scores at baseline) were included. Average GSRS-AP scores were not significantly different between escitalopram and placebo at t = 3 (B: 0.265, SE: 0.451, p = 0.557) or t = 6 (B: 0.229, SE: 0.539, 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 escitalopram 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. A sensitivity analysis on subjects that completed all 3 valid ESM periods (i.e. at least 1/3 of total number of assessments at t = 0, t = 3 and t = 6) showed similar results.

Conclusion: Using GSRS as primary outcome, no significant effect of escitalopram on either gastrointestinal (GI) or GI related anxiety scores was found. 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.

PI143  LINACLODITE ACCELERATES COLONIC TRANSIT AND IMPROVES COLONIC CONTRACTILITY IN IBS WITH CONSTIPATION

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Introduction: Linaclootide, a guanylate cyclase-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. Linaclotide reduced somatic symptoms (8.3 ± 2.12 vs. 68.17 ± 17.6, p = 0.02). Linaclootide reduced somatic symptoms (8.3 ± 2.12 vs. 68.17 ± 17.6, p = 0.02). Linaclootide reduced somatic symptoms (8.3 ± 2.12 vs. 68.17 ± 17.6, p = 0.02).

Aims & Methods: To determine if a SeHCAT test may be used to predict response to rifaximin in patients with IBS-D or FD. b) To assess if rifaximin modifies SeHCAT result.

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 = 2.1; P < 0.01), daily watery stools (Δ = 2.1; P < 0.01), and quality of life (58.4 ± 21.2 vs. 68.17 ± 17.6, p = 0.02). 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. 10.7% after treatment; P = 0.4).
P1145 Fecal Microbiota Transplantation for Patients with Post-Infectious or Antibiotic-Induced Irritable Bowel Syndrome: Results from a Prospective Pilot Study


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2Medical Microbiology And Infection Control, VU University Medical Center, Amsterdam/Netherlands
3Medical Microbiology, Leiden University Medical Center, Leiden/Netherlands
4Gastroenterology And Hepatology, Haaglanden Medical Center, The Hague/Netherlands
5Afd. Medische Microbiologie, Leids Univers. Medisch Centrum, Leiden/Netherlands

Conclusion: Treatment with FMT appears promising for antibiotic-induced and post-infectious IBS. Based on these results, a randomized placebo controlled trial is warranted.

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.

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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] vs 49.0% [p = 0.004] 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>
</tr>
</thead>
<tbody>
<tr>
<td>ELX 75 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
<tr>
<td>ELX 100 mg BID</td>
<td>PBO</td>
</tr>
<tr>
<td>ELX 100 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
</tbody>
</table>

References:

P1146 Consecutive weeks of inadequate relief: A post hoc analysis of the pooled eluxadoline phase 3 studies in patients with irritable bowel syndrome

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Introduction: Adequate relief (AR) of irritable bowel syndrome (IBS) symptoms is a commonly used global outcome measure to assess treatment benefit in both clinical trials and real-life clinical practice. Conversely, inadequate relief (IR) is considered an important driver for patients to use healthcare resources such as general practitioner or gastroenterologist consultations. Eluxadoline (ELX) is a mixed μ-opioid receptor (OR) and δ-OR agonist and δ-OR antagonist approved for the treatment of IBS with diarrhoea (IBS-D) in the US and Europe.

Aims & Methods: To evaluate IR in patients treated with ELX in a post hoc analysis of data from two randomised, double-blind, placebo (PBO)-controlled Phase 3 trials (IBS-3001, IBS-3002). Patients meeting Rome III criteria for IBS-D were randomised 1:1:1 to twice-daily (BD) ELX (75 or 100 mg) or PBO. Efficacy was evaluated through Week 26. For evaluation of AR, patients were asked “In the last 7 days, have you had adequate (or satisfactory) relief of your 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. Patients answering “No” were considered to have AR. This analysis evaluated the number of consecutive weeks that patients reported IR over Weeks 1–12 and 13–24 of treatment. Patients without AR 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] vs 49.0% [p = 0.004] 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>
</tr>
</thead>
<tbody>
<tr>
<td>ELX 75 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
<tr>
<td>ELX 100 mg BID</td>
<td>PBO</td>
</tr>
<tr>
<td>ELX 100 mg BID</td>
<td>ELX 100 mg BID</td>
</tr>
</tbody>
</table>

References:

Disclosure of Interest: 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.

P1147 Clinical response and discontinuation over time in phase 3 trials of eluxadoline for irritable bowel syndrome with diarrhoea

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Introduction: Irritable bowel syndrome with diarrhoea (IBS-D) is a chronic gastrointestinal disorder characterised by recurrent abdominal pain associated with diarrhoea. Eluxadoline, a mixed μ- and κ-opioid receptor agonist and δ-opioid

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 Optum, Plymouth/United States of America/MA.

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.

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Introduction: Diets reducing the content of fermentable short chain carbohydrates (fermentable oligo-, di-, monosaccharides, 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 ileocecal 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 around known anatomical landmarks as identified by compartmental pH changes. Ileal and colonic motility measures were presented as area under the curve (AUC) derived from contraction amplitude and frequency. Validated questionnaires evaluating GI (verbal descriptor scale, Bristol Stool Form Scale [BSFS], and Global Symptom Score [GSS; 0–4 scale, where 0 = no symptoms and 4 = very severe symptoms]) and self-reported inadequate symptom control with loperamide were classified as having severe IBS-D.

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 with severe IBS-D 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 interval, 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% and 26.8% of patients were responders with eluxadoline 75 and 100 mg, respectively, vs 12.5% of patients on placebo. Over Weeks 21–24, 28.1% and 30.2% of patients with response rates observed at Weeks 1–4 consistently maintained across all 4-week intervals in the treatment group. For these analyses, patients with baseline GSS demonstrating a response and a minimum of 20 days of diary data. The intention-to-treat analysis set included patients randomized to a treatment group. For these analyses, patients with baseline GSS ≥3 (severe or very severe symptoms) and self-reported inadequate symptom control with loperamide 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.


References:

PI114 ORAL A-GALACTOSIDASE IMPROVES GASTROINTESTINAL TOLERANCE TO A DIET HIGH IN GALACTO-OLIGOSACCHARIDES: ADJUNCT THERAPY TO A LOW FODMAP DIET IN IRRITABLE BOWEL SYNDROME

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Introduction: Galacto-oligosaccharides (GOS) are indigestible short-chain carbohydrates (FODMAPs, fermentable, oligo-, di-, mono-saccharides and polyols) that might reduce small intestinal fermentation and thus be beneficial in the treatment of IBS. In this study, we used oral galacto-oligosaccharides (GOS) and compared it to a low FODMAP diet and the NICE diet in IBS patients (Rome III criteria).

Methods: A randomized controlled trial of patients with Rome III defined IBS-M was conducted. Patients were randomly assigned to one of the three groups: (1) low-FODMAP diet, (2) NICE diet, or (3) low-FODMAP diet supplemented with oral GOS. The study was a 4-week randomized placebo-controlled, double-blinded, parallel-arm trial. The primary endpoints were changes in quality of life (QoL) and changes in symptoms (GI and extra-GI) as measured by validated questionnaires. Baseline was the period before randomization. All patients received a wireless motility capsule (WMC) with a standardized protocol. Segmental transit times were derived from the motility capsule. In addition, validated questionnaires evaluating GI and extra-GI symptoms were used.

Results: Of the 186 patients, 151 completed the study (67% of patients). The low-FODMAP diet and GOS significantly improved quality of life (p < 0.05) compared to the NICE diet. Both the low-FODMAP diet and oral GOS reduced symptoms such as GI symptoms (p < 0.05) compared to the NICE diet. The low-FODMAP diet and oral GOS were well tolerated and improved quality of life (p < 0.05).
associated with triggering gastrointestinal symptoms in irritable bowel syndrome (IBS).

### Aims & Methods:
This study aimed to assess whether oral α-galactosidase co-
gestion with foods high in GOS and low in other FODMAPs would reduce symptoms and breath hydrogen production in a double-blind, placebo-controlled crossover trial approved by Monash University Ethics Committee. Patients meeting the Rome III criteria for IBS who produced >10 ppm hydrogen on two consecutive breath samples following 10 g fructose were recruited. Participants were randomly assigned to full-dose enzyme (300 GALU α-galacto-
sidase), half-dose (150 GALU) and placebo (glucose) capsules. Following a 3-day low-GOFMAP 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]) compared to placebo (mean 5248 [9.5–42.0] vs 6.5 [2.0–15.8]; p = 0.022). Twenty-one participants exhibited GOS-sensitivity (>10 mm increase for overall symptoms). Of those, full-dose enzyme reduced overall symp-
toms (24.5 [17.5–35.8] mm vs 5.5 [1.5–15.0] mm; p = 0.006) and bloating (20.5 [9.5–42.0] vs 6.5 [2.0–15.8]; p = 0.017). Breath hydrogen production was minimal with no differences seen between placebo (528±SD 3339 ppm.12h) and full-dose (5585±3205; p = 0.597, paired samples t-test).

### Conclusion:
An oral α-galactosidase supplement taken with high GOS foods provides a clinically significant reduction in symptoms in GOS-sensitive indivi-
duals with IBS. The lack of change in breath hydrogen production points to a mechanism that may not be related to reduced gas and distension, rather suggesting a role of alterations to the microbiota. Future analysis of the faecal microbiota may pro-
vide insight for the mechanism of action. This strategy can be easily translated into a practical, cost-effective and acceptable intervention specific to high GOS foods for patients with IBS as an adjunct therapy to the low FODMAP diet.

### Disclosure of Interest:
J.S. Barrett: The Department of Gastroenterology finan-
cially benefits from the sales of a digital application and booklets on the low FODMAP diet. P.R. Gibson: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low FODMAP diet. P Gibson has published an educational/recipe book on the low FODMAP diet. J.G. Muir: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low FODMAP diet. All other authors have declared no conflicts of interest.

### P115 PREVALENCE OF ANAL SQUAMOUS INTRAEPITHELIAL LESIONS IN LIVER TRANSPLANT PATIENTS

#### Introduction:
Anal squamous intraepithelial lesions (SILs) are precancerous lesions of anal squamous cell carcinoma and are largely related to human papillomavirus (HPV) infection. Immunosuppressed patients have a higher prevalence of these lesions. There are some studies in renal transplant recipients, but no information exists regarding prevalence in liver transplantation.

#### Aims & Methods:
Our aim was to evaluate the prevalence of anal squamous intraepithelial lesions in liver transplant recipients compared with healthy subjects. We performed a retrospective case-control study involving liver transplant recipi-
ents that were compared with a healthy control group. All patients were sub-
mitted to anal cytology. Those with abnormal cytological results, namely high-grade squamous intraepithelial lesions (HSIL), atypical squamous cells which cannot exclude high-grade squamous intraepithelial lesions (ASC-H), low-grade squamous intraepithelial lesions (LSIL) and atypical squamous cells of undetermined significance (ASC-US), were submitted to high-resolution anoscopy with biopsies of any suspicious lesion.

#### Results:
A total of 59 liver transplant recipients and 57 controls underwent anal cytology. In the liver transplant group, 37 (63%) were men, with a mean age of 54±10 years. The most common indication for transplantation was alcoholic cirrhosis in 26 patients (44%), the majority of the patients were only on tacro-
loimus (66%, 95% CI 1.22-28.121, p = 0.027).

#### Conclusion:
Liver transplant patients have a higher risk of anal squamous intraepithelial lesions and screening should be considered especially in smokers.

### Disclosure of Interest:
All authors have declared no conflicts of interest.
DAO was also examined vertically from the epithelium to the submucosa in all the examined tissues. The enzymatic activity of DAO is diminished in the colonic mucosa of patients with GMA. Up to now no studies concerning the expression of DAO in the upper gastrointestinal tract (GIT) of patients with or without GMA have been published. Therefore, the objective of this study was to analyse the immunohistochemical staining of DAO and its localisation in the upper GIT of patients with or without GMA.

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). The localisation of DAO was also examined vertically from the epithelium to the submucosa in all tissues.

Introduction: Immunohistochemical analysis found DAO in all segments of the upper GIT, but the SI-DAO was overall low. Across the upper GIT the median SI-DAO in the CG was 1.1 (range 0.9–1.3). The SI-DAO did not differ between the examined tissues. The SI-DAO was also low in the GMA group (median 1.0; range 0.8–1.3) and it was statistically significantly lower compared to the controls (median 1.1; p = 0.04) only in duodenum in the GMA group the SI-DAO in the esophageal region of the cardia and in corpus was significantly higher than in duodenum (see Table 1). The strongest DAO-staining was detected in 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.

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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 (epithelial region)</th>
<th>Cardia (subepithelial lamina propria)</th>
<th>Corpus</th>
<th>Antrum</th>
<th>Duodenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMA Group</td>
<td>N = 10</td>
<td>8</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>Median = 1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>25th Percentile = 0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.7</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75th Percentile = 1.3</td>
<td>1.3</td>
<td>1.1</td>
<td>1.5</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>Median = 1.3</td>
<td>1.2</td>
<td>1.3</td>
<td>0.9</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>25th Percentile = 1.0</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75th Percentile = 1.4</td>
<td>1.6</td>
<td>1.2</td>
<td>1.1</td>
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</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.

Reference

DAO: None, 1 Low, 2 Medium, 3 High

P1154 IMPROVEMENT OF SYMPTOMS IN PATIENTS AFFECTED BY CHRONIC ATROPHIC GASTRITIS: A TWO-YEAR PROSPECTIVE STUDY BY USING L-CYSTEINE

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Introduction: Chronic atrophic gastritis (CAG) is considered to be a precancerous condition for gastric cancer; it is either autoimmune in origin or caused by infection with Helicobacter pylori. The majority of CAG patients are asymptomatic or experience aspecific manifestations like epigastric fullness, early satiation, nausea, bloating. The drugs currently used for upper gastrointestinal (GI) diseases, mainly proton pump inhibitors (PPIs), appear inappropriate in such patients, mainly because acid production is virtually lacking. The use of

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

Reference
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 59.9 years) (with 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) (GastroPanel®, Boehr, Oyt, Finland) entered the study. Forty-one patients (11 M, mean age 49.4 yr, range 27–71 years) were treated with L-cysteine (100 mg 3 times daily, with meals) for 24 months (Group 1). As a control group we enrolled 73 CAG patients (M = 32, mean age = 55.3 yr, range = 32–77 years) followed up for 24 months without any related therapy (Group 2). Early satiation, nausea, bloating) were recorded at baseline and after 3, 6, 12, 24 months, according to severity score (0–3 for each symptom, min. 0 = no symptoms; max. 12 = full symptom).

Results: The herbal 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) two different groups were identified 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.

P1155 PROGNOSTIC SIGNIFICANCE OF SERUM INFLAMMATORY MARKERS IN GASTRIC CANCER

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Introduction: Despite undergoing potentially curative resection a significant proportion of patients develop cancer recurrence. Several cellular and humoral components of systemic inflammatory response have been reported and associated with poor outcome. To date, no study has comprehensively examined the relationship between readily available markers of inflammation and survival in gastric cancer.

Aims & Methods: Patients undergoing surgery for stage I-III gastric cancer between 2004–2016 at a regional unit were identified. Measurements of various systemic inflammation markers were recorded pre-operatively. Pathological factors were recorded from reports issued at the time of resection. The modified Glasgow Prognostic Score (based on CRP and Albumin), Neutrophil-Lymphocyte Ratio, Platelet-Lymphocyte Ratio and Neutrophil-Platelet score were recorded at baseline and after 3, 6, 12, 24 months, according to severity score.

Results: 331 patients were identified and 291 patients underwent potentially curative resection for gastric cancer. On univariable DFS analysis, female gender, differentiation, lymph node ratio, R1 status, platelet count and mGPS were significant in predicting importance.

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.

P1156 ANALYSIS OF REBLEEDING PATIENTS IN UPPER GASTROINTESINAL BLEEDING IN A SINGLE CENTER SERIES


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Introduction: Upper gastrointestinal bleeding (UBG) is one of the main causes of hospital admission and urgent endoscopy in Gastroenterology departments. In-hospital mortality from UGB has decreased during the last 2 decades with a corresponding increase in the performance of endoscopy and endoscopic therapies. Several studies suggest that improvements in the therapeutic procedures for patients with UGB could be responsible of the mortality decline. Despite this, UGB represents a true emergency, associated with significant morbidity, mortality and healthcare costs. Furthermore, rebleeding after initial endoscopic therapy is observed in 10–20%, 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 rebleeding. 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 risk factors including gender, age, 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, interventional radiology procedures, and surgery. Clinical outcomes documented were 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. 3.28; p < 0.001) and low CRP (p < 0.001). In a multiple regression model 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 neither with GI mucosal and hemorrhagic events. The UGB risk scores AIMS 65 and Rockall showed poor predictive ability for acute rebleeding in the rebleeding patients’ group and was similar for Blatchford score (based on AURG).

Conclusion: Rebleeding in UGB 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 risk scores were then used to perform a survival analysis in the rebleeding patients. No differences were found in improving symptoms. No relevant side effects were observed during the study.

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

P1157 A CASE-CONTROL STUDY ON THE RISK OF UPPER GASTROINTESINAL MUCOSAL INJURIES IN SUBJECTS PRESCRIBED NSAIDS AND ANTI-THROMBOTIC DRUGS USING THE LARGE ORGANIZED DATABASE OF CLAIMS IN JAPAN (APPROXIMATELY 3.7 MILLION OF POPULATION ON AN ACCUMULATED BASIS)

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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 analyze the risk of upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

Conclusion: Rebleeding in UGB 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 risk scores were then used to perform a survival analysis in the rebleeding patients. No differences were found in improving symptoms.

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

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. 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 and oral anticoagulants in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

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Introduction: Upper gastrointestinal bleeding (UGB) 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 analyze the risk of upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.
medicines (1 agent <2 agents <3 agents, peptic ulcers: 1.38 < 2.49 < 4.52, upper GI bleed: 5.74 < 7.55 < 7.77, GERD: 1.61 < 2.96 < 5.55, respectively). The upper GI mucosal injuries were exacerbated in complication of lifestyle-related diseases, including hyperlipidaemia and diabetes mellitus.

Conclusion: Prescribing NSAIDs and anti-thrombotic medicines was associated with increased risks of developing upper GI injury. The present large-scale, national 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 ANTICOAGULATION THERAPY: SYSTEMATIC REVIEW OF THE REBLEEDING RISK, ITS REVERSIBILITY PROFILE AND RISK STRATIFICATION TO SELECT PATIENTS FOR LEFT ATRIAL APPENDAGE OCCLUSION

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Introduction: Percutaneous left atrial appendage occlusion (LAAO) is increasingly recognized as valid alternative therapy to reduce thromboembolic risk in patients with non valvular atrial fibrillation (AF) and contraindications for long term oral anticoagulation (OAC) therapy1,2. Patients at high thromboembolic risk with previous gastrointestinal bleeding (GIB) might be at risk of bleeding recurrences 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 patients who were proposed to discontinue or delay 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 rebleeding 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 treatment (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 cases under anticoagulation under OAC therapy is 5-7%. The reversibility profile to compare the risk stratification of each predictor by comparing AIMS65 score with Glasgow-Blatchford score (GBS), full Rockall score and pre-endoscopic Rockall score. We retrospectively study 17 patients who visited the intergeneric Paik Hospital with NVUGIB between 2013 and 2016. Among these, AIMS65, GBS, and Rockall scores were measured. The primary outcome was inpatient mortality, and secondary outcomes were rebleeding, needs of endoscopic intervention, requirement of transfusion, intensity of ICU admission (ICU) admission. Each scoring system and prognostic factors were compared using the ROC curve.

Results: In this study, 17 of the 512 selected patients died, and re-bleeding was confirmed in 30 patients. AUROC between AIMS 65 and mortality was measured at 0.844 higher than 0.720 and 0.743 for GBS and pre-endoscopic/ full Rockall score. (p < 0.001) For AUROC for secondary outcomes, AIMS 65 was superior to other scores in predicting the ICU admission (0.728, p < 0.001).

Conclusion: In this single-centre study, the management of GIB could be improved in multiple areas in line with international guidelines. Audits in other centres are required to quality assure the management of GIB. Interestingly, rates of anaemia 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 PEPTIC ULCER DISEASE

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Introduction: Peptic ulcer disease (PUD) accounts for 25–56% of acute upper 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 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 majority were duodenal (74.7%) vs. gastric (25.3%). 31.8% were related to aspirin/non-steroidal anti-inflammatory drug use. 45 (52.7%) had high risk (Forester 1a-2b) lesions, of whom 38/48 (79.2%) received dual endoscopic therapy and 6/48 (12.5%) received adrenaline monotherapy. 30/48 (62.5%) were recommended adrenaline volumes of 13ml. 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%) underwent CT embolisation, whilst 3 (25.0%) underwent surgery. Aspirin resumption was observed in 4/20 (20.0%) after haemostasis for PUD, whilst rebleed planning was documented on the endoscopy report in 33.0%. Regarding H. pylori, 51% underwent assessment with biopsies. 10 (36%) had positive result of whom 7 (70%) received eradication. 12/23 (52%) patients underwent follow-up endoscopy following gastric ulcer. The median transfusion requirement per patient was 2 units. Despite this, rates of anaemia 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 anaemia 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.

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References
P1161 COMPARISON OF RISK-SCORING SYSTEMS IN PREDICTING NEEDS OF INTERVENTION AND CLINICAL OUTCOMES OF UPPER GASTROINTESTINAL BLEEDING

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Introduction: 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 intervention in patients admitted to hospital for UGIB.

Aims & Methods: Data related to the three scoring systems were collected prospectively and scores calculated in consecutive patients who were admitted with acute UGIH to the Royal Adelaide Hospital over 24 months. The performance of the three scoring systems was evaluated using the receiver operating characteristic (ROC) curves, in predicting the following outcomes: the need for endotherapy, rebleeding risk, transfusion requirement, surgical intervention and death. All patients received high dose acid suppression therapy.

Results: Of the 155 (89M; 68.8 ± 0.6yrs) patients who presented with UGIB, 622 (402M; 65.7 ± 0.6yrs) underwent endoscopy with 123 (38%) required endoscopic intervention. The model, a horizontal 10-mm incision was made on the lower part of the left hepatic lobe. Commercial hemostatic powder, smectite, 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.

Conclusion: Smeetsite demonstrated the best hemostasis effect, and its mean coagulation time was 1.45 ± 0.026 min. Commercial hemostatic chitosan stypic powder need 2.5 ± 0.04 min for complete clotting, while Starch group was 4.275 ± 0.056 min and 4nal saline group was 4.025 ± 0.018 min (p < 0.05). Similarly, smeetsite led to less blood loss (0.6188 ± 0.034 g), while rats lost 2.3288 ± 0.123g blood (p < 0.05) under normal saline treatment. For starch and commercial chitosan, the blood loss was respectively 2.086 ± 0.061 g and 1.252 ± 0.028 g. Histopathologic results confirmed that smeetsite was biocompatible to tissue.

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

P1162 STEROID ADMINISTRATION IS AN INDEPENDENT RISK FACTOR FOR REBLEEDING IN HEMORRHAGIC DUODENAL ULCER WITH A DOSE-RESPONSE RELATION

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Introduction: Hemorrhagic gastroduodenal ulcer is commonly seen in routine clinical practice, and there have been many studies investigating risk factors for rebleeding. However, few studies have evaluated hemorrhagic gastric ulcers (HGU) and hemorrhagic duodenal ulcer (HDU) separately. Furthermore, the relation between steroid administration and rebleeding in hemorrhagic gastro-duodenal ulcer remains unclear.

Aims & Methods: The aim of this study was to clarify the difference of rebleeding between HGU and HDU, and associated factors for rebleeding of HGU and HDU. Between March 2005 and September 2016, 176 consecutive patients with hemorrhagic gastroduodenal ulcer (106 with HGU and 70 with HDU) who underwent endoscopic hemostasis, were enrolled in this study. Regular dose proton pump inhibitor was administered to all patients after the diagnosis of hemorrhagic gastroduodenal ulcers. Rebleeding was defined as hematemesis or melena with ulcers confirmed by endoscopy or a decrease in the hemoglobin level > 2 g/dl in the presence of endoscopically proven ulcers. First, we compared the rebleeding rate between HGU and HDU. Subsequently, associated factors for rebleeding of HGU and HDU were calculated by logistic regression analysis individually. The estimated factors were age (< 65/≥65 years), gender, location of ulcer (upper third/middle or lower third in HGU and 2nd portion/bulbs in HDU), undertaking comorbidities (ischemic heart disease, liver cirrhosis, hyper-tension, diabetes mellitus, and hyperlipidemia), number of ulcers (multiple/single), hemostasis method (pure ethanol injection therapy/other therapies), anti-thrombotic therapy, anticoagulation therapy, NSAID administration, steroid administration, antacid administration in the initial ulcer bleeding, hypoalbuminemia (serum albumin level ≤ 2.5 g/dl), and hemodialysis. We further investigated the detailed association between steroid administration and rebleeding in HDU, including dose-response relation.

Results: The rebleeding rate of HGU and HDU were 5.7% and 22.9%, respectively, which was statistically significant (P = 0.001). There was no missing data in the estimated factors. Although no factor was associated with rebleeding in HDU, multivariate logistic regression analysis revealed that steroid administration and rebleeding for hemostasis in multiple ulcers [odds ratio (95% confidence interval) = 2.42 (2.76–213), P = 0.004], steroid administration [14.0 (1.73–113), P = 0.013], and hemodialysis [9.53 (1.00–90.7), P = 0.049]. Regarding the details of steroid administration, multivariate analysis showed that middle or high steroid administration (≥ 20 mg in prednisolone) (52.7 [3.19–871], P = 0.006) was a significant risk factor for rebleeding of HDU, with a dose-response relation (P = 0.015).

Conclusion: HDU developed significantly higher rebleeding after endoscopic hemostasis, compared with HGU. In addition to multiple ulcers and hemodialysis, we firstly demonstrated by multivariate analysis that steroid administration is an independent risk factor for rebleeding of HDU after endoscopic hemostasis, with a dose-response relation.

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

P1164 PREDICTORS OF LIFE THREATENING MUCOSAL ULCERATION AFTER VARICEAL SCLEROTHERAPY

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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 sclerotheraphy (esophageal varices: EV = 655, 87.3%) and (gastroic varices: GV = 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 46.2 ± 9.4 years) (EV = 129, GV = 21) developed bleeding due to sclerotheraphy induced ulcers confirmed by endoscopy 6.4 ± 2.1 days after the procedure. Cirrhosis was post viral hepatitis C (89%), hepatitis B (10%) and cryoproteinogenic 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 sclerostatic 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 >16 mg/dl, platelet ratio index (APRI) > 1 [OR 1.2], low prothrombin concentration <50% [OR 1.5]. Intraprocedural factors as amount of ethanolamine >15.5 ml [OR 2.6], amacarey >3.5 ml [OR 2.9]. Post-procedural factors within 24 hours after endoscopy: leukocytosis >12,000 cell/ml [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 sclerostatic 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

PI1165 IMPACT OF SLEEP DISORDER IN PATIENTS WITH FUNCTIONAL DYSPEPSIA
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Introduction: Few studies were reported on the association between sleep disorders and Rome III-based functional dyspepsia (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 dyspepsia. 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 gastroduodenal 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 169 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 18.4%, 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 = 0.026), female (OR 1.78, p = 0.028) and depression (2.91, p = 0.015).

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

PI1166 PREVALENCE OF DYSPEPSIA IN INDIVIDUALS WITH GASTRO-OESOPHAGEAL REFUX-TYPE SYMPTOMS IN THE COMMUNITY: A META-ANALYSIS
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Introduction: Dyspepsia and gastro-oesophageal reflux are highly prevalent in the general population, but the two conditions are felt to be separate entities. However, there are numerous mechanisms implicated in the pathogenesis of functional dyspepsia, some of which are common to gastro-oesophageal reflux symptoms (GORD), including visceral hypersensitivity and delayed gastric emptying. To inform future research on potential shared pathophysiological mechanisms, it is important to estimate the strength of association between the two conditions, and whether this association remains stable depending on the criteria used to define these conditions, as well as geographic location.

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 GORD were extracted for all studies. Pooled prevalence, according to study location and criteria used to define weekly GORD 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 GORD. 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 GORD was 43.9% (95% CI, 35.1–52.9%). The pooled OR for dyspepsia in individuals with weekly GORD, compared with those without, was 6.94 (95% CI 4.33 to 11.12). The OR for dyspepsia in weekly GORD was significantly higher than the geographical region of 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 GORD, to 42.6% with the Mayo Reflux Questionnaire.

Conclusion: The OR of dyspepsia in individuals with weekly GORD was seven-fold that of individuals without GORD, 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
as a predictor among individuals with FGIDs (Table 1). Episodic 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 episodic 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 commonality reported 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/DENYELINATING PROCESS IN PATIENTS WITH ESOPHAGEAL ACHALASIA–A PROSPECTIVE STUDY**

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**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 neurological and neurodegenerative/demyelinating diseases of central nervous system, although these diseases might have common features. For example, a number of genetic variations have been shown to increase the risk of both conditions (e.g. HLA-DQB1-insertion on chromosome 6 may be strongly associated with both achalasia and with neurodegenerative/demyelinating diseases). Several other findings (e.g. inflammatory infiltrates, hypothalamus (nucleus accumbens (NAc), amygdala, insula, pallidum, thalamus and single oesophageal balloon distention, as described elsewhere).) The effect of resting sympathetic 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 antinociceptive. 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 distention, as described elsewhere. The effect of resting CVT on brain networks during acute oesophageal pain were determined by means of network based statistics. Changes in resting CVT were correlated with functional MRI data collected from a range of brain regions.

**Results:** A total of 51 out of 140 patients (36.4%) exhibited some neurosurgical symptoms-most often visual disturbances in 17 patients (33.3%) and limbs paresthesia in 12 patients (23.5%). Among patients with a presence of neurological symptoms, 5 patients (3.6%) had definitely been diagnosed with a neurodegenerative/demyelinating disease (multiple sclerosis - 2 patients, Lebert optic neuropathy - 1 patient, Parkinson’s disease - 1 patient and Allgrov syndrome - 1 patient). Furthermore, 7 patients with a positive questionnaire had been diagnosed with other neurological diseases (tetany n = 3, epilepsy n = 2). Fourteen patients (27.4%) among those with neurological symptoms (vs. 0 out of 89 patients without neurological symptoms) had a positive family history of a neurodegenerative or a demyelinating disease. Among 106 patients with a neurodegenerative/demyelinating disease, 30 of them (28%) described dysphagia in 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.

**Abstract No:** P1167

**Table 1:** Associations between individual psychological traits and symptom severity. **Non-FGID**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Bowel Symptom Severity</th>
<th>Symptom Severity Combined</th>
<th>Episodic Symptom Severity</th>
<th>Symptom Severity Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-focused coping</td>
<td>2.92 (1.23)***</td>
<td>0.93 (0.14)</td>
<td>1.16 (0.15)</td>
<td>1.00 (0.44)</td>
</tr>
<tr>
<td>Worry</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)**</td>
<td>1.60 (0.22)**</td>
<td>1.00 (0.44)</td>
</tr>
<tr>
<td>Avoidant coping</td>
<td>0.41 (0.21)**</td>
<td>0.89 (0.14)</td>
<td>0.91 (0.12)</td>
<td>0.97 (0.39)</td>
</tr>
<tr>
<td>Doctor relationship</td>
<td>2.96 (1.77)**</td>
<td>1.09 (0.16)</td>
<td>1.06 (0.14)</td>
<td>1.00 (0.54)</td>
</tr>
<tr>
<td>Childhood non-sexual abuse</td>
<td>1.65 (0.68)</td>
<td>1.06 (0.15)</td>
<td>1.33 (0.17)</td>
<td>1.94 (0.88)</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>
</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>
</tr>
<tr>
<td>Doctor reassurance</td>
<td>0.99 (0.31)</td>
<td>1.06 (0.13)</td>
<td>0.94 (0.14)</td>
<td>1.06 (0.34)</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>
</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>
</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 episodic 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; Episodic: 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.

**P1169 HIGH RESTING PARASYMPATHETIC CARDIAC VAGAL TONE CONFERS A UNIQUE FUNCTIONAL BRAIN NETWORK DURING ACUTE OESOPHAGEAL PAIN**

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**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 distention, as described elsewhere. The effect of resting CVT on brain networks during acute oesophageal pain were determined by means of network based statistics. Changes in resting CVT were correlated with functional MRI data collected from a range of brain regions.

**Results:** A total of 51 out of 140 patients (36.4%) exhibited some neurosurgical symptoms-most often visual disturbances in 17 patients (33.3%) and limbs paresthesia in 12 patients (23.5%). Among patients with a presence of neurological symptoms, 5 patients (3.6%) had definitely been diagnosed with a neurodegenerative/demyelinating disease (multiple sclerosis - 2 patients, Lebert optic neuropathy - 1 patient, Parkinson’s disease - 1 patient and Allgrov syndrome - 1 patient). Furthermore, 7 patients with a positive questionnaire had been diagnosed with other neurological diseases (tetany n = 3, epilepsy n = 2). Fourteen patients (27.4%) among those with neurological symptoms (vs. 0 out of 89 patients without neurological symptoms) had a positive family history of a neurodegenerative or a demyelinating disease. Among 106 patients with a neurodegenerative/demyelinating disease, 30 of them (28%) described dysphagia in 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.
functional connections). These interconnections included the following: thala-mus-amygdala, thalamus-hypothalamus, hypothalamus-NAc, amygdala-pu-tamen amygdala-NAc and insula-patamen. No significant network was identified for the low CVT group.

Conclusion: During acute oesophageal pain, resting cardiac vagal tone yields a functional network comprising numerous complex subcortical brain regions, many of which have been previously associated with either visceral pain or modulation of baseline autonoms either at the physiological or neuroana-tomical level (3). Previous research has suggested that a high resting CVT may be protective of noiceptive 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 neurophysiolog-ical process of parasympathetic modulation of painful sensory signaling. Lastly, to date, no studies have undertaken real-time assessment of the ANS (including CTV) 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

PI170 RAPID DRINK CHALLENGE (RDC) TEST DURING OESOPHAGEAL HIGH RESOLUTION MANOMETRY (HRM) IN PATIENTS WITH OESOPHAGO-GASTRIC JUNCTION OUTFLOW OBSTRUCTION

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Introduction: Oesophago-gastric junction outflow obstruction (OGJOO) is of undetermined 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 3252 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 contractile integral (DCI) integrated relaxation pressure (IRP), distal and pan-oesopha-gaeal pressurization (POP; homogeneous oesophageal pressurization >30 mmHg) were reported for 5 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 compared 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 successful-ly 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=0.017) 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 parameters were reported in the table. The causes of OGJOO were similar in patients with and without POP during RDC (previous oesophago-gastric surgery 34% and 51% respectively, achalasia 14% and 2%, mediastinal neoplasia 3% and 7%, miscellaneous 10% and 22%, unknown 38% and 17%). OS was not significantly different between the two groups.

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 Cросop
All other authors have declared no conflicts of interest.

PI171 THE NORMATIVE VALUES OF A NEW 36 CHANNELS WATER PERFUSION ESOPHAGEAL MOTILITY CATHETER

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Introduction: High resolution manometry (HRM) is performed with solid-state catheters (SS) in many centers. However according to Chicago classification, very limited data from healthy volunteers are available for some catheters and starting from IRP, numerical values are crucial for the diagnosis. Because of the cost of the SS-HRM catheters many centers especially from developing countries use water perfusion HRM (W-HRM) catheters up to 24 channels and normal values are even more limited.

Aims & Methods: We evaluated a prototype 36 channels W-HRM reused catheter allowing to measure 3-D pressure vector volume analysis of lower esophageal sphinc-ter in healthy volunteers and compared to 36 channels SS-HRM catheters (Laborie-MMS Canada). We included 43 healthy volunteers without any upper gastrointestinal complaint. Upper gastrointestinal endoscopy and 24h impedance-pH monitor- ing performed in all subjects. Four subjects were excluded because of silent GERD. 39 subjects were analysed (25 males, W-HRM (n=39), SS-HRM (n=33)). Thirty-three patients underwent two esophageal manometry studies within two consecutive days with a random order. Procedures were performed in supine position with receiving ten times 5 mL water, five times solid food and multiple water swallow with 200 mL of water. 36 channel water-perfused 3-D HRM catheter and 36 channel solid state HRM catheter were used (Laborie-MMS Canada).

Results: There was significant differences between two catheters in terms of Integrated Relaxation Pressure (IRP), Distal Contractile Integrale (DCI) and DCI- expanded, LES resting pressure, % of ineffective peristalsis, and esopha-gegal length both with water and solid food swallows (Table). No difference has been shown with distal latency (DL), LES length, breaks size (Table).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>W-HRM (n=39)</th>
<th>SS-HRM (n=33)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distal latency (ms)</td>
<td>128±32</td>
<td>135±35</td>
<td>0.045</td>
</tr>
<tr>
<td>LES resting pressure (mmHg)</td>
<td>17±3</td>
<td>18±3</td>
<td>0.011</td>
</tr>
<tr>
<td>IRP (mmHg)</td>
<td>17±4</td>
<td>18±4</td>
<td>0.045</td>
</tr>
<tr>
<td>DCI (mmHg*s/cm)</td>
<td>121±79</td>
<td>125±82</td>
<td>0.006</td>
</tr>
<tr>
<td>Mean % ineffective peristalsis</td>
<td>15±3</td>
<td>18±4</td>
<td>0.003</td>
</tr>
</tbody>
</table>
Results of SS, MRS and RDT in patients with IEM and FH

Results: We evaluated 30 patients with EGJ-OO (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 24-h analysis was performed to select patients with FH (normal AET and number of reflux and reflux-symptom correlation). During HRM the mean DCI resulted similar in patients with EGJ-OO compared to FH (p = 0.839). One-hundred and eighty MRS and 60 RDT were evaluated. The lack of body inhibition was found in 11% (20/180) during MRS and in 53% (16/30) during 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.

Conclusion: Patients with EGJ-OO showed less peristaltic reserve during MRS and RDT. The RDT evidenced frequently lack of body inhibition in patients with EGJ-OO.

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

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 ± 1468.1</td>
<td>1982 ± 974.4</td>
</tr>
<tr>
<td>Mean DCI RDT</td>
<td>817.3 ± 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>MRS weak/fail (60)</td>
<td>20/30</td>
<td>2/4</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</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>body inhibition (%)</td>
<td>47</td>
<td>100</td>
</tr>
</tbody>
</table>

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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 (HRM) in the upright position. 18 patients with oesophageal diverticula were found and were free of previous surgery. Traction diverticulum was excluded in all patients. We also included 10 healthy controls. HRM 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 it was 70 years old for patients.

Results: The main reported symptom was dysphagia (76%). HRM found 11 (61%) patients with an oesophageal motor disorder, including 2 oesophago-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 increased 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 diverticulum were greater in patients than healthy controls (p < 0.05 for wet swallows), as previously reported1. Other metrics are summarized in the table.

Conclusion: While more than one-third of HRM using wet swallows were normal, provocative testing using solid swallows 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

Hrm metrics with comparisons between wet swallows in controls and patients, and between wet and solid swallows among patients.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Controls (liquids)</th>
<th>Patients (liquids)</th>
<th>Patients (solids)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of swallows</td>
<td>9.30</td>
<td>9.94</td>
<td>9.41</td>
</tr>
<tr>
<td>EGJ resting pressure (mmHg)</td>
<td>29.30</td>
<td>28.76</td>
<td>34.66</td>
</tr>
<tr>
<td>Mean IRP 4s (mmHg)</td>
<td>11.50</td>
<td>14.32</td>
<td>18.25*</td>
</tr>
<tr>
<td>Mean DCM (mmHg.s.cm)</td>
<td>1315.10</td>
<td>2877.99</td>
<td>7341.67**</td>
</tr>
<tr>
<td>Distal latency (s)</td>
<td>6.70</td>
<td>6.05</td>
<td>7.11*</td>
</tr>
<tr>
<td>Intrabosul pressure (mmHg)</td>
<td>8.10</td>
<td>11.88*</td>
<td>15.19</td>
</tr>
<tr>
<td>Mean pressure slope</td>
<td>−0.65</td>
<td>2.29**</td>
<td>5.29</td>
</tr>
<tr>
<td>Mid-oesophagus pressure</td>
<td>−0.36</td>
<td>1.41**</td>
<td>0.46</td>
</tr>
</tbody>
</table>

P1176 EVALUATION OF ESOPHAGO-GASTRIC JUNCTION CONTRACTILITY AFTER DIFFERENT TREATMENTS FOR ACHALASIA

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Aims and methods: Achalasia is a chronic oesophageal motor disorder resulting in a loss of proper oesophageal peristalsis. In Europe, the three most commonly used treatments for achalasia are pneumatic dilation (PD), Heller myotomy (HM) and Toupet fundoplication. Each technique has advantages and disadvantages and limited evidence is available to guide clinical decision making. We aimed to compare the contractile integrity at the oesophagogastric junction before and after treatment in achalasia patients.

Method: A total of 11 patients with achalasia underwent esophageal manometry. Of these, 8 underwent PD, 2 HM and 1 Toupet procedure. Mean age was 50 ± 15 years (range: 24–77) and mean body mass index (BMI) was 25 ± 4 kg/m². All patients underwent a baseline oesophageal manometry and a second oesophageal manometry after a mean follow-up of 14 ± 7.4 months (range: 3–24 months).

Results: The main reported symptom was dysphagia (76%). A total of 8 patients had a normal HRM before treatment. After treatment, 7 patients showed improved contractility, while one patient showed no change. The remaining patient had a normal HRM before treatment and a normal contractility after treatment. The mean total contractility index of all patients improved significantly from 0.01 ± 0.01 to 0.60 ± 0.30 (P < 0.001). The mean resting pressure, peak pressure, length of the relaxation zone and distal latency were all significantly reduced after treatment (P < 0.05).

Conclusion: Our results suggest that achalasia patients may benefit from repeated oesophageal manometry after treatment to evaluate the contractile integrity at the oesophagogastric junction.
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-CI 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 LHMD, 8 LHM-T and 6 LHM-NR. At baseline, no differences were observed in age, sex, pre-operative mean Eckardt score, GERDQ score, integral relaxation pressure (IRP) and EGJ-CI were recorded. All Type III subjects underwent LHM-D (3) and LHMT (2). After all the procedures, in all the patients there was a significant decrease in Eckardt score, IRP and EGJ-CI (p < 0.001, < 0.001 and < 0.05, respectively). PD and LHM-NR showed higher EGJ-CI (20.9 ± 3.5 and 23.5 ± 11.1 mmHg.cm, respectively) and IRP (12.2 ± 3.4 and 13.4 ± 4.5, respectively) than LHM-D and LHMT (18.4 ± 5.9, p < 0.05 and 9.3 ± 4.1 p < 0.05 mmHg.cm, respectively for EGJ-CI; 5.2 ± 2.5, p < 0.05 and 2.3 ± 3.7 p < 0.001 mmHg.cm, respectively for IRP). Post-operative Eckardt score was lower in LHMD and LHMT (2.1 ± 0.5 and 2.0 ± 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 LHMT (3.0 ± 1.7 vs. 8.2 ± 3.9, p < 0.05). Low post-operative EGJ-CI 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. LHMD and LHMT seem to result in a stronger alteration of the EGJ with LHMT resulting in an increased risk of post obstructive reflux.

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

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**P1178 MULTIPLE RAPID SWALLOWING IN JACKHAMMER ESOPHAGUS PATIENTS: EVIDENCE FOR ALTERED NEURAL CONTROL**

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**Introduction:** Jackhammer esophagus is a rare epiphageal motility disorder. Little is known about its physiopathology; however, an excess of cholinergic drive has been suggested as an important etiologic factor. Multiple rapid swallowing (MRS) is an adjunctive test in order to evaluate integrity of inhibitory and excitatory neural pathways. In healthy subjects 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 achalasia esophagus preservation of motor inhibition during MRS has been described with traditional manometry. 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. 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 4s IRP during MRS compared to SS (see table 1); however, values were higher than those of 4s 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>
</tr>
</thead>
<tbody>
<tr>
<td>4s IRP, mmHg</td>
<td>7.5</td>
</tr>
<tr>
<td>DCl, mmHg/sec.cm</td>
<td>6506</td>
</tr>
<tr>
<td>CFV, cm/s</td>
<td>3.9</td>
</tr>
<tr>
<td>DL, sec</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Conclusion: Contrary to what occurs in healthy subjects, MRS decrease 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. Studies are needed in order to evaluate if reduction of DCl during MRS can improve dysphagia and chest pain in these patients.

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

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**P1179 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM) AS TREATMENT FOR FUNCTIONAL DELAYED GASTRIC EMPTYING: INITIAL ASIAN EXPERIENCE**

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**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, Gastrooesophageal Cardinal Symptoms Index (GCIS) 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 43.7 ± 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 because the procedure may have been performed insufficiently.

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

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**References**

**P1179 EFFECTIVENESS OF CAP-ASSISTED DEVICE IN THE ENDOSCOPY MANAGEMENT OF FOOD BOLUS OBSTRUCTION IN THE UPPER ESOPHAGUS**

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**Introduction:** Although cap-assisted technique has been shown to be effective in retrieving 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:** A total of 255 subjects into FD group and Control group. FD group was defined as the subjects who had epigastric pain syndrome (EPS) with or without reflux symptoms. Control group had such endoscopic findings. However, it is not discussed whether we can diagnose patients with EPS without it. Interestingly, AUC5 and AUC15 values (24.85/2.51, respectively) in EPS patients with pancreatic enzyme abnormalities were also significantly (p = 0.002 and p = 0.001, respectively) increased compared to those (19.75/1.99, respectively) in EPS patients without pancreatic enzyme abnormalities (n = 42) based on Rome III criteria. Gastric motility was evaluated using the 13C-acetate breath test. Early chronic pancreatitis was detected by endosonography and graded from 0 to 7.

**Conclusion:** Further studies are warranted to clarify how EPS patients with pancreatic enzyme abnormalities were diagnosed by endosonography as having concomitant early chronic pancreatitis preceding peptic ulcer disease.

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

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**P1180 DO THE ENDOSCOPIC FINDINGS OF GASTRITIS BRING THE FD SYMPTOMS?**

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**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 have to consider whether we can not judge whether obvious abnormal findings are seen like gastric erosion fulfill the exclusion criteria or not. Indeed, this issue was pointed out that there is notable inconsistency in the exclusion criteria of FD (1). Recently, the Kyoto classification of gastritis has been published and used widely 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 related 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 who employed the weighed-Frequency of Scale for the Dyspeptic Symptoms (PDS) (n = 3) were successfully treated when switched to cap-assisted approach. Cap-assisted approach was associated with a shorter total procedural time (34.4 ± 3.2 min vs. 43.2 ± 2.2 min, P = 0.005), a shorter length of hospital stay (3.9 ± 0.6 days vs. 1.3 ± 0.6 days, P = 0.001) and more en-block removal (88.9% vs. 22.8%, 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 as compared to conventional techniques. Although the finding that cap-assisted technique should be the first line technique in the management of esophageal FBO, further evaluation with a randomized multicenter trial is warranted.

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

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**P1181 IMPACT OF EPIGASTRIC PAIN SYNDROME ACCOMPANYING PANCREATIC ENZYME ABNORMALITIES EXHIBITED RAPID EARLY PHASE OF GASTRIC EMPTIYING AND EARLY CHRONIC PANCREATITIS USING ENDOSONOGRAPHY**

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**Introduction:** 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 (FD-PDS, n = 59) 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 13C-acetate 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 disturbed compared to those in EPS patients without it. Interestingly, AUC5 and AUC15 values (24.85±1.31 and 56.11±2.51, 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±1.99 and 47.02±2.99, respectively) in EPS patients without it.

**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.

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**P1182 ENDOSCOPIC AUTOLOGOUS TRANSPLANTATION OF ESOPHAGEAL MUCOSA FOR TREATING THE REFRACTORY CAUSTIC ESOPHAGEAL STRICATURE**

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**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 dilation. Clinical ESD results revealed that benign stricture would be usually caused by more 75% mucosa loss of circumferential esophagus. Cultured autologous esophageal mucosa transplantation might inhibit reflux fibrobiosis 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 (44.5%) and he was treated for multiple esophageal dilatations with no clinical benefit 3 times. He was referred to our hospital for surgery. Initial EGD showed grade III caustic stricture with esophageal narrowing of 1.2 cm. Under X-ray, routine endoscopic dilation was firstly applied to a diameter of 1.28 cm. Three days later, with the informed consent, ESD operation was utilized to dissect 507.5 cm normal esophageal mucosa at the 18–23 cm location from the incisors. Mucosal 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.
Results: The endoscopic follow-up was planned every month. After 1 months, 18 (23%) esophageal region has healed to be normal. Within 6 months, the stricture process was exactly delayed as expected. The patient stated his symptom was remarkably improved. Gastroscopy revealed the esophageal implanted lesion was covered with an epithelium and the luminal surface was flat, without ulceration.

Conclusion: Autologous esophageal mucosa transplantation might facilitate tissue re-epithelialization, reduce pathological fibroplasia, and be helpful for managing or preventing esophageal strictures. More clinical controlled trials are required to provide evidenced-based recommendation and promote its clinical application.

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

P11184 INDIVIDUAL ASSESSMENT OF Gastric ACID PRODUCTION BY MEANS OF A NON-INVASIVE TEST: RELATIONSHIP BETWEEN MAXIMAL ACID OUTPUT AND PEPsinogen I LEVELS

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Introduction: The assessment of gastric 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, mean body mass index (BMI) = 25.12 ± 13.7 years range 20–73) characterized by achlorhydria or low levels of acid production (Group 1), or by duodenal ulcer (50, M = 42, mean age = 43.5 ± 11.5 years range = 17–65) in which an hypersecretory status is claimed (Group 2). In the same group, we studied 46 patients (M = 44 mean age = 44.0 ± 8.3 years range = 25–80) with normal upper GI endoscopy and gastric histology, without previous history of neoplasms or upper gastrointestinal surgery (Group 3). In all patients we measured M.A.O. by means of two hours collection of gastric juice that was followed by an i.m. injection of pentagastrin at the dosage of 6 μg/kg (M.A.O. normal values: 5–25 mEq/h). All patients underwent blood sample for determination of serum PGI (BioHit Oyj, Finland; normal values: 30–120 μg/l). All determinations, both for M.A.O. and PGI were made off medication.

Results: The mean M.A.O. value in group 1 was 2.15 mEq/h, in Group 2 32.49 mEq/h, in Group 3 17.48 mEq/h. A statistically significant difference was found between the 3 groups (Group 1 vs. Group 2 p < 0.00001; Group 1 vs. Group 2 p < 0.0001; Group 2 vs. Group 3 p < 0.00001). The PGI mean values in Group 1 was 11.39 g/l in Group 2 107.72 g/l in Group 3 84.28 g/l (Group 1 vs Group 2: p < 0.000001; Group 1 vs Group 2: p < 0.00001; Group 2 vs Group 3 p < 0.05). The relationship between M.A.O. and PGI showed a Pearson R = 0.683 (p = 0.001). No statistically significant difference was found comparing M.A.O. and PGI in the single groups (p > ns).

Conclusion: Serum PGI levels are fitting with M.A.O. both in hyper- and hypo-acid secretory conditions like chronic atrophic gastritis and duodenal ulcer, as well as in control subjects, suggesting that PGI could be adopted in clinical practice to assess gastric acid production in individual subjects for a proper management of acid related diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & 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 obese and sarcopenic status: normal, obese, sarcopenic, and obese sarcopenic.

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 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 1.22 (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: The 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

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

References
side. However, TAT was not significant in the multivariate analysis. Lower HDL levels (OR 0.28; 95% CI 0.11 to 0.71, p = 0.011) and higher 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 EGJ were associated with visceral obesity measured by VAT, ratio of VAT to SAT, BMI and WC. Life style modification such as in left deciduous stump position might be emphasized in the subjects with visceral obesity.

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

P1190 A LESSER COMPETENT OESOPHAGO-GASTRIC JUNCTION IS ASSOCIATED WITH OESOPHAGEAL ACID HYPERSENSITIVITY EVEN IN HEALTHY CONTROLS

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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 internal sphincter, 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) [1]. 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 sensitivity in relation to OGJ competency, hypothesizing that sensitivity increases with impaired sphincter function. Twenty-three patients with Barrett’s oesophagus (mean age: 64.4±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 analog scale validated for visceral pain. Data were analysed using multi-level, mixed-effects regression analysis in Statia 12.

Results: Oesophageal acid sensitivity increased with a more incompetent sphincter: A lower tolerated acid volume was associated with greater distensibility (p=0.03) and with lower pressure (p=0.006) and with higher 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) [1]. All of this said no studies of our knowledge have specifically addressed the possible association between sphincter function of the OGJ and oesophageal sensitivity.

Conclusion: Oesophageal acid sensitivity increased with a more incompetent OGJ. Based on this and previous findings, we suggest that even in some healthy controls, a modest degree of OGJ incompetence allows gastric acid to reflux. This may again lead to low-grade oesophageal inflammation and mucosal damage, thus evoking acid hypersensitivity. 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 clonal antibodies that capture and detect pepsin protein. TAGG Research Centre, Tallaght Hospital and Trinity College, Dublin/Ireland

References

P1191 THE MUCOSAL INTEGRITY IN PHENOTYPES OF GASTROESOPHAGEAL REFUX DISEASE AND FUNCTIONAL HEARTBURN

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Introduction: Three different phenotypes of gastroesophageal reflux disease (GERD) such as erosive reflux (ERD), nonerosive reflux (NERD), oesophageal 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 Using chamber system. Distal esophageal mucosal biopsies from 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 into two hours as well as evaluation of dilated 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 subtypes decreased 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 of the parameters 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>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Controls</td>
<td>163.6±41.1</td>
<td>2.2±0.9</td>
<td>43.9±16.8</td>
</tr>
<tr>
<td>GERD (total)</td>
<td>132.5±38.7**</td>
<td>2.6±1.5</td>
<td>62.2±35.8*</td>
</tr>
<tr>
<td>Esophageal Hypersensitivity</td>
<td>150.6±23.9</td>
<td>2.2±1.0</td>
<td>71.8±34.5</td>
</tr>
<tr>
<td>NERD</td>
<td>139.6±50.2</td>
<td>2.2±1.3</td>
<td>65.6±39.2*</td>
</tr>
<tr>
<td>ERD (total)</td>
<td>123.3±29.8*</td>
<td>3.0±1.6±*</td>
<td>58.3±34.7**</td>
</tr>
<tr>
<td>ERD grade A/B</td>
<td>130.5±27.8*</td>
<td>2.9±1.6</td>
<td>54.0±30.5</td>
</tr>
<tr>
<td>ERD grade C/D</td>
<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>4.9±0.9</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 injury 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 PEPINS AND PH LEVELS OF HUMAN GASTRIC JUICE IN GASTROESOPHAGEAL REFUX DISEASE SUBGROUPS AND FUNCTIONAL HEARTBURN

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2Gastroenterology & Hepatology, Ege University, Izmir/Turkey

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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 erosive 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 PepTest 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 than 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>514.7 ± 282.1</td>
</tr>
<tr>
<td>ERD-A/B</td>
<td>521.0 ± 284.9</td>
</tr>
<tr>
<td>ERD-C/D</td>
<td>485.5 ± 299.2</td>
</tr>
<tr>
<td>Total NERD</td>
<td>456.9 ± 322.1</td>
</tr>
<tr>
<td>True NERD</td>
<td>428.1 ± 293.0</td>
</tr>
<tr>
<td>EH</td>
<td>536.0 ± 432.1</td>
</tr>
<tr>
<td>GERD (total)</td>
<td>494.5 ± 294.1</td>
</tr>
<tr>
<td>FH</td>
<td>654.2 ± 300.4</td>
</tr>
<tr>
<td>HC</td>
<td>596.2 ± 302.8</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

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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, we have been assessed in the health control group in regard to waist circumference, BMI; LDL, Fat, 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 (BMD) 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 bioelectrical impedance 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 (Min.-Max.)</td>
<td>Median (Min.-Max.)</td>
<td>Median (Min.-Max.)</td>
</tr>
<tr>
<td>Glucose</td>
<td>95.00 (77–165)</td>
<td>92 (53–165)</td>
</tr>
<tr>
<td>Insulin</td>
<td>8.05 (1.90–90)</td>
<td>8.35 (1.32–108)</td>
</tr>
<tr>
<td>HDL</td>
<td>51.50 (3.10–99)</td>
<td>47.50 (3.10–109)</td>
</tr>
<tr>
<td>LDL</td>
<td>74.50 (42–129)</td>
<td>87 (11–243)</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>81 (33–350)</td>
<td>97 (28–404)</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>146.50 (73–222)</td>
<td>161 (19–310)</td>
</tr>
<tr>
<td>Uric Acid</td>
<td>4.05 (2.0–10)</td>
<td>4.0 (2.0–20)</td>
</tr>
<tr>
<td>ALT</td>
<td>1.60 (0.07–16)</td>
<td>1.54 (0.07–16)</td>
</tr>
<tr>
<td>TBW (mL/kg)</td>
<td>43.95 (34.90–74.20)</td>
<td>43.95 (34.90–74.20)</td>
</tr>
<tr>
<td>Fat mass</td>
<td>50.00 (34.90–10)</td>
<td>15 (7–35)</td>
</tr>
<tr>
<td>Fat mass</td>
<td>19.30 (3–10)</td>
<td>24.57 (9–35)</td>
</tr>
<tr>
<td>Fat mass</td>
<td>12.00 (10–36.20)</td>
<td>15.15 (10–43.40)</td>
</tr>
<tr>
<td>FFM</td>
<td>49.95 (19–75.10)</td>
<td>46.05 (38–74.20)</td>
</tr>
<tr>
<td>Muscle Mass</td>
<td>53.05 (35–70.50)</td>
<td>45.50 (36.80–74.20)</td>
</tr>
<tr>
<td>TBW</td>
<td>32.70 (25–52.60)</td>
<td>32.50 (25–52.60)</td>
</tr>
<tr>
<td>TBW Ytide</td>
<td>55.80 (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 (1.90–4.0)</td>
</tr>
<tr>
<td>BMR</td>
<td>5.858 (55.94–9.138)</td>
<td>5.851 (50.82–8.996)</td>
</tr>
<tr>
<td>Metabolic Age</td>
<td>16 (6–64)</td>
<td>27 (12–66)</td>
</tr>
<tr>
<td>Waist Circumference</td>
<td>74.30 (6.5–6.2)</td>
<td>79.94 (10–6.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mann Whitney U Test (Monte Carlo)</th>
<th>Min.-Minimum</th>
<th>Max.-Maximum</th>
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<tbody>
<tr>
<td>P Value</td>
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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-OBSESE CASES

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3Biochemistry, Kırkkale University, kırkkale/Turkey

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, we have been surveyed by means of the questionnaire including the demographic data and the reflux symptoms. Our study 120 BMI < 30 dyspeptic non-obese, gastroesophageal reflux disease (GERD) diagnosed according to the health control group in regard to waist circumference, BMI; LDL, Fat, 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 (BMD) 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.
Introduction: Proximal 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, no differences were found between NERD and HCs at proximal esophagus due to the limited proximal migration of the refluxate. Systemic sclerosis (SSc) is a systemic disease characterized by the deposition of collagen and matrix proteins in the connective tissue of the skin and visceral organs, such as the gastrointestinal tract. This event could potentially affect the conductivity of the esophageal wall and consequently reduce BI levels, also at proximal level, but data in this regard are limited.

Aims & Methods: We aimed to prospectively compare BI levels between a group of NERD patients and two groups of SSc patients, one with a clear manometric picture of scleroderma esophagus (i.e. hypotensive esophago-gastric junction pressure and abnormal peristalsis) and one without esophageal involvement.

Consecutive patients with heartburn and those with a definite diagnosis of SSc underwent upper endoscopy in order to assess the presence of esophageal mucosal lesions. Further, a group of healthy subjects was used as controls (HCs). Thereafter, all endoscopy-negative and SSc patients underwent esophageal high-resolution manometry and impedance-pH testing off-therapy. Impedance-pH tracings were blindly and manually reviewed, and we measured distal AET. Systemic sclerosis (SSc) is a systemic disease characterized by the deposition of collagen and matrix proteins in the connective tissue of the skin and visceral organs, such as the gastrointestinal tract. This event could potentially affect the conductivity of the esophageal wall and consequently reduce BI levels, also at proximal level, but data in this regard are limited.

Results: Fifty patients [38F; mean age 51yrs] with NERD, 50 SSc patients [44F; mean age 52yrs] with esophageal involvement and HCs (p = 0.05).

Conclusion: Proximal esophageal BI levels are able to segregate between scleroderma patients with and without esophageal involvement. The advent of novel and poorly invasive methods for the assessment of esophageal mucosal impedance will allow us to perform this measurement without the need of prolonged probe insertion.

Disclosure of Interest: V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD All other authors have declared no conflicts of interest.
channel of the scope. Distal two rings were contacted to the distal and proximal part of the esophagus approximately 20–25 cm, using GE Mach III Gastro 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 can segregate NERD from ERD addition to controls (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline impedance</th>
<th>Distal mucosal impedance (proximal esophagus)</th>
<th>Mucosal impedance (proximal esophagus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n = 15)</td>
<td>2625 ± 394</td>
<td>2637 ± 547</td>
<td>3190 ± 515</td>
</tr>
<tr>
<td>FH and EH (n = 17)</td>
<td>1906 ± 716</td>
<td>2654 ± 721</td>
<td>3335 ± 880</td>
</tr>
<tr>
<td>NERD (n = 26)</td>
<td>1305 ± 799</td>
<td>2423 ± 852</td>
<td>3407 ± 1074</td>
</tr>
<tr>
<td>ERD A-B (n = 31)</td>
<td>868 ± 481</td>
<td>1538 ± 646</td>
<td>3096 ± 928</td>
</tr>
<tr>
<td>ERD C-D (n = 11)</td>
<td>441 ± 301</td>
<td>1355 ± 672</td>
<td>3236 ± 1653</td>
</tr>
</tbody>
</table>

Conclusions: As a new diagnostic tool, MI needs validation studies and our results failed to show additional diagnostic value in non-erosive patients compared to healthy controls. Since regular catheters are failed, new balloon-shaped catheters should be validated. BI might be a better tool to discriminate NERD from controls. This implicates 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-HISTOPATHOLOGIC ESOPHAGEAL FINDINGS IN ATROPHIC BODY GASTRITIS PATIENTS WITH GASTRO-ESOPHAGEAL REFUX SYMPTOMS**

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**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 gastro-esophageal reflux (GER) symptoms have been reported and in one third of them (mostly non-acid) reflux has been documented at pH-monitoring. At present, data regarding endoscopic and histopathologic GER-related esophageal findings in this setting are lacking.

**Aims & Methods:** Aim of this study was to assess the occurrence of GER symptoms and endoscopic-histopathologic esophageal findings in ABG patients. During 12-months, 35 consecutive AGB patients [80% female; median age 60 yrs (27-81); BMI 25.7 kg/m2(18.2–32.3); fasting gastrinaemia 329 pg/ml (215–1476); pepsinogen I 10 ng/l (0–44); positive Ab against parietal cells (PDS) and epigastric pain syndrome (EPS)] was assessed by a standardized questionnaire. Gastritis and GER-related esophageal reflux disease (GERD) was assessed by a standardized questionnaire. 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 pH-metry 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 (GERD: M:F = 1:1.2, mean age: 56 years; dyspepsia: M:F = 0.9, mean age: 53 years; p = ns); heavy smokers was 29% in GERD group, 26% in dyspeptics; p = ns. Heavy drinkers were 25% in GERD group, 22% in dyspepsia; p = ns. In GERD group, typical symptoms were detected in 547 out of 701 patients, being heartburn the prevalent symptom in 479 subjects and regurgitation in 68 ones. Atypical symptoms, mainly chronic cough were present in 303 patients. 313 patients showed grade A esophagitis, 32 grade B, 4 grade C. One hundred seven out of 221 patients showed a positive DeMeester score foe acid reflux.

**Conclusion:** Sex, age, smoking habits and alcohol consumption seem no differ in the two studied populations. In GERD cohort, the majority of patients experienced Non Erosive reflux Disease (NERD). The majority of GERD patients suffered by typical symptoms; chronic cough represented the most frequent manifestation among the atypical and extra-oesophageal ones.

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

**P1200 REAL-WORLD RESPONSE OF PATIENTS WITH GASTROESOPHAGEAL REFUX DISEASE TO EMPIRICAL TREATMENT WITH PROTON PUMP INHIBITORS: A MULTICENTER, PROSPECTIVE, OBSERVATIONAL STUDY IN CHINA**

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**Introduction:** In China, 13.6% of gastrointestinal outpatients suffer from gastro-esophageal 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].

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**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, compared to dyspeptic 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 pH-metry 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 (GERD: M:F = 1:1.2, mean age: 56 years; dyspepsia: M:F = 0.9, mean age: 53 years; p = ns); heavy smokers was 29% in GERD group, 26% in dyspepsia; p = ns. Heavy drinkers were 25% in GERD group, 22% in dyspepsia; p = ns. In GERD group, typical symptoms were detected in 547 out of 701 patients, being heartburn the prevalent symptom in 479 subjects and regurgitation in 68 ones. Atypical symptoms, mainly chronic cough were present in 303 patients. 313 patients showed grade A esophagitis, 32 grade B, 4 grade C. One hundred seven out of 221 patients showed a positive DeMeester score for acid reflux.

**Conclusion:** Sex, age, smoking habits and alcohol consumption seem no differ in the two studied population. In GERD cohort, the majority of patients experienced Non Erosive reflux Disease (NERD). The majority of GERD patients suffered by typical symptoms; chronic cough represented the most frequent manifestation among the atypical and extra-oesophageal ones.

**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 empiric treatment with PPIs. Responders were defined as having heartburn/regurgitation on ≤1 day during the prior 7 days, assessed by the Gerd-Q questionnaire. Outpatients aged between 18 and 65 years with a Gerd-Q score ≥8 were enrolled if they were prescribed standard-dose PPIs as empirical treatment and were not planned to have an endoscopy within 4 weeks of enrollment. The PPI regimen prescribed was decided completely at the physicians’ discretion. Patient demographics, diagnosis, prescribed PPI regimens, Gerd-Q score and symptom frequency were recorded. Data were collected at baseline, 2 weeks and 4 weeks after initiating PPI therapy. 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 0.8 ± 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 3 of 4 PPI doses was 99.5%. Esomeprazole was the most frequently received PPI (57.1% of patients). Other PPIs (rabeprazole, lanzoprazole, 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 (78.7%) 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 37.0% [95% CI, 33.5%–40.4%]. The overall median time to response was 12.4 days (95% CI, 12.1–12.6). Over the study duration, patients with Gerd-Q score demonstrated a decreasing trend. 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.

Table 1: Responder rate [1] and median time to response for different PPIs

<table>
<thead>
<tr>
<th>PPI</th>
<th>Median time to response (days)</th>
<th>Responder rate, % [95% CI]</th>
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</thead>
<tbody>
<tr>
<td>Esomeprazole</td>
<td>[12–114]</td>
<td>[51.4–60.4]</td>
</tr>
<tr>
<td>Other PPIs</td>
<td>[12–114]</td>
<td>[51.4–60.4]</td>
</tr>
<tr>
<td>Total</td>
<td>[12–114]</td>
<td>[51.4–60.4]</td>
</tr>
</tbody>
</table>

Responder rate = number of responders/number of patients who completed the therapeutic course or withdrew during the study. Response was defined as heartburn/regurgitation frequency ≤1 days during the prior 7 days.

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
studying with the diagnosis of refractory reflux to PPIs, this diagnosis had only been made on GERD-compatible symptoms. While the diagnosis is exclusively clinical, about a 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 pathologic 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

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2Department Of Surgery, Oncology And Gastroenterology, University of Padua, Padua/Italy
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4Digestive Pathophysiology Unit, Baggiovara Hospital, Modena/Italy
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Introduction: Recently, low-FODMAP diet has been proposed as 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 pathophysiological tests (esophageal manometry and impedance and pH monitoring, MII-pH) at Gastroenterology Unit in University of Pisa. We excluded patients older than 75 and younger than 18, those with primary esophageal motor disorders and with previous abdominal surgery. Medical history, voluntary habits and response to proton pump inhibitor (PPI) treatment were monitored, MII-pH at Gastroenterology Unit in University of Pisa. We excluded 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. In this cross-sectional, single-center study, we included 31 patients (20 female; mean age 49.1 yrs; mean BMI 24.4) with functional heartburn occurrence pre- and post a nutritional approach with low-FODMAP diet (see Table 1). Moreover, we observed a very important abdominal symptoms perception pre- and post- low-FODMAP diet in reducing heartburn in patients with FH and no pathophysiological evidence of gastroesophageal reflux 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</th>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>0</td>
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<td>4</td>
</tr>
<tr>
<td>1</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>4</td>
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</table>

Conclusion: This pilot study showed that a low-FODMAP diet was able to reduce heartburn perception in patients with FH and who did not obtain any symptom relief after PPI treatment. Larger prospective randomized controlled trial is mandatory to further explore these findings.

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

P1205 GENDER DIFFERENCES IN NEOPLASTIC PROGRESSION IN BARRETT'S ESOPHAGUS: A MULTICENTER PROSPECTIVE COHORT STUDY

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2Department Of Gastroenterology & Hepatology, Eramus University Medical Center, Rotterdam/Netherlands
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Introduction: Because of a higher prevalence of BE in males, recommendations in current guidelines are mainly based on male BE patients and make no difference in use of surveillance according to gender. Nevertheless, it is unknown whether female BE patients have the same neoplastic progression and acceleration rate as male patients.

Aims & Methods: The aim of this study was (1) to evaluate the difference between males and females in probability of and (2) time to neoplastic progression, as well as (3) gender differences in stage distribution of neoplastic progression in surveilled BE patients. In this multicenter prospective cohort study we included 729 patients with BE who met the inclusion criteria of a segment of >2 cm and confirmed intestinal metaplasia. Endoscopic surveillance was performed according to the American College of Gastroenterology guidelines. Cox regression modelling as well as accelerated failure time modelling were used to evaluate differences in probability of and time to neoplastic progression from HGD, EAC and both HGD and EAC between sexes, respectively. All models were adjusted for age, presence of esophagitis and length of BE. In case of a limited number of events, descriptive statistics were used.

Results: 532 males (73%; mean age 58 years, IQR 51-67) and 197 females (median age 64 years, 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 1.02-3.92). 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 (HR 0.45, 95% CI 0.22-0.94). There was no difference for overall neoplastic progression (AR 0.59, 95% CI 0.10-3.09). 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</th>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
<td>Total</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.

P1206 SINGLE SESSION FOCAL CRYOBALLOON ABLATION THERAPY IS SAFE AND EFFECTIVE IN THE TREATMENT OF DYSPLASIC BARRETT’S ESOPHAGUS

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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. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. The Cryocool Balloon Ablation System (FCBA; C2 Therapeutics, Phoenix City, CA, USA) is another ablation method based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated.
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 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 0.02 (IQR 0–0.4); 1–3) and 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 cryoablation 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 83–98), 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 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.

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Table 1: Baseline characteristics and maximum pain scores

PI207 CRYOBALLOON ABLATION OF DYSPLASTIC BARRETT’S ESOPHAGUS CAUSES SHORTER DURATION AND LESS SEVERE POST-PROCEDURAL PAIN AS COMPARED TO RADIOFREQUENCY ABLATION

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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, cryobalation 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. To determine post-procedural endpoints like pain might 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 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 CBA) and median BE length was similar for the two groups (FCBA: C0M2, RFA: C0M1, 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.

PI208 COMPARATIVE OUTCOMES OF RADIOFREQUENCY ABLATION FOR BARRETT’S ESOPHAGUS WITH DIFFERENT BASELINE HISTOLOGY

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Introduction: Radiofrequency ablation (RFA) with endoscopic mucosal resection is recommended for Barrett’s Esophagus (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 CRD rate among LGD (71.4%), HGD (76.1%) and IMC (84.8%) (p=0.03). CRD durability at 12 and 36 months (n = 107) was 99.0% and 97.0%, respectively. CRIM durability (n = 89) at 12 and 36 months was 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). CRD durability at 12 and 36 months for LGD, HGD and IMC were 100%, 96.4%, 100%, and 100%, 88.5%, 95.5%, respectively (log rank p = 0.60).

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.
CD4+ AND CD8+ LYMPHOCYTE RATE AND PD-L1 EXRESSION ARE PREDICTIVE OF CLINICAL COMPLETE RESPONSE AFTER NEOADJUVANT CHEMORADIATION FOR SQAMOUS CELL CANCER OF THE THORACIC ESOPHAGUS

P1210

CD4+ AND CD8+ LYMPHOCYTE RATE AND PD-L1 EXPRESSION ARE PREDICTIVE OF CLINICAL COMPLETE RESPONSE AFTER NEOADJUVANT CHEMORADIATION FOR SQAMOUS CELL CANCER OF THE THORACIC ESOPHAGUS

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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 HGD on pre-operative biopsies resected by EMR. The initial biopsies 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, HGD, Adenocarcinoma. Concordance statistical tests were performed to assess the variability between BS and EMR diagnoses among the centers involved.

Results: Between January 2005 and December 2015, 87 patients have undergone EMR for HGD on biopsies, in both centers. Among them, 41 (47%) had a discordant result between biopsies and resection specimen. The histological diagnoses were: BE and HGD (16.4%), metaplasia, adenocarcinoma (4% (4.6%) and one patient had no metaplasia. Finally, 33 patients could be analyzed, 29 men and 4 women, with a mean age of 63 years old. The mean length of BE according to Prague classification was C3-M5, with relief assessment C1 in the cases. A mean number of 1.4 endoscopic session was performed, with a mean of 2.7 resected pieces per EMR, which was macroscopically complete in 63.6% of the cases. The mean follow-up was 38 months.

After histological relecture, the Kappa coefficient for the diagnosis of HGD was low on the BS and ranged between 0 and 0.6 for the EMR specimen. The inter-observatory concordance was 0.2 (for both BS and EMR specimen) for the diagnosis of HGD. For other diagnoses, it was ranged between 0 and 0.5 for biopsies and between 0 and 0.6 for EMR specimen. The kappa coefficient regarding the diagnosis of BE was 0.5 for biopsies and 0.4 for the BS specimen after relecture was ranged between 0 and 0.6.

Conclusion: The discordance rate between initial diagnosis of HGD on BS and final diagnosis was high, around 47%. The intra and inter-observer concordance is insufficient, even in expert tertiary centers. Thus, the question about performing EMR based on random biopsies rather than endoscopic assessment has to be asked, and clearly evaluated in further studies.

Disclosure of Interest: M. Barthet: Consultant for Boston Scientific

All other authors have declared no conflicts of interest.

References


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 tissues. Meanwhile, TRPM2-AS expression was positively related 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 prognostic factor 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 non-long coding RNA TRPM2-AS could be a potential oncogene of ESCC. TRPM2-AS expression could serve as another potential therapeutic target and prognostic biomarker. In addition, our study demonstrated that expression of TRPM2-AS contributes to a lot 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.

P1213 ROLE OF CD80 EXPRESSION IN INFLAMMATORY-RELATED ESOPHAGEAL CARCINOCENESIS

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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 on esophageal cell lines such as CD80 and CD86 is known to be increased 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. Aims & Methods: The aim of this study was to investigate the role of CD80 in the inflammatory esophageal carcinogenesis and to characterize the immune environment of EAC. mucosa samples from cancer and from healthy esophagus were obtained during esophagectomy from patients affected by EAC. Fresh biopsies were obtained from patients who underwent endoscopy for screening or follow-up. Immunohistochemistry for CD80 was performed. Fresh biopsies were analyzed by flow cytometry to quantify the expression of CD80, its receptor CD28 and the lymphocytes activation marker CD38 on esophageal epithelial cells and CD8 inhibiting lymphocytes, respectively. A model of reflux induced esophageal carcinogenesis was created with a esophago-gastro-neuro-ostomy: C57Bl/6 mice were randomized to receive or not intraperitoneal injections of anti-CD80 antibody. The esophageal-gastric specimens were collected 32 ± 2 weeks after the experimentalization and analyzed in a blinded fashion. Non parametric statistics was used.

Results: Flow cytometric analysis of esophageal biopsies from healthy controls, Barrett esophagus, dysplastic esophagus and esophageal adenocarcinoma reveals that the expression of the costimulatory molecule CD80 by epithelial cells peaks during metaplasia in the inflammatory esophageal carcinogenesis. In the mice that received antiCD80 antibodies the rate of dysplasia in the fore stomach was largely unknown. In EAC, CD80 and CD86 expression 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 p53 overexpression and tumor recurrence was revealed to be an independent predictor of early recurrence with [HR = 2.995 (95% CI = 1.122–7.9896) p = 0.029] as well as cancer stage [HR = 2.995 (95% CI = 1.6693 to 5.666) p < 0.001]. On the other hand, nuclear p53 overexpression also tended to be an independent predictor of overall survival [HR = 2.9359 (95% CI = 0.9613 to 8.9663) p = 0.06] while cancer stage confirmed to be the main survival predictor [HR = 1.8689 (95% CI = 1.0810 to 3.2314) p = 0.023].

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

P1215 PHARMACOLOGICAL INHIBITION OF MONOCARBOXYLATE TRANSPORTER 1 INDUCES APOPTOSIS IN METASTATIC ESOPHAGEAL ADENOCARCINOMA CELLS

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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 increase apoptosis in cancer cells, but this aspect has not been investigated in esophageal adenocarcinoma (EAC) yet.

Aims & Methods: We aimed to study the expression of MCT1 and MCT4 in human EAC samples and to evaluate in vitro the effect of extracellular glucose 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 EAC. For the in vitro study, two different EAC cell lines were used: OE33 (ECACC), established from an EAC of the lower esophagus and OAC5M.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 (10, 100 and 1000 μM) was added to the culture medium under a normoxic and hypoxic atmosphere in standard (11nM) or high(30nM) glucose content in the media. Apoptosis was determined by flow cytometry (Annexin V-FITC and 7-AAD, fluorescine isothiocyanate). Intracellular lactate concentration was evaluated in a colorimetric assay. pH was evaluated by flow cytometry with the probe SNARF-1 AM. Experiments were performed at least in triplicate. Statistical analysis was performed by student's t test.

Results: MCT1 and MCT4 expression was found in all the EAC samples evaluated. MCT1 expression was confined to tumor cells, with 62% of the biopsies showing moderate or intense staining, whereas MCT4 was expressed in both tumor and stromal cells, with 40% of moderate/intense stained samples. Both MCT1 and MCT4 were expressed in OE33 cells and only in a small population of the metastatic cell line. High extracellular glucose concentration increased intracellular lactate levels in OE33 cells but not in the metastatic line, and did not have any effect either in pH. Cell apoptosis under all the conditions evaluated and hypoxia) in both cell lines. Treatment with AZD3965 (10 and 100 nM) increased intracellular lactate concentration in OE33 and OAC5M.1C cells, but this increase was higher (600–700%) in the metastatic cell line than in OE33 cells (50–70%). Under normoxic conditions AZD3965 significantly increased pH of both cell lines whereas under hypoxic atmosphere had no effect on metastatic cells. The highest concentration (100 nM) of the MCT1 inhibitor significantly

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increased apoptosis of OACM5.1C cells whereas did not affect apoptosis of OE3.1 cells.

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 are 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

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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 pneumotheorax, 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 included in the study. Perforation was defined as an endoscopic finding of an esophageal wall exposing the mediastinal cavity. Logistic regression multivariate logistic regression analysis with generalized estimating equations were used to analyze repeated measures data.

Results: A total of 549 cases with 927 lesions were evaluated. Of those, perforation occurred in 15 cases (2.7%) with 15 lesions (1.6%). A lesion diameter (Odds ratio; OR=1.05, 95% confidence intervals; CI: 1.02-1.07, p<0.001) and the proximity of the tumor to a previous ESD scar (OR=6.66, 95% CI: 1.80-24.6, p=0.004) were both associated with perforation using crude logistic regression analysis. Multivariate logistic regression analysis also showed that a lesion diameter (OR=1.05, 95% CI: 1.03-1.07, p<0.001) and the proximity of the tumor to a previous ESD scar (OR=13.0, 95% CI: 2.48-67.9, p=0.002) were independent predictive factors for perforation.

Conclusion: Larger lesion and the proximity of the tumor to a previous ESD scar increased the likelihood of perforation in patients who received esophageal ESD.

Disclosure of Interest: T. Tanigawa: Faculty member of a course sponsored by EA Pharma Co., Ltd.
T. Watanabe: Faculty member of a course sponsored by EA Pharma Co., Ltd.
Y. Fujiiwara: Faculty member of a course sponsored by EA Pharma Co., Ltd.
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All other authors have declared no conflicts of interest.

P1217 SAFETY AND EFFICACY OF CHEMORADIOThERAPY AFTER ENDOscopic RESecTION IN PATIENTS WITH SUPERFICIAL ESOPHAGEAL SQUAMOUS-CELL CARCINOMA

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Introduction: According to the current Japanese guidelines for the diagnosis and treatment of esophageal cancer, endoscopic resection is indicated for pathologi- cal T1a (epithelium/lamina propria mucosae) and relatively indicated for T1a(muscularis mucosae) and T1b(a tumor invading the submucosa to a depth more than 200μm(SM2) in the CRM 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). Lynchaptic invasion was positive in 21 patients in the CRM group and 12 in the follow-up group (p<0.01). Vascular invasion was positive in 27 patients in the CRM group and 29 in the follow-up group (p=0.32). Involvement of the submucosal vertical margin was found in 7 in the CRM group and 9 in the follow-up group (p=0.07). CRM-related grade 3 or 4 early adverse events were only found in 7 in the CRM group and 9 in the follow-up group (p=0.07).

Conclusion: Additional CRT after endoscopic resection in patients with esophagous squamous-cell carcinoma who have submucosal invasion, lymphovascular involvement, or vertical-margin invasion can become an effective organ-preservation strategy.

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

Reference

P1218 SAFETY, EFFICACY AND OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE TREATMENT OF EARLY BARRETT’S NEOPLASIA

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Introduction: Endoscopic submucosal dissection (ESD) was developed in Japan for en bloc resection of large gastrointestinal neoplasias 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 role of 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 resec- tions 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 histology corresponded to low-grade dysplasia in 4 patients, flat Barrett’s neoplasia (n = 30) 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 patients there were multifocal neoplasias. 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 of ESD was 0. In the 15 non-curative cases, 2 patients went through further ESD, 1 received chemoradiotherapy and 2 patients are under surveil- lance. 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
found in 100% (35/35) of patients with curative resection at median follow-up of 24 months (range 4–64 months).

Conclusion: In the proper setting, ESD is safe and effective for the treatment of early Barrett’s neoplasia with high en bloc and complete resection rates and good curative rate. ESD enables full pathological assessment in lesions not suitable for en bloc resection with EMR. There were no recurrences in the curettage cases, which increases the role of ESD for the management of early Barrett’s neoplasia.

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

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

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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 primary lesion 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-Equal-Volatility (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 cT1b 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 thirds with 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 60 days (range, 41–79 days) and 6 months or longer period was required to confirm CR due to the remaining PBT induced erosions 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, 14% was submucosal 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 of local recurrence was resembling submucosal tumors (SMT) in 3 and flat. Of the 43 patients, 6 patients (14%) developed local recurrence without regional recurrence from CR was 257 days (range, 111–722 days). The endoscopic finding of efficacy after PBT at the primary site.

Conclusion: Endoscopic surveillance of HNSCC is very important for SENs cases. However, as ESD is feasible and safe with acceptable complication risks despite the high rates of stenosis in resections >75% of the circumference. The circumferential extension, number of patients e stenosis rate are show in table 1.

Table 1: 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>
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<tr>
<td>25–49%</td>
<td>1 (2.56%)</td>
<td>0 (0%)</td>
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<tr>
<td>50–74%</td>
<td>14 (35.84%)</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 (63.63%)</td>
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The circumference of the resection ≥75% was significantly associated with post-operative stricture (OR = 3.5; P < 0.05). The average number of endoscopic dilatations for resolution of stenosis was 9.16 (±7.62). No procedure-related mortality occurred. Follow-up data median was 11 months.

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

References

P1221 ENDOSCOPIC CRYOBALLOON ABLATION IS SAFE, WELL-TOLERATED AND HIGHLY EFFECTIVE IN THE ERADICATION OF ESOPHAGEAL SQUAMOUS CELL NEOPLASIA

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Introduction: Globally, 80% of all esophageal cancer cases are esophageal squamous cell cancer (ESCC), arising from esophageal squamous cell neoplasia (ESCN). Patients with ESCC have poor prognosis, but when diagnosed at the stage of ESCN, curative endoscopic treatment can be performed. ESCN mainly occurs in developing countries, often with limited endoscopic expertise and resources, like Central and Eastern Asia and Eastern and Southern Africa. Hence, an easy-to-use, low-cost treatment for ESCN would be of great value. Focal Cryoballoon Ablation therapy (FCBA) (C2 Therapeutics Inc. Redwood City, CA, USA) is a new endoscopic ablation therapy that comprises a thermodenaturable cryosphere catheter with a conformable balloon that obviates the need for sizing, a handle, and a small disposable cryogen cartridge. The balloon is simultaneously inflated and cooled with nitrous oxide from the cartridge, resulting in ice patches of approximately 2cm2. FCBA is easy to use and requires no costly equipment. Early studies for FCBA of Barrett’s esophagus showed promising results, however, limited data are available for FCBA of ESCN. In this study we aimed to assess the safety, tolerability and efficacy of FCBA in the eradication of ESCN.

Aims & Methods: The aim of this study was to investigate the clinical outcomes of FCBA in the clinical endoscopic submucosal dissection cases in the esophagus, stomach, and colorectum: complication rates and long-term outcomes. Surg Endosc 27:1000–1008
enrolled. At baseline, side-by-side ablations of 10 seconds were performed on USLM treated every 3 months until eradication of ESCN was confirmed. Outcomes: safety and tolerability (11-point visual analog scale (VAS) for pain), complete response (CR) rates (absence of MIGN or worse in biopsies), neoplastic progression and adverse events.

Results: 60 patients (63 MIGN, 17 HGIN) with a median lesion of 2 (IQR 2–3) cm in length. Of these, 79% (99) were successfully treated; 3 developed superficial, self-limited mucosal lacerations upon balloon inflation and 2 of them were successfully re-ablated 3 months later. A median of 5 (IQR 4–6) treatments were performed per patient, in a median ablation time of 8 hours (IQR 5–10) minutes. As of April 2017, 77/97 (99%) patients completed a 3-month follow-up endoscopy and 69/77 patients (89%) exhibited endoscopic and histologic CR. Eight patients had residual USL and were again treated with USLM 10 months later and post-ESD pathology revealed no other 2 cases were pending. 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

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Introduction: Endoscopic submucosal dissection (ESD) allows en bloc removal of superficial esophageal squamous cell carcinoma (SCC). However, esophageal stricture often occurs after ESD when the lesion involves more than three-fourth of the circumference of the lumen. Frequent balloon-dilation 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 steroids administration, the local steroid injection, endoscopic transplantation 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 were 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 39.5 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 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 post-ESD stenosis. The following 4 factors (more than 9/10 of circumferential resection, more than 5 cm of longitudinal resection, cervical esophageal, 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 the 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: Esopehagal 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 has a potential to overcome stenosis prevention treatment-resistant factors.

Disclosure of Interest: All authors have declared no conflicts of interest.
showed the greatest disparities, was evaluated. We retrospectively evaluated long-
term follow-up study for oncological outcomes about follow-up duration, loco-
regional 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 operation. After 29 cases of 302 patients, 133 were in Group A (≥ 29 days) and 169 in Group B (> 29 days). 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 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>Group</th>
<th>Characteristics</th>
<th>F/u duration (months, mean ± SD)</th>
<th>Locoregional recurrence (n, %)</th>
<th>Distant recurrence (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>n = 133</td>
<td>37.02 ± 20.54</td>
<td>1.0</td>
<td>3 (2.3)</td>
</tr>
<tr>
<td>Group B</td>
<td>n = 169</td>
<td>44.18 ± 19.49</td>
<td>1(0.6)</td>
<td>2 (1.2)</td>
</tr>
</tbody>
</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**


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**P1225 THE POINT TO DISTINGUISH EARLY GASTRIC CANCER FROM DEPRESSION TYPE OF GASTRIC INTESTINAL METAPLASIA**

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**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 or “patchy redness” in the gastric mucosa. Even though most are intestinal metaplasia (IM), EGC is found among these lesions. A light blue crested (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) “intrathelial microinvasion (IEMI)”, and 2) “Over flow”. Over flow is 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 is a retrospective control study. There were 234 cases of EGCP performed endoscopic submucosal dissection (ESD) between November 2011 and August 2016 in Okayama Medical Center. We included 57 cases in this study. As EGCP group, we included 45 cases that were 0-Ile, 10 mm or less, pTia M, a differentiation type cancer. As IM group, we included 12 cases identified as IM by biopsy in the same period. The EGCP group is then divided into 2 groups; 1) eradication group (13 cases who had a history of eradication), and 2) a small IIEC group (32 cases) without a history of eradication. We evaluated 1) the ratio of LBC, 2) the ratio of irregular microsurface pattern 3) the ratio of irregular microvascular pattern, 4) the ratio of IEMI and 5) the ratio of Over flow.

**Results:** The ratio of LBC was 75% in IM group, which was significantly higher than eradication group (7.7%), and small EGC group (9.4%). The ratio of irregular microsurface pattern was 33% in IM group, which was significantly lower than eradication group (92%), and small EGC group (84%). The ratio of irregular microvascular pattern was 0% in IM group, which was significantly lower than eradication group (92%), and small EGC group (81%). The ratios of IEMI were 0% in IM group, 9% in eradication group and 41% in small EGC group. The ratios of Over flow were 0% in IM group, 46% in eradication group and 50% at small IIEC group. Furthermore, the ratios to have either in two endoscopic findings were 0% in IM, 77% in eradication group and 69% in small EGC group.

**Conclusion:** IEMI and Over flow leads to the diagnosis of EGC in addition to other endoscopic findings.

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

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**P1226 IRON DEFICIENCY ANEMIA—ARE THERE ANY PREDICTORS OF GASTROINTESTINAL MALIGNANCY?**

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**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 intake of iron-containing 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 at age 72.2 ± 17.4, p < 0.05), male gender (72.2% vs. 40.8%, p = 0.01), GI symptoms (61.1% vs. 11.5%, 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 levels and transferrin saturation (19.7 ± 10.1 mg/L vs. 30.4 ± 18.9 mg/L, p < 0.01 and 6.1 ± 4.14% vs 92.6 ± 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% 93.6–99.9).

**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 in establishing the urgency of endoscopic assessment, since patients with values over 11% have a very low probability to have GI malignancy.

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

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**P1227 IMPROVEMENT OF DETECTION RATE OF EARLY GASTRIC CANCER BY A TRAIN-THE-TRAINER (TTT) COURSE IN CHINA: A PROSPECTIVE CONTROLLED STUDY**

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**Introduction:** Detection of gastric cancer in its early stage is pertinent in reducing disease-specific mortality. However, detection of early gastric cancers has not been achieved in many countries where the incidence of gastric cancer is high. In order to overcome this problem, we developed an e-learning system for international endoscopists to improve endoscopic diagnosis of early gastric cancer. However, it has not been investigated whether such learning system is useful in clinical practice.

**Aims & Methods:** The objective of this trial is to investigate whether the intensive on-site TTT course is useful for increasing early detection rate of gastric cancer in Chinese high-volume endoscopy center. Five Chinese doctors (the TTT group) who were invited to the TTT course and the other five age and experience-matched Chinese doctors (the non-TTT group) in the same facility who did not attend any learning program during the same period. Lectures of the TTT course included the detection of early gastric cancer by screening endoscopy using white-light endoscopy alone and the feature of the detected subtle gastric mucosal lesion using white-light endoscopy or magnifying endoscopy with narrow-band imaging. Contents used in the lecture had been reported to be useful by an e-learning trial [1, 2]. All the instructions were given by an experienced Japanese endoscopist (K. Yao) who constructed the e-learning system [1, 2]. Endoscopists also received on-site hands-on training in order to provide them obtained enough knowledge and technique. Furthermore, we held case conferences in order to share common experiences. During the period, the number of both newly detected early gastric cancers and screening gastroscopy procedures was recorded. The primary end-point was to compare the early detection rate between the TTT and the non-TTT group. (Early detection rate = the number of newly detected early gastric cancers/the number of screening endoscopy procedures)

**Results:** The data obtained from the 275 consecutive cases of screening gastroscopy procedures by the TTT group endoscopists and from the 323 consecutive cases of screening endoscopy procedures by the non-TTT group endoscopists were analyzed. In the TTT group, four cases with early gastric cancers were detected and no early gastric cancer was detected. The early detection rates of
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 (Fisher’s 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 centers of high-volume endoscopy center. (NCT02385578).

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

References


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**P1229** **COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION AND SURGERY FOR THE TREATMENT OF EARLY GASTRIC CANCER: SINGLE-CENTER LONG-TERM OUTCOME STUDY**

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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 outcomes of ESD and surgery.

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.

Results: The mean age was higher in the ESD group (64.9 ± 9.5 vs. 58.4 ± 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 (12.9% 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% in 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 was more frequent than surgery, ESD showed 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.

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**P1229** **HEMATOLOGISTS SHOULD ORDER ENDOSCOPIC EXAMINATION PRIOR TO EXPERTS OF ENDOSCOPY IN CASE OF ENDOSCOPIC CHECK-UP OF GASTROINTESTINAL MALIGNANT LYMPHOMA**

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Introduction: Gastric malignant lymphoma (ML) is most popular lymphoma of the gastrointestinal tract. Especially it often see gastric ML lymphoma in cases of *H. pylori* (HP) infection positive, and we also sometimes find out HP negative gastric MALT lymphoma. Since gastric carcinoma (GC) is more common rather than gastric ML lymphoma, typical endoscopic diagnostic characteristics of GC are established on usual endoscopic examination for most of gastroenterologists. On the other hand, endoscopic characteristics of gastric ML lymphoma on usual endoscopy have not been established for most of gastroenterologists.

Aims & Methods: The purpose of this study is to investigate the difficulty on endoscopic diagnosis of gastric ML lymphoma in 24 gastroenterologists (12 experts and 12 trainees of endoscopy) on usual endoscopic examination. We investigated a total of 72 gastric ML lymphoma cases in our hospital and other 7 hospitals. We estimated total number of endoscopic examinations to order endoscopic examination to experts of endoscopy knowledgeable of ML in case of endoscopic check-up of gastrointestinal malignant lymphoma.

Results: The average number of endoscopic examinations up to diagnose gastric ML lymphoma was 3.4 times (from 1 to 7 times) on whole endoscopies after first appearance of lymphoma. Though average total number of endoscopic examinations of experts was only 1.2 times, on the other hand average total number of endoscopic examinations of trainees was 5.4 times. There was a significant difference between experts and trainees of endoscopy on average total number of endoscopic examinations (P = 0.022). Major reason of misdiagnosis was insufficient recognition of endoscopic appearances of ML on endoscopic trainees. Typical representative appearances of gastric ML lymphoma were erosions, ulcers and surface irregularities. Since these lesions are also appeared as typical appearances of GC and gastritis, most of non-expert of endoscopy cannot distinguish the difference of GC, ML and gastritis due to those similarities. For example, even if typical ML cases, non-expert could not diagnose repeatedly, but expert could diagnose minimal lesions of ML at first endoscopy. Especially HP positive gastric MALT lymphoma was similar to gastritis and GC on endoscopic findings, most of non-expert could not diagnose exactly.

Conclusion: We finally identified 12984 eligible patients with metastatic GC between 2004 to 2012, including 1977 patients with gastrectomy and 11007 without resection. The median survival time for patients with or without gastrectomy was assessed by Kaplan–Meier and log-rank analysis. Multivariate Cox proportional hazards regression models was performed to analyze the effect of primary tumor resection on overall and cancer-specific mortality. To further reduce potential baseline bias in patient selection between two groups, we adopted 1:1 propensity score matching to re-examine the effect of resection.

Results: We finally identified 12984 eligible patients with metastatic GC between 2004 and 2012, including 1977 patients with gastrectomy and 11007 without resection. The median survival time for patients with or without surgery were 9.9 and 10.0 months respectively. Patients who received surgery had a significantly better overall and cancer-specific survival compared with those without gastrectomy (P < 0.03). In multivariate Cox analysis, gastrectomy was associated with decreased overall mortality (HR, 0.55, 95% CI 0.52–0.58, P < 0.001) and cancer-specific mortality (HR, 0.55, 95% CI 0.52–0.58, P < 0.001). In the propensity score matched model analysis, gastrectomy was associated with increased overall (HR, 0.54, 95% CI, 0.51–0.58) and cancer-specific survival (HR, 0.54, 95% CI, 0.50–0.55).

Conclusion: Based on population-based studies, we demonstrated that there was a survival advantage of gastrectomy in patients with stage IV gastric cancer. Further prospective studies are needed to verify our findings.

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

References


P1231 DEVELOPMENT OF AND EXPERIENCE WITH AN INSULATED SCISSORS-TYPE KNIFE (SB KNIFE)

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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: SBjr 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 isolating material in order to enhance the cutting power and prevent electric effects in the surrounding tissue. The shearing structure make sharp cutting quality and very small round tips prevent to grasp the muscular layer. SBjr was used in circumferential incision, submucosal dissection and hemostasis. After infected hyaluronic acid in submucosal layer, grasped the tissue, conﬁrming safety, make incision. SBjr was used not only in incision but also in hemostasis. At sites containing blood vessels or bleeding, they were grasped and induced coagulation using SBjr. 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 partly relatively effective at sites difﬁcult to shape the endoscope 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 SBjr which is used cutting and coagulation.

Conclusion: This short insulated scissors-type knife (SBjr) 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.

P1232 GASTROINTESTINAL LYMPHOMAS

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Introduction: The gastrointestinal tract (GIT) is the most common extranodal site affected in lymphomatous disease. Infection with Helicobacter pylori, human immunodeﬁciency virus and Epstein Bar and immunosuppression have been studied as possible risk factors. The diagnosis is often late, presenting at an advanced stage, with limited therapeutic options.

Aims & Methods: The objective of this study was to characterize the anatomical distribution, clinical manifestations, risk factors and prognosis of GI lymphomas. Retrospective study of patients diagnosed with GI lymphomas between 1997 and 2016.

Results: During the 20 years, 127 GI lymphomas were identiﬁed. The mean age at diagnosis was 65.7 years, 53% of males. The majority (92.9%) had symptoms at the time of diagnosis, with fatigue (54.3%) being the most common. The most commonly aﬀected organ was the stomach (65.3%) and the most common subtypes were diffuse large B-cell (48.8%) and MALT (27.6%). Most tumors were at an advanced stage, with limited therapeutic options.

Conclusion: The stomach is the main organ aﬀected by lymphomatous disease (p = 0.0078). The mean procedure time was 40.89 ± 10.79 min in EUS-FNA and 55.15 ± 27.42 min in MIAB(p = 0.0234). Helicobacter pylori were present in 27.4% in MIAB(p = 0.005). The mean procedure time in MIAB was 9.26 ± 4.57 min in EUS-FNA and 27.42 min in MIAB(p = 0.005). The mean procedure time in MIAB was 9.26 ± 4.57 min in EUS-FNA and 27.42 min in MIAB(p = 0.005). BMI and its effect has dose-dependent pattern.

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

P1233 THE EFFECT OF OBESITY ON EARLY GASTRIC CANCER IN PATIENTS UNDERGOING ENDOSCOPIC TREATMENT

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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 obesity (BMI ≥25) by Asian-Paciﬁc guideline. Adjusted 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, 1.88 (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 comparing to underweight (BMI < 18.5).

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.

P1234 COMPARATIVE STUDY OF THE ENDOSCOPIC ULTRASONOGRAPHY-GUIDED FINE-NEEDLE ASPIRATION VS MUCOSAL-INCISION ASSISTED BIOPSY FOR THE HISTOLOGICAL DIAGNOSIS OF GASTROINTESTINAL SUBEPITHELIAL TUMORS

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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 and feasibility and safety of these techniques 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, we compared the morphological ﬁndings of the SET by EUS were as follows. The mean diameter of tumor was 29.16 ± 15.6/17.77 ± 7.16 mm (p = 0.0034). The ratio of intraluminal growth was 55.6% / 94.7% (p = 0.0078). The mean procedure time was 40.89 ± 10.79 min in EUS-FNA and 55.15 ± 27.42 min in MIAB (p = 0.0234). Helicobacter pylori were present in 27.42% in MIAB (p = 0.005).

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 the higher diagnostic yield in MIAB than in EUS-FNA was borderline signiﬁcant.

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

P1235 CLINICAL TRENDS AND BURDEN OF DEATH IN GASTRIC CANCER: A SIX-YEARS SURVEY

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Introduction: In 2012 the reported incidence of gastric cancer in both sexes was 153.3/100,000 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 asymptomatic. Here we present molecular analysis of non-invasive diagnostic methods like serology, magnifying endoscopy with narrow-band imaging. We also introduce the Chinese TCGA study.

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 chose 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 to OLGa classification. In 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 78ys, range 36-105ys). The diagnosis of early gastric cancer was made in 44/584 (7.53%) (M = 24, F = 20 mean age 75.68ys, range 47-92ys). A diagnosis of advanced gastric cancer was established in 540 pts (M = 318, F = 222, mean age 78.20ys, range 36-105ys). The picture of chronic atrophic gastritis was found in more than 95% of the cases, both in early and advanced cases. 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 considered as an 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.

References


Competing Interests: None declared.

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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 orthotopic nude mouse model. Pathway analysis was performed using RNAseq and Phosphokinase Antibody Array. The interaction of CAB39L with its protein partners was determined by co-immunoprecipitation.

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), which suggested that CAB39L might function as a tumour suppressor. The functional importance of CAB39L was then experimentally examined. Ectopic expression of CAB39L in three GC cell lines (AGS, BGC823, MKN45) suppressed 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. Mechanistically, 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, the ERRB2 Antibody Array identified AMPK as 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/ERBB4 signaling. Moreover, co-immunoprecipitation experiment identified interaction between CAB39L and LKB1, a bona fide tumour suppressor that functions to activate AMPK to suppress tumorigenesis. Western blot confirmed activation of LKB1-AMPK/β cascade in GC cells expressing CAB39L, while the 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. Consistent with novel tumour suppressor gene silenced by promoter methylation in GC, CAB39L inhibits gastric tumorigenesis via LKB1-mediated activation of AMPK/β. CAB39L methylation may serve as an independent prognostic biomarker for GC patients.

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PKNOX2 was silenced in 15 out of 18 GC cell lines through promoter reporter assay. PKNOX2 expression was positively correlated with IGFBP5 expression in gastric cancer tissues and the corresponding adjacent non-tumor tissues, as well as its correlation with clinical pathological parameters. In addition, we also verified the results by utilizing bioinformatics analysis. We studied the effects of Hoxc10 on gastric cancer cell cycle control and proliferation through combination of in vitro cell function tests and in vivo nude mouse model. Then, we screened Hoxc10 potential downstream targets by using cDNA microarray and verified the results by RT-qPCR. We studied the effects of Hoxc10 on cell proliferation and its downstream cell cycle-related proteins and validated the correlation of Hoxc10 and p21 expression in vitro and in vivo. By application of dual-luciferase reporter assay and chromatin immunoprecipitation, we explored the role of Hoxc10 in p21 transcription repression.

Results: Hoxc10 mRNA expression were significantly higher in fresh frozen gastric cancer tissues than in matching adjacent non-tumor tissues (91.43%, 64/70, P<0.01). The expression of Hoxc10 was related to the depth of tumor invasion, lymph node metastasis and tumor stage (P<0.01). Using tissue microarray, Hoxc10 protein expression was also found widespread in gastric cancer tissues (91.3%, 137/150, P<0.01) and was closely correlated with patient survival (HR=2.8; 95% CI 2.0–7.2). Besides, in TCGA database of gastric cancer, Hoxc10 was upregulated by 122 times (n=33, P<0.01), and in Kaplan-Meier Plotter database, Hoxc10 expression was associated with poor prognosis of patients with gastric cancer (HR=1.8; 95% CI 1.5–2.16). Hoxc10 overexpressing gastric cancer cells accelerated G1-S phase transformation and proliferation, whereas Hoxc10 knockdown induced cell cycle arrest in G1 phase and repressed cell proliferation. Moreover, over-expression of Hoxc10 accelerated gastric tumor growth in a mouse xenograft model, while knocking-down of Hoxc10 inhibited gastric tumor growth. cDNA microarray showed that Hoxc10 regulates multiple downstream genes including p21, a potent cell cycle regulator. A significantly negative correlation between Hoxc10 and p21 were detected in gastric cancer cells and tissues. Knocking-down of Hoxc10 also altered the expression of some p21 downstream cell cycle related proteins, such as pRB, CDK2 and CDK4. Furthermore, we found that Hoxc10 binds to the p21 promoter directly and could inhibit p21 transcription.

Conclusion: Taken together, our results suggest that Hoxc10 functions as a tumor promoting gene in gastric cancer and may be an important regulator of cell cycle control and cancer cell proliferation. Moreover, Hoxc10 may serve as a useful biomarker for predicting patient prognosis.

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

References

P1241 RECOVERY OF GASTRIC FUNCTION IN CHRONIC ATROPHIC GASTRITIS: A 3 YEARS STUDY
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Introduction: The relationship between Helicobacter pylori (H.p.) eradication and atrophic changes is debated. Although some studies report a partial restoration of GC serum pepsinogen levels after eradication, it is not clear whether this finding reflects gastric mucosal healing. -Cysteine, reducing acetatedehyde 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 system) and PGI serum levels < 25 nmol/L, were randomly selected for a gastroenterological endoscopy with gastric biopsy samplings and PGI and G17 measurement by means of Gastropanel®. 22 out of 62 patients had autoimmune gastritis while 40 of them reported previous H.p. infection. All patients, Helicobacter pylori (H.p.) negative at baseline, were treated with L-Cysteine (100 mg three times daily), up to now 24 out of 26 reached 36 months-treatment. Serum PGI and G17 were measured at baseline and after 3, 6, 12, 24, 36 months after starting therapy.

Results: The PGI 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 G17 serum level resulted gradually decreased over the 36 months therapy, as it follows: G17 mean value was 51.33 pmol/l 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 < 0.0001).

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 G17 serum levels over a 36 months follow-up period.

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

Reference

P1244 WHAT IS THE YIELD OF ROUTINE D2 BIOPSIES IN THOSE PRESENTING WITH WEIGHT LOSS AT GASTROSCOPY?
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Introduction: Coeliac disease is a common cause of malabsorption in Western countries. The gold standard method of diagnosing coeliac disease is by way of duodenal biopsy. Weight loss is a symptom of malabsorption. Patients referred for upper gastrointestinal endoscopy with symptoms of weight loss commonly undergo duodenal biopsy to assess for presence of coeliac disease. We hypothesise that those patients with weight loss and who routinely have duodenal biopsies very rarely have coeliac disease unless there are other pointers towards malabsorption.

Aims & Methods: A single-centre, retrospective analysis of consecutive patients undergoing upper gastrointestinal endoscopy for the investigation of weight loss was undertaken within a large associate teaching hospital within North London from 2005–2016. Of these patients, we reviewed those that had duodenal (D2) biopsies and the results. If they proved abnormal, we looked back for additional markers of malabsorption, clinically and biochemically.

Results: 142 consecutive patients, 65 were Male, 77 were female, underwent OGD for weight loss. Out of this cohort, 62% (n = 88) had a duodenal biopsy. 89% (n = 78) of these had a normal biopsy. 11% (n = 10) had an abnormal biopsy.

Conclusion: Our results demonstrate that AR directly regulates CCRK expression in GC. AR and CCRK gene may act as a potential oncogene in gastrocarcinogenesis 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.

Reference
and 6 of these patients had coelac, whilst 4 had other pathology such as granuloma 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 A. fungorum reduces the 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 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.

Reference 
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 enrolled 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 prior to endoscopy. Endoscopically, gastric and salivary HP biopsies were obtained 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 rDNA sequencing by using the MiSeq Platform (Illumina). OTU clustering was performed and taxonomy assigned to the Greengene and HOMD database. Alpha and beta diversity were calculated. 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 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 salivary 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 Spirochaetaeae, and a decrease in Flavobacteriaceae families. HP eradication therapy resulted in a significant reduction in the relative abundance of family Spirochaetaceae and Flavobacteriaceae.

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
P1251 THE INVESTIGATION OF MIR-155, MIR-21, MIR-146A AND MIR-223 EXPRESSIONS IN HELICOBACTER PYLORI POSITIVE AND NEGATIVE INDIVIDUALS

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Introduction: This study was conducted to determine the differential expression patterns of microRNAs, non-coding RNAs that control gene expression mainly through translational repression, in gastric mucosa of Helicobacter pylori (H. pylori) positive patients. Several miRNA have been associated with promoting the inflammatory response initiated by the H. pylori infection, increasing the malignant progression of the gastric epithelium, and enhancing the invasiveness and migratory capacity of cancer cells. Using serum specimens, expression patterns of hsa-miR-155, hsa-miR-21, hsa-miR-146A and hsa-miR-223 were determined by Real-Time Polymerase Chain Reaction (Real-Time PCR).

Aims & Methods: Patients who underwent upper gastrointestinal endoscopy, in Mersin University Faculty of Medicine, Department of Gastroenterology and diagnosed H. pylori positive and negative were recruited. H. pylori status was assessed by the rapid urease test. Serum specimens of patients, were taken for the determination of hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-miR-223 expressions in serum specimens and nuclear factor-κB (NF-κB) and interleukin-4 (IL-4) 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

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Introduction: The aim was to define features of change of level of interleukin-4, interleukin-8 and interleukin-1β in serum specimens of patients infected with H. pylori strains with cagA gene. The expression of cagA gene coding synthesis of the cytotoxin (CagA) of the same name capable, in addition, to exert impact on development of cancer, in particular interleukin-8 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-4, interleukin-8 and interleukin-1β in serum specimens of patients infected with H. pylori strains with cagA gene. The expression of cagA gene coding synthesis of the cytotoxin (CagA) of the same name capable, in addition, to exert impact on development of cancer, in particular interleukin-8 is considered a marker of presence of pathogenicity island of H. pylori.

Conclusion: The incidence and eradication rate of gastric cancer are high in Japan. The International Agency for Research of Cancer (IARC) reported that 80% of gastric cancer is caused by Helicobacter pylori (H. pylori) infection and that the incidence of gastric cancer can be reduced by 30%-40% through H. pylori eradication therapy. The eradication rate of vonoprazan for chronic H. pylori infection was approved for national health insurance in February 2013 in Japan. However, the success rate of H. pylori eradication by conventional primary triple therapy has decreased by resistance to clarithromycin. Vonoprazan, which is a potassium ion-competitive acid blocker (P-CAB), became available in Japan in February 2015, before its release on the world market. There have been some reports on the usefulness of vonoprazan for H. pylori eradication.

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

References
eradication therapy of H. pylori increased remarkably from 48.4% in 2012 to 73.1% in 2014.

Results:

Shinya Y et al. Usefulness of vonoprazan, a potassium ion-competitive acid blocker, for primary eradication of Helicobacter pylori. World J Gastrointest Pharmacother 2014; 28: 1107–1114

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Introduction: Clarithromycin (CLA)-containing quadruple therapy, i.e. concomitant therapy (CT), and bismuth-containing quadruple therapy (BQT) have been suggested as regimens for eradication of H. pylori infection. Both treatments are reported to have an eradication rate higher than 90%. International guidelines recommend that choosing one regimen vs the other should be based on the regional prevalence of antimicrobial resistance, knowledge of patient’s previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. However, this therapeutic approach has never been tested systematically.

Aims & Methods: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

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Conclusion: Vonoprazan is considered to be useful for H. pylori eradication instead of a PPI in first line treatment.

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

References

P1254 ERADICATION OF H. PYLORI INFECTION IN PATIENTS NAÏVE TO TREATMENT USING CONCOMITANT THERAPY OR BISMUTH QUADRUPLE THERAPY (THREE-IN-ONE PILL): A REAL-LIFE OBSERVATIONAL STUDY

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Introduction: Clarithromycin (CLA)-containing quadruple therapy, i.e. concomitant therapy (CT), and bismuth-containing quadruple therapy (BQT) have been suggested as regimens for eradication of H. pylori infection. Both treatments are reported to have an eradication rate higher than 90%. International guidelines recommend that choosing one regimen vs the other should be based on the regional prevalence of antimicrobial resistance, knowledge of patient’s previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. However, this therapeutic approach has never been tested systematically.

Aims & Methods: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Results: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Conclusion: Vonoprazan is considered to be useful for H. pylori eradication instead of a PPI in first line treatment.

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

References

P1255 CYP3A5 GENOTYPE STATUS AFFECTS OUTCOME OF FIRST-LINE VONOPRAZAN-CONTAINED HELICOBACTER PYLORI ERADICATION THERAPY

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Introduction: Potent acid inhibition with acid inhibitory drugs is crucial to the eradication regimen for Helicobacter pylori infection. However, CYP3A5 variant is known to possess a genetic polymorphism (CYP3A5*1 vs. CYP3A5*3) with the potential to influence H. pylori eradication in 2nd line treatment. On the other hand, eradication rates have been decreasing because of resistance to the clarithromycin (CAM). It is known that most antibiotics are not effective under strong acid secretion. So in order to improve the eradication rate, gastric acid must be reduced more rapidly and strongly. Vonoprazan(VPZ) is a new potassium competitive acid blocker and the usefulness is expected in Japan.

Aims & Methods: We investigated the influence of CYP3A5*3 in Japan and wished genotypes and susceptibility to 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 second-line (n=29).

Results: Results: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. However, this therapeutic approach has never been tested systematically.

Aims & Methods: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Results: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Conclusion: Vonoprazan is considered to be useful for H. pylori eradication instead of a PPI in first line treatment.

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

References

P1256 COMPARISON OF HELICOBACTER PYLORI ERADICATION RATES: VONOPRAZAN VS. PROTON PUMP INHIBITOR

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Aims & Methods: Our aim was to investigate the efficacy of the VPZ-based eradication therapy of H. pylori in Japan. The number of first-line regimen of VPZ patients was 109, and the eradication was achieved in 97 patients (87%). RPZ patients were 308, and the eradication was achieved in 228 patients (74%). In the second-line regimen, the eradication was achieved in 377 patients (68%), and the eradication was achieved in 228 patients (68%). In the second-line regimen, the eradication was achieved in 97 patients (87%). RPZ patients were 308, and the eradication was achieved in 228 patients (74%). In the second-line regimen, the eradication was achieved in 377 patients (68%), and the eradication was achieved in 228 patients (68%).

Results: Results: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. However, this therapeutic approach has never been tested systematically.

Aims & Methods: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Results: The primary endpoint of this study was to evaluate the eradication rate in H. pylori-infected subjects naïve to treatment in an area of high (10%-15%) CLA resistance based on knowledge of patients’ previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TiOP).

Conclusion: Vonoprazan is considered to be useful for H. pylori eradication instead of a PPI in first line treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.
such as erosion and diarrhea were reported in 6.6% (9/136) of patients in VPZ, in 7.8% (8/102) in VPZ and in 6.1% (28/456) in LPZ.

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.

Aim: To describe and analyze the prevalence of eradication of H. pylori in patients infected with Helicobacter pylori and treated with a probiotic-based quadruple therapy regimen.

Methods: The study included a cohort of 410 patients infected with H. pylori who were treated with probiotics. The study included patients who had previously been diagnosed with H. pylori infection using breath test or biopsy. The inclusion criteria were: patients who had previously been treated for H. pylori infection and failed eradication therapy. The patients were randomized to receive either probiotics alone or the quadruple therapy regimen. The end-point was to assess the proportion of patients who achieved successful eradication of H. pylori. The results were analyzed using chi-square test and Fisher’s exact test. The safety of the regimen was assessed by monitoring for adverse events.

Results: Of the 410 patients included in the study, 205 were randomized to receive probiotics alone and 205 were randomized to receive the quadruple therapy regimen. The eradication rate of H. pylori was significantly higher in the quadruple therapy regimen (93.4%) compared to probiotics alone (86.8%, P = 0.02). The most common adverse events reported in both groups were gastrointestinal symptoms, such as diarrhea and abdominal pain.

Conclusion: Probiotics alone may have a beneficial effect on the eradication of H. pylori, suggesting a presumable direct effect. However, they cannot be indicated as a therapeutic regimen for the low eradication rate. Further studies are needed to confirm these findings.

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

References

Aims & Methods: Methods of analysis and inclusion criteria were based on the 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 reported as 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.

Results: Two 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%). Multistrain combinations were effective in 14 out of 105 patients, with a pooled eradication rate of 14% (95% CI 16–45%). 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% 3.88–11.34, p < 0.0001).

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.
Aims and 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 our clinics. Patients with a history of eradication therapy, gastrectomy, or allergy to medications in triple therapy were excluded. Written informed consent was obtained from the patients. 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 Charithromycin 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

P1260 COMPARISON OF CLARITHROMYCIN- AND LEVOFLOXACIN- containing TRIPLE THERAPIES FOR FIRST- LINE HELICOBACTER PYLORI ERADICATION IN IRAN

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Evidence interval (CI): 65.7%–85.7%) and 58.5% (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 Charithromycin 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
Introduction: Chemotherapy-induced mucositis is a common complication during anticancer treatment. Epigallocatechin-3-gallate (EGCG), derived from green tea, has been shown to have antioxidant effects and immunomodulatory activities. 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-Flurouracil (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 and intestinal tissue was obtained. 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 K/µL, Control, 5.317 K/µL), indicating significantly decreased 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 analysis of villus height (EGCG group, 352 µm; 5-FU group, 352 µm; 5-FU plus 5-FU group, 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 compared with 5-FU group (P < 0.05; Figure 2). Figure 1. Effects of EGCG administration on chemotherapy-induced mucositis in mice jejunum (A) Control (B) 5-Flourouricil (5-FU) group with significant villus atrophy and crypt dilatation (c) EGCG group (d) EGCG plus 5-FU group with mild villi destruction and less crypt dilatation. Figure 2. mRNA expression of IL-6 after administration of 5-FU in EGCG plus 5-FU group showed significantly lower 2’dAct/5-FU only group. (** P < 0.05)

Conclusion: EGCG derived from green tea reduced 5-FU induced intestinal mucositis, suggesting a possibility for novel treatment of chemotherapy-induced mucositis.

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

P1264 INCREASED SUSCEPTIBILITY TO ENTEROPATHOGENIC BACTERIA BY PROTON PUMP INHIBITORS IN THE MURINE MODEL OF FOOD POISONING

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Introduction: Proton pump inhibitors (PPIs) have become one of the most commonly prescribed medicine for 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 incidence of infectious intestinal diseases. Those are mostly reported by clinical observations, and the exact mechanism has not been clarified. To investigate whether PPIs can increase the susceptibility to peroral enteropathogenic bacterial infection, we focused on C. rodentium (C. rodentium), a well-known and astonishingly 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 administrated intraperitoneally for two weeks. The intact contents and feces were collected before and after LAZ administration. Genomic DNA of the gut microbiota was analyzed by 16S ribosomal RNA (16sRNA) 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 using a comprehensive analyzing tool, RTACT: a retrospective analysis in 175 patients. Bone Marrow Transplant 2012; 47: 430–438.

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 mucous production, cell infiltration, and immune response of the intestinal tract were decreased. In addition, we confirmed the protein expressions among the small intestines using anti-LAT antibodies.

Conclusion: 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 defensive 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 associated 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.

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

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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 anticancer agents are frequently used clinically, the number of patients suffering from anticancer 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 a gastrointestinal transporter that is important for nutrient absorption. Furthermore, the involvement of other amino acid transporters in malignancies has been reported by previous studies.

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 administered 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 compared 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 defensive 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 associated 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.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P1266 A MUCOUS DEPENDENT MECHANISM OF ACETYL SALICYLIC ACID-INDUCED SMALL INTESTINAL MUCOSAL INJURY IN RATS**

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**Introduction:** Acetyl salicylic 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 injuries 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 the 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 to the proximal duodenum of rats. P80, an emulsifier, which has been reported to reduce mucous thickness [2], was administered via drinking water for 2 weeks before ASA treatment. Indeed, P80 also reduced the thickness of mucous layer in our analyses. One hour after ASA treatment, blue dye 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 assessment. To further investigate the importance of mucus, rebamipide (Reb, 300 mg/kg) or saline were orally administered for one week prior to P80 treatment. Reb is a gastric mucosal-protective drug widely used for the treatment of gastric ulcer, and increases mucus secretion by small intestinal goblet cell.

**Results:** Evans blue method suggested that high-dose ASA (200 mg/kg) induced small intestinal mucosal injury, 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 reduced Evans blue exudate and severe mucosal lesions in jejunum at these concentrations, suggesting the pivotal role of mucus in these phenomena. Moreover, Reb significantly suppressed reducing small intestinal mucus and the exacerbation of ASA-induced mucosal lesions by P80, indicating that mucus is inevitable in the protection of ASA-induced small intestinal mucosal injury.

**Conclusion:** Long-term increasing therapy might be a useful solution for the prevention of ASA-induced small intestinal mucosal injury.

**Disclosure of Interest:** Y. Naito: Contribution and lecture fee from Otsuka Pharmaceutical Co., Inc.
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**References:**

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**P1268 PREBIOTIC EFFECTS ON HEALTHY AND CHEMOTHERAPY-INDUCED SMALL BOWEL INJURY IN RATS**

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**Introduction:** Intestinal mucosal injury following a course of 5-FU chemotherapy 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. Crypt depth, villus height and histological severity scores were quantified in haematoxylin & eosin stained sections. Sucrase and maltoperoxidase (MPO) activity were quantified by biochemical assay. White and red blood cell types were quantified by whole blood analysis. Fecal volatile fatty acids (VFAs), acetic, propionic, isobutyric, butyric, isovaleric and valeric acid 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. Treatment of GOS, MOS or FOS, 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 (284.16 ± 11.95 μm) compared to respective water controls (240.40 ± 8.83 μm; p < 0.05). A small 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 some parameters of intestinal health and immune regulation in healthy rats; however, these prebiotics were not protective against 5-FU induced intestinal damage. Furthermore, our findings have demonstrated that prebiotic treatment significantly increases VFA production, suggesting functional changes to the intestinal microbiome. Further studies are needed to investigate prebiotics, both alone and in combination, during the repair phase of intestinal mucositis, and to determine their effect on gut microbial composition.

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

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**P1267 ANTIBIOTIC-INDUCED DYSBIOSIS IN THE MOUSE SMALL INTESTINE PROMOTES ALLERGIC SENSITISATION**

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**Introduction:** Food allergy is characterised by a T helper type-2 immune response against a food antigen, manifesting as symptoms including nausea, diarrhoea, vomiting or anaphylactic events. It is estimated that 10% of the Australian population have a food allergy, and common allergens include cow’s milk, shellfish and peanuts. Epidemiological studies have identified antibiotics as a significant risk factor for food allergy in infants.

**Aims & Methods:** We examined how the broad spectrum antibiotic amoxicillin influenced mucosal immune responses to peanut proteins and the development of peanut allergy in mice. Balb/C mice were treated daily with 5 mg/kg amoxicillin or PBS for 5 days (days 0–4). On days 5 and 6 animals received 0.2 mg peanut extract or PBS vehicle by oral gavage. Animals were rechallenged with peanut on day 13 and sacrificed on day 16 and immune responses to peanut challenge in blood and intestinal tissues were assessed by protein, mRNA and histological analysis.

**Results:** The proportion of circulating eosinophils was increased in the blood of mice treated with both antibiotics and peanut. Histological examination revealed an increase in small intestinal eosinophils, predominantly at the villous tips, indicating recruitment to the mucosa. RNA and protein analysis revealed an increase in IL-5 associated with increased Nod-Like Receptor Protein 3 (NLRP3) inflammasome activation.

**Conclusion:** These studies demonstrate that antibiotic treatment prior to food antigen challenge can lead to altered mucosal immune homeostasis, facilitating IL-5-mediated eosinophil recruitment, characteristic of allergic responses. Importantly, we have demonstrated an adjuvant-free model of food sensitisation and small intestinal eosinophilia. These findings contribute to a better understanding of how disruption of mucosal homeostasis by antibiotics contributes to the development of allergic sensitisation and reaction.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1269 THE RELATION OF CHEMOKINE RECEPTOR CXCR3 AND GUT-HOMING MARKERS ON SMALL INTESTINAL LAMINA PROPRIA T-LYMPHOCYTES IN CROHN’S DISEASE PATIENTS
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Introduction: Crohn’s disease has been thought to be caused by abnormal immune responses affecting many parts of digestive tract in which Th1 cells and their cytokines are involved. The recruitment and activation of Th1 cells is regulated by interactions 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 a4b7 (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 (gut-homing (CD) patients and healthy controls). Total of 56 duodenal biopsies were obtained from CD (n = 25), 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 gravi-fugation centrifugation with Ficoll. 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 (p < 0.05) 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 not 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 diseases, with 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

P1270 METHODOLOGICAL QUALITY OF CLINICAL PRACTICE GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN: AN AGREE II APPRAISAL OF GUIDELINES FOR RESEARCH & EVALUATION II INSTRUMENT (AGREEII)
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Introduction: Acute Gastroenteritis (AGE) is one of the diseases that most frequently affects paediatric population. Successful treatment in AGE has been shown on the basis of rehydration therapy with different modifications.

Aims & Methods: Our study aimed to assess the methodological quality of clinical practice guidelines (CPG) that recommend their use in the acute gastroenteritis. All the CPGs were obtained from CD (n = 25), 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 gravi-fugation centrifugation with Ficoll. 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 (p < 0.05) 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 not 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 diseases, with 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 COMBINATION OF TWO IN VITRO MODELS TO STUDY THE IMPACT OF CHRONIC CO-EXPOSURE OF A PESTICIDE WITH A PREBIOTIC ON THE INTESTINAL ENVIRONMENT
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Introduction: The excessive use of pesticides, often found as residues in our diet and as contaminants in drinking water, has become a public health problem. Most of these substances are considered as endocrine disruptors and their daily ingestion is likely to have 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 prebiotic (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 intestinal 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 withCPF 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 B, p = 0.005) exposed for the benefit of CPF §. Inulin also beneficially influences 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 of the SHIME® (D15 ± inulin at D15 and D30) in order to measure the impact on the epithelial barrier.

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

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Joly C, Gay-Quéhellard J, Léké A, Chardon K, Delanaud S, Bach V, Khorsi-Cauet H. Impact of chronic exposure to low doses of chlorpyrifos on the intesti nal microbial profile and metabolism, suggesting that prebiotic supplementation could reduce some intestinal damages caused by an exposure to CPF.

P1272 THE DIET FEATURES OF DIARRHEA-PREDOMINANT IRRITABLE BOWEL SYNDROME PATIENTS WITH SMALL INTESTINAL BOWEL OVERGROWTH

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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 flatus, bloating and 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 the human 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 SIBO patients, and no controlled researches. So we analyzed the diet on intestinal microbiota profiles in IBS-D or SIBO patients. High fat diet may change the intestinal microbiota profiles and SCFAs was reported in the past with the fat proportion of diet (r = 0.169, P = 0.022).

Results: 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) with small intestinal bacterial overgrowth (SIBO), and comparing with healthy 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. All subjects underwent colonoscopy to excluded 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-P) 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 defined as the daily total calories supplying from fat is more than 50%.

Conclusions: We found that high fat diet is significantly higher in IBS-P than IBS-N [47.19 ± 2.62% vs. (40.74 ± 1.66%), P < 0.001. The proportion of 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: The proportion of high fat diet had higher morbidity of SIBO, and the proportion of diet fat was positively correlated with breath methane baseline of LMHBT. SIBO can worsen nutritional status for IBS-P patients. High-fat diet might be one of the risk factors for IBS-P with SIBO.

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

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Use of molecular typing to investigate bacterial translocation from the intestinal tract of chlorpyrifos-exposed rats. Gut Pathog. 2016;8:50
Joly C, Gay-Quéhellard J, Léké A, Chardon K, Delanaud S, Bach V, Khorsi-Cauet H. Impact of chronic exposure to low doses of chlorpyrifos on the intesti nal microbial profile and metabolism, suggesting that prebiotic supplementation could reduce some intestinal damages caused by an exposure to CPF.

P1273 SYSTEMATIC REVIEW AND META-ANALYSIS: PREVALENCE OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN CHRONIC LIVER DISEASE

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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 test (LBT), two xylose breath test(1) and one each xylose breath test (2) and hydrogen/methane breath test. Five studies utilised culture methods and one quantitative PCR. Across all testing methods, the prevalence of SIBO in patients with CLD was 38.9% (95% CI 36.9–40.9) versus 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 36.6–43.8) compared to 7.3% (95% CI 4.9–10.8) in controls. While there was no difference in CLD patients and controls, the method of detection was limited to breath tests. The prevalence of SIBO in CLD was 35.8% (95% CI 32.6–39.1) compared to 8.0% (95 CI 5.7–11.0) in controls. In contrast, based upon culture techniques, the prevalence of SIBO in CLD was 68.3% (95% CI 59.6–76.0) vs 7.94% (95 CI 3.4–12.7) in 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 large improvements over the overall prevalence. 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 Breathreactor microlyzer (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 yrs (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 diarrhea 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
P1278 EVERYDAY LIFE RESTRICTIONS CAUSED BY LONG-TERM TREATED CELIAC DISEASE: PREDIICATION AND ASSOCIATED FACTORS

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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 y) with a childhood diagnosis of celiac disease fulfilled a questionnaire evaluating their adherence to lifestyle and health lifestyle, possible co-morbidities, adherence and attitudes towards GFD and long-term follow-up of celiac disease. In addition, they underwent anthropometrics and serological investigations, ultrasonography (US) surveys for gastrointestinal symptoms and quality of life. Patient records were used to confirm clinical and histological presentation at diagnosis and other relevant medical data.

Results: Altogether 108 (47%) out of the 232 respondents felt that celiac disease restricts their daily life. This was experienced especially when eating in a restaurant (38% of those affected) and visiting a friend (30%). Patients reporting restrictions had more often anemia (38% vs 22%, p = 0.013) and time from the diagnosis (18.6 vs 17.9 y, 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 measured 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, disability score (disability = (32% vs 82%, p = 0.770) they 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.

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P1279 SYSTEMATIC REVIEW OF THE ECONOMIC BURDEN OF CELIAC DISEASE

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Introduction: The prevalence of diagnosed coeliac disease (CD) has rapidly expanded in both developed countries and developing regions. 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. We also searched for conference abstracts. We assessed methodological quality of individual studies.

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 diagnosis 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. Strategies using either endoscopy/biopsy or serology alone were not considered cost-effective. Direct annual excess costs to a US payer per diagnosed CD patient were estimated between $23.20 (US 2007) and $303.52 (US 2013) to be more than for 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 absenteeism 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 and 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. Leffler: Daniel Leffler is employed by Takeda Pharmaceuticals International Co, Cambridge, USA

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All other authors have declared no conflicts of interest.

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

References
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the severe grade of HS was more frequently observed in GG than in CC carriers (74% vs 11.3%, p < 0.001, OR 21.8). At multivariate analysis, high BMI at diagnosis (OR 10.8; p < 0.001) and PPI exposure (OR 22.9; p < 0.001) were the only factors associated with the occurrence of HS.

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

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

References

P1224 CELIAC DISEASE AND ADHERENCE TO THE GLUTEN-FREE DIET: A 30-YEAR FOLLOW-UP STUDY
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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 guidelines3,4. The aim of our study was to audit our practice, with a focus on requests for DEXA scans.

Methods: This was a single-centre, retrospective study of CD patients under the care of 3 consultants. We accessed the electronic records to identify if haematological and biochemical profiles were being monitored annually. We also identified when patients had their first DEXA scans and whether or not they were indicated1,2.

Results: Data were collected on 160 patients (Female = 107[67%]). Annual checks of BFC occurred in 94% of patients, vitamin B12 in 74%, folate in 75% and ferritin in 88%. C-reactive protein and ferritin showed a trend towards higher values in patients on gluten-free diet (GFD). 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, 23% (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 haematinsics. Clinicians tend to order a DEXA scan 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 limited resources. 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

P1221 PROTON PUMP INHIBITORS AS RISK FACTOR FOR METABOLIC SYNDROME AND HEPATIC STENOTIS IN PATIENTS WITH CELIAC DISEASE ON GLUTEN-FREE DIET
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Introduction: Recent research has shown that patients with celiac disease (CD) are at-risk of developing metabolic syndrome (MS) and hepatic steatosis (HS) after commencing gluten-free diet. Aims & Methods: We aimed to evaluate the predictive factors for MS and HS in CD after one year of GFD. All consecutive newly diagnosed CD patients were enrolled prospectively. We collected data about lifestyle, waist circumference, blood pressure, cholesterol, triglycerides, glucose and insulin blood levels; insulin resistance (through the homeostatic model assessment HOMA-IR); treatment with proton pump inhibitors (PPI). Diagnosis of MS was made in accordance with current guidelines and HS was diagnosed by ultrasonography. The prevalence of MS and HS was re-assessed after 1 year of GFD. A logistic regression analysis was performed to identify risk factors for MS and HS occurrence after 1 year of GFD.

Results: Of 301 patients with newly diagnosed CD, 13 (4.3%) met criteria for diagnosis of MS and 25.9% presented HS at the time of CD diagnosis. 99 subjects (32.8%) had long-term exposure to PPI during the study period. After 1 year, 72 (23.9%) patients had developed MS (4.3% vs 23.9%; p < 0.001, OR 6.9) and 112 (37.2%) had developed HS (25.9% vs 37.2%; p < 0.01, OR 1.69). At multivariate analysis, high BMI at diagnosis (OR 10.8; p < 0.001) and PPI exposure (OR 22.9; p < 0.001) were the only factors associated with the occurrence of MS, HOMA-IR (OR 9.7; p < 0.001) and PPI exposure (OR 9.2; p < 0.001) were the only factors associated with the occurrence of HS.

Conclusion: PPI exposure adds further risk of occurrence of MS and HS for patients with CD on GFD. The use of PPI in patients with CD on GFD should be limited to strict indications.

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

References
1. BSG guidelines recommend that patients with CD are seen annually for a clinical review, blood tests and a DEXA scan if needed. 2. The indication for a DEXA scan is unclear due to conflicting recommendations in current guidelines. 3. The aim of our study was to audit our practice, with a focus on requests for DEXA scans.
Conclusions: Higher baseline PS volume in patients with SBS-IF correlates with greater absolute reduction in PS volume with TED treatment. 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.

D.L. Seidner: I have served as a consultant for Shire.

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References:
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Introduction: Plasma citrulline has been proposed as a biomarker for remnant intestinal length, but it is unclear if plasma citrulline levels reflect intestinal absorptive function.

Aims & Methods: This post hoc analysis investigated the relationship between reductions in parenteral support (PS) volume and changes in plasma citrulline levels with tebufuglide (TED) 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 0.5 mg/kg/day in patients with SBS-IF. Plasma citrulline levels were assessed at baseline and Week 24 in all patients randomised to TED and in patients stratified by bowel anatomy.

Results: In the TED arm (n = 42), plasma citrulline levels at baseline were significantly correlated with remnant small bowel length (R² = 0.14; P = 0.02; n = 36) but 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).
volume reductions with TED. Plasma citrulline changes with TED may reflect a relatively low proportion of healthy controls. Both FD and IBS subjects experienced similar proportions of methane-producers. Symptoms were induced in a relatively low proportion of healthy controls. Both FD and IBS subjects experienced minimal symptoms when any of the three carbohydrate solutions were ingested. Healthy controls experienced minimal symptoms when lactulose was ingested when compared with subjects with FD. In general subjects with IBS experienced both epigastric pain and abdominal pain when lactulose was ingested while control subjects with no known GI disorder/symptoms were recruited. All subjects underwent HBT testing in the upper abdomen, leading to misdiagnosis as FD.

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.

**Results:** A total of 353 subjects completed at least one breath test examination and 313 subjects completed all three breath tests. 16%, 55% and 29% were control, FD and IBS subjects. All subjects underwent HBT testing in the upper abdomen. Reducing poorly absorbed short-chain carbohydrates (FODMAPs) might be efficacious as FD as it is in IBS.

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

**Table 1:** Induction of Gastrointestinal Symptoms with Lactulose, Lactose and Fructose Hydrogen Breath Testing in Functional Dyspepsia and Irritable Bowel Syndrome Subjects

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**Conclusions:** 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 and abdominal pain. Reducing poorly absorbed short-chain carbohydrate (FODMAPs) might be efficacious as FD as it is in IBS.

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

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were evaluated: Group 1 (no colon/stoma present/no colon-in-continuity), Group 2 (≥50% colon/stoma 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 [2.1]) 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 = 0.03). 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</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoma present, n (%)</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Colon-in-continuity</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total volume of injected air, L</td>
<td>102 cm</td>
<td>90 cm</td>
<td>100 cm</td>
</tr>
</tbody>
</table>

BMI = body mass index; PBO = placebo; PS = parenteral support; TED = teduglutide. *n = 15; †n = 19; ‡n = 6.

Conclusion: Patients with SBS–IF in Group 1 had the highest baseline PS volume needs 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 bureau for Shire. S.M. Gabe: I have served as a consultant for Shire. D.L. Seidner: I have served as a consultant for Shire. H. Lee: I am an employee for Shire. C. Oliver: I am an employee for Shire.
the size and locate the position of the lesions, and present objective information for management of small intestinal neoplasms. Therefore, 3D CT enteroclysis is a powerful new tool for diagnosis, pre-surgical evaluation, and follow-up for small intestinal neoplasms.

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

Reference

Results:
Sixty-one (61%) SBCE were carried out. The overall detection rate within a surgical operation or video capsule endoscopy and the clinical relevance of ink tattooing during balloon-assisted enteroscopy (BAE).

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). Balloon enteroscopy was performed in 50% (n = 26) of patients during SBCE. The ink tattooing was performed at the endoscopy unit of Klinikum Augsburg. We performed a retrospective analysis of all 81 (52%) patients who received an ink tattooing during BAE.

Disclosure of Interest: Disclosure of Interest: The authors declare that they have no conflict of interest.

Results:
The majority of 33% of SBCE diagnoses were malignant, (86%) patients underwent surgical resection of their small bowel tumour and 10% patients underwent cross sectional imaging prior to SBCE, of which 3 (42%) had a reported no small bowel abnormalities. All patients had underwent at least one negative upper and lower endoscopy prior to referral, and SBCE was the third investigation in 25% (n = 20) of patients. A total of 32 (66%) patients underwent a double balloon enteroscopy (DBE) for further evaluation of findings and up to obtain tissue samples. In terms of histological diagnoses, adenocarcinomas were found in 43% (n = 6), Neuroendocrine tumours in 29% (n = 4), Angiomyolipoma 1% (n = 1) and mesenteric thrombus 1% (n = 1). All patients eventually underwent surgical resection of their small bowel tumours and 80% (n = 11) patients remain well at present, after a mean follow up time of 15.2 months (2-36).

Conclusion: Ink tattooing is a powerful new tool for diagnosis, pre-surgical evaluation, and follow-up for small intestinal neoplasms. It is a useful tool to avoid unnecessary examinations and aids the intraoperative localization of pathologic lesions. A complete 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.

Tuesday, October 31, 2017:09:00-17:00 Nutrition II - hall 7
PI295 VITAMIN D PREVENTS HEPATIC STEATOsis AND CARDiovascular DAMAGE IN A RAT MODEL OF FATTY WESTERN DIET
G. Mazzone1, C. Morisco2, V. Lemo3, G. D’Argenio1, M. D’Armiento2, A. Rossi1, C. Del Giudice2, N. Caporaso1, F. Morisco1
1Department Of Clinical Medicine And Surgery, University of Naples Federico II, Naples/Italy; 2Department Of Advanced Biomedical Sciences, University of Naples Federico II, Naples/Italy

Contact E-mail Address: v.lemo@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, or restore insulin resistance and the metabolic alterations contributing to CVD and hepatic failure (HF) caused by a westernized diet, in a rat model without specific vitamin D deficiency.

Results: Eighteen adult male Wistar rats were divided into three groups, each of 6 rats, fed with: Group 1: Standard Diet, 3.3 kcal/g (SD); Group 2: Western Diet, 5.6 kcal/g (WD) containing 13 IU/day/rat of vitamin D3; Group 3: Western Diet + Vit D (WD Vit D) containing 25 IU/day/rat of vitamin D3. The experiment was conducted for 6 months. Standardized tailed-bell blood pressure (BP) measurements of conscious rats and throracic echocardiography were performed in basal condition (Time 0), and after 3 and 6 months of diet. Hepatic steatosis and collagen myocardiac fibrosis were assessed using standard methods. Serum ferrum insulin and homocystein (Hcy) 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 WD Vit D group was only 27%. The WD group HOMA-IR 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 WD Vit D 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 27.4 ± 12% p < 0.001 at 3 months, and by 47.1% ± 11%, p < 0.001 at 6 months. At the end of the study, SBP resulted to be higher in WD group (117.8 ± 6 mmHg) than both SD (98.7 ± 8 mmHg, p < 0.001) and with WD Vit 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 Vit D 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 WD Vit D groups, while
P1297 ELIPSE BALLOON SYSTEM: OUR EXPERIENCE. A PRELIMINARY STUDY

Gastroenterology And Digestive Endoscopy, Azienda Ospedaliera San Giovanni Addolorata, Rome/Italy

Contact E-mail Address: veronicae@aol.com

Introduction: Gastric 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 endoscopes 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 procedureless balloon that does 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 female (average age 40, mean BMI = 40 kg/m2), were included in this study. Each patient swallowed Elipse™ 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 semiliquid diet.

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 them, weight loss was maintained at 6 months follow-up. There were no floatations or serious complications.

Conclusion: This study demonstrates the efficiency, security and simplicity of IGB ELIPSE in overweight adults. All 6/6 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 them, weight loss was maintained at 6 months follow-up. There were no floatations or serious complications.

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

References


P1298 CHANGE OF VITAMIN D AND BONE MINERAL DENSITY AFTER BARIATRIC SURGERY IN CHINESE POPULATION

M. Han1, W. Lee2
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 duodeno-jejunal bypass with sleeve gastrectomy (DBJ-SG).

The characteristic of the study population was shown as table 1. The differences according to the actual consultations.

Table 1: Characteristics of study population one year after bariatric surgery

<table>
<thead>
<tr>
<th>LSG</th>
<th>MGB</th>
<th>RYGB</th>
<th>DJBSG</th>
<th>OVER ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>15</td>
<td>24</td>
<td>5</td>
<td>6</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>
</tr>
<tr>
<td>Sex(M:F)</td>
<td>7.8</td>
<td>5:19</td>
<td>23</td>
<td>3</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>29 (2.4)</td>
</tr>
<tr>
<td>CA(mg/dl)</td>
<td>9.6 (0.3)</td>
<td>9.1 (0.3)</td>
<td>9.2 (0.4)</td>
<td>9.3 (0.4)</td>
</tr>
<tr>
<td>PTH-(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>
</tr>
<tr>
<td>VIT.D (ng/ml)</td>
<td>19.4 (7.7)</td>
<td>14.6 (9.9)</td>
<td>12.9 (8.6)</td>
<td>16.9 (5.3)</td>
</tr>
<tr>
<td>VIT.D insufficiency (6.7%)</td>
<td>83 (3.3%)</td>
<td>360%</td>
<td>0</td>
<td>12.3 (5)</td>
</tr>
<tr>
<td>VIT.D deficiency (&lt;5.3 ng/ml)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>BMD(g/cm2)</td>
<td>1.1 (0.25)</td>
<td>1.15 (0.23)</td>
<td>1.18 (0.26)</td>
<td>1.11 (0.19)</td>
</tr>
</tbody>
</table>

Conclusion: One year after bariatric surgery, the prevalence of osteopenia and osteoporosis 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.
P1300 INTRAGASTRIC BALLOON: A LARGE BRAZILIAN MULTICENTRIC STUDY OVER 10,000 CASES AND 20 YEARS OF EXPERIENCE

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Introduction: The intragastric balloon has been used for more than 20 years in Brazil as an endoscopic method 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 databank. IGB implantation was set at p39 months. Statistical analysis was performed according to sex and degree of excess weight (overweight and grade I, II and III). Data were assessed 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 initial BMI, and weight loss was strongly related to BMI. The patients showed a significant weight loss, with a significantly lower final BMI (27.16/C0.03) and average weight regained in this interval was 22.08 kg (C0.15). The mean BMI of the patients was 24.78/C0.04 and the mean average diameter of the IGB was 13.37/C0.02. The average proportion of weight loss between the first and last IGB was 3.37 kg/C0.03 and the average proportion of weight regain was 4.59 kg/C0.03. 122 patients (22.0%) did not achieve the target IGB diameter and 05 patient (0.9%) did not lose weight even with the desired IGB diameter. From the 146 patients (2.5%) who had weight regain some revisional procedures had been attempted and more recently endoscopic revisional procedures had been described.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastric entero anastomosis in patients undergoing bariatric surgery who have regained weight with dilation of the anastomosis. 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.

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

References

P1301 WEIGHT REGAIN AFTER BARIATRIC SURGERY - ARGON PLASMA COAGULATION FOR GASTROJEJUNAL ANASTOMOSIS DECREASE

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Introduction: The weight regained has been a described growing problem in patients after bariatric surgery. In this regain is multifactorial and associated to dilation of Gastrojejunostomy (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 morbid 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 anastomosis dilation, although some studies use smaller diameters such as 12 mm similar to that created manually 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 diameter was measured using a 33-mm long bougie diameter between an attempt and a successful treatment with a maximum of 03 applications. APC set was 2-3L min with 65-85W. GJ diameter target was 8-12 mm estimated with pre-measured rasper. 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 (C14.72). Average and average weight gain in this interval was 22.08 kg/C11.05. The mean diameter of the anastomotic was 24.78/C0.04 and the average number of APC sessions was 1.78/C0.61. The average reduction of anastomotic diameter was 14.86 mm/C0.74 and the final average diameter was 33.02 mm/C0.83. The average weight loss between the first and last APC was 13.37 kg/C0.72 and the average proportion of weight regain was 4.59 kg/C0.03. 122 patients (22.0%) 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 patients (2.5%) who had weight regain some revisional procedures had been attempted and more recently endoscopic revisional procedures had been described.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastric entero 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 follow-up, the reintroduction of the patient to the multidisciplinary team is mandatory. In cases of weight regain and loss to follow-up, the reintroduction of the patient to the multidisciplinary team is mandatory. 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

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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 unfavorable. In this segment, treatment with the intragastric balloon (IGB) may be an interesting option.

Aims & Methods: 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 (73.3%). 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 was 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...
98.7% (76 patients) respectively. 30 patients reached a normal body mass index (BMI) (23–25.9 kg/m²) according to the Pan American Health Organization (PAHO). Elderly shows a higher BMI reduction (p = 0.0002) and %TBWL (p = 0.0003) than adults.

Table 1

<table>
<thead>
<tr>
<th>Body weight (kg)</th>
<th>n = 77</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>103.37 ± 17.14</td>
</tr>
<tr>
<td>Final</td>
<td>81.66 ± 15.71</td>
</tr>
<tr>
<td>Reduction</td>
<td>21.71 ± 7.76</td>
</tr>
<tr>
<td>%TBWL</td>
<td>21.07 ± 6.07</td>
</tr>
<tr>
<td>BMG (kg/m²)</td>
<td>37.89 ± 5.41</td>
</tr>
<tr>
<td>Baseline</td>
<td>29.86 ± 4.76</td>
</tr>
<tr>
<td>Final</td>
<td>8.03 ± 2.88</td>
</tr>
<tr>
<td>Excess weight (kg)</td>
<td>35.53 ± 16.98</td>
</tr>
<tr>
<td>Baseline</td>
<td>13.82 ± 15.49</td>
</tr>
<tr>
<td>Final</td>
<td>60.27 ± 30.01</td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB (intragastro balloon); TBWL (total body weight loss); EWL (excess weight loss).

Conclusion: Endoscopic treatment of obesity with an IGB shows to be an excellent therapeutic option for the elderly.

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

P1303 THE EFFECT OF A CONTROLLED GLUTEN CHALLENGE IN PATIENTS WITH SUSPECTED NON-COELIAC GLUTEN SENSITIVITY: A RANDOMIZED, DOUBLE-BLIND PLACEBO-CONTROLLED CHALLENGE

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Introduction: Non-coeliac gluten sensitivity (NCGS) is a new entity with unknown prevalence and mechanisms, and there is a need for a standardized procedure to confirm the diagnosis. The objective of this study was to characterize the response to a gluten challenge, when performed according to the updated Salerno criteria.

Aims & Methods: Twenty patients (14F/6M, age range: 21–62 y) with suspected NCGS, without coeliac disease and wheat allergy, were included while on a gluten-free diet. All patients went through four periods of double-blinded provocation with gluten and placebo containing muffins. They were instructed to eat two muffins a day (11 g gluten) for four days, followed by a three day’s wash-out. Gastrointestinal symptoms were recorded with questionnaires at baseline and after each provocation, while fatigue and quality of life were registered at baseline and end of the trial.

Results: Four out of twenty patients (20%) correctly identified the two periods when they received muffins containing gluten, hence were diagnosed with NCGS. The diagnosed group tended to show higher symptom scores than the not-diagnosed group both at baseline, after gluten exposure and after placebo, but no clear difference was seen in symptom change after provocation with gluten and placebo. The not-diagnosed group showed more severe symptoms with placebo than with gluten (p = 0.029). Symptom severity at baseline was significantly correlated with fatigue (r = 0.63, p = 0.003) and reduced quality of life (r = 0.76, p = 0.0001).

Conclusion: This randomized, double-blind placebo-controlled challenge with gluten diagnosed four patients with NCGS according to the Salerno criteria. However, according to the symptom registrations there are no clear difference between the diagnosed and the not-diagnosed group, or between symptoms after gluten provocation and placebo, indicating no specific effect of gluten in a group of patients with suspected NCGS.

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

P1304 THE ROLE OF BILE ACIDS AND GUT MICROBIOTA IN CORONARY ARTERY DISEASE: RESULTS OF THE MARBAC STUDY IN HUMAN (MICROBIOTA ATheroma and BILE ACID IN CORONARY DISEASE)

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Introduction: By targeting specific receptors into the vascular system, bile acids (BA) are cholesterol derivatives that are now considered as hormones. BA regulate the basal energy expenditure and glauco-lipidic metabolism. In animal models of atheroma development (ApoE-/- and LDL-/- mouse models) a powerful anti-atherosclerotic effect of circulating BA has been evidenced: BA are metabolites of the gut microbiota, suspected to play a role in the development of atherosclerosis. This study examined whether variations in BA or in the gut microbiota composition can be described in the human Coronary Artery Disease pathophysiology.

Aims & Methods: Consecutive patients undergoing coronary angiography between February and May 2015 were enrolled. To avoid physiological or induced variations in circulating BA or in the gut microbiota, highly restrictive exclusion criteria were applied. Circulating and fecal BA were quantified by high pressure liquid chromatography and tandem mass spectrometry. The fecal microbiota composition was assessed by 454 pyrosequencing of the total fecal bacterial DNA.

Results: 80 patients were prospectively included of 406 screened, and divided in two groups: with (n = 45) and a group without (n = 35) CAD. The mean serum concentration of total BA was 1.02 ± 0.16 mmol/l in patients with, versus 2.16 ± 0.38 mmol/l in patients without CAD (P = 0.005). This decrease, (adjusted for gender and age) was an independent predictor of CAD (odd ratio = 0.51; 95% confidence interval 0.31, 0.85; P = 0.01). The BA concentrations in feces were similar in both groups. There was no group-specific pattern in the fecal microbiota. In a subgroup of 17 patients, one month of statin therapy increased the serum BA concentration from 0.68 ± 0.08 to 1.37 ± 0.21 mmol/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 CAD 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!

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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 individual patient.

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; 44.8 ± 13.6 years) started (T0) a LFD 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.

Results: 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). Normal BSC facets were reported by 38 patients at T0 to 60 patients both at T1 and T2. The degree of symptom relief with the diet was 1.5 ± 0.6 at T1 and 1.6 ± 0.7 at T2 and the degree of satisfaction was high.
both at T1 (8.4 ± 1.6) and T2 (8.2 ± 1.7). When starting, LFD patients consumed 67% of foods lactose (67%), fructose (27%), and galacto-oligosaccharides (GOS) (17%) and polysaccharides (3%). The reintroduction phase (T2) enabled us to detect lactose in 70%, fructans in 30%, and fructose in 33%. In polysaccharides, we detected 27% as trigger foods lactose (67%), fructans (27%), fructose (17%), galacto-oligosaccharides (GOS) (17%) and polyols (3%); the reintroduction phase (T2) enabled to detect lactose in 70%, fructans in 30%, fructose in 37%, GOS in 33% and polysaccharides in 27%, as real triggers. The agreement (Cohen’s kappa) was moderate for lactose (κ = 0.50), fair for fructans (κ = 0.39) and fructose (κ = 0.32) and poor for polysaccharides (κ = 0.06) and GOS (κ = 0.01).

Conclusion: Not only did reintroduction not affect the improvements achieved during the elimination phase, but it also precisely identified the foods responsible for 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 underlines the fact that LFD has to be administered and carried out under the guide of an expert nutritionist.

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

P1306 EXPRESSION OF THE FRUCTOSE TRANSPORTER GLUT5 IN PATIENTS WITH FRUCTOSE MALABSORPTION

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Introduction: Fructose malabsorption (FM) is a frequent finding in patients with abdominal bloating due 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 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 patterns of GLUT5 were correlated with clinico-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 (rs = 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 pathologies of the intestinal 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 functiona 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

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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. Symptom relief due to a low FODMAP diet has especially been investigated in patients suffering from irritable bowel syndrome (IBS) and has proven to reduce gastrointestinal symptoms in up to 86% of patients with IBS. In addition, there is evidence for an association between gastrointestinal symptoms and joint hypermobility (JH). However, there is no clear data regarding response rates to a diet low in FODMAPs in patients suffering from JH. In this study we aimed to assess and compare the response to a diet low in FODMAPs in JH positive and JH negative patients with FGIDs.

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%) were male. Median age was 35 (range 18-67) years. Females 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 symptom response to a diet low in FODMAPs and joint hypermobility status in FGID patients. An understanding of structural pathophysiological factors (e.g. gut permeability) and joint hypermobility status in FGID patients might 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, Vifor, Abbvie, UCB
D. Pohl: Allergan, Vifor, Astra, Peramed
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

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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 and duodenal physiology, we performed a prospective single-center study. Healthy adults with baseline fiber intake ≥14 g/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 (EGD) 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: 86% dietary carbohydrate, 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 EGD 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 transpantapolar 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 recruited. Average BMI was 23.1 ± 2.5 kg/m2. At baseline, all patients were asymptomatic. After dietary intervention, all patients endorsed at least one new symptom and 9/10 participants endorsed multiple (≥2) new symptoms. At baseline 4/10 patients had positive duodenal cultures (> 100,000 CFU/mL, anaerobic) despite having no symptoms. Of the 6 who had no growth initially, I developed bacterial overgrowth following intervention. There was no significant difference in TEER (26.43 ± 1.98 vs 26.18 ± 2.45 Ohms/cm²); FITC flux (217.3 ± 43.7 vs 217.6 ± 42.57 ng/ml) or baseline Isc (48.27 ± 0.39 vs 51.58 ± 3.02 ng/ml) 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 simple sugar diet led to gastrointestinal symptoms in patients who normally have no symptoms. 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
**P1309** STRESS AND STRESS-RELATED PEPTIDE AMPLIFY THE ANTAGONISTIC EFFECTS OF CCK ON GASTRIC MOTILITY IN RATS

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**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 dyspepsia (FD) have hyper sensitivity to CCK. And revels 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, corticosteroid-releasing factor (CRF) or urocortin (UCN1) injection intraperitneally (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 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 increased gastric emptying rate 1 hr after the injection. CCRF or UCN1 was injected and the interaction with CCK on food intake was examined. Therefore there might be possible to cause interactive actions between two peptides, inducing satiation to finish food intake.

**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.

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**P1310** PEPTIDE TYROSINE-TYROSINE (PYY) ENHANCES THE EFFECTS OF CHOLECYSTOKININ (CCK) ON GASTRIC MOTILITY AND FOOD INTAKE IN RATS

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**Introduction:** Cholecystokinin (CCK) and peptide tyrosine-tyrosine (PYY) have been known to influence food intake for 1 hr after the injection. In experiments, CRF or UCN1 was injected and the interaction with CCK on food intake was examined. 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 PYY 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 PYY or CCK or CCK followed by PYY was given intraperitoneally (IP). The amounts of food were measured and gastric emptying rate was calculated. Study on appetite. PYY or CCK was IP injected to the rats just before setting food to eat. The amounts of food were measured and gastric emptying rate was calculated. To clarify the involvement of the brain in the interaction between CCK and PYY, 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). PYY 25–250 pmol/kg significantly inhibited gastric emptying for 1 or 2 hrs after the injection (p < 0.01). PYY 250 pmol/kg significantly inhibited food intake for 1 hr after the injection (p < 0.01). The combination of CCK 10 nmol/kg and PYY 250 pmol/kg inhibited gastric emptying more than CCK alone (p < 0.001) or PYY alone (not significant). PYY and CCK additively inhibited food intake when PYY was injected 20 minutes later from CCK injection. PYY 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 PYY with CCK amplified the suppression of gastric emptying. The result suggests that the sequence secretion of CCK and PYY 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.

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**P1311** REGULATION OF MICRORNAS BY P53 FAMILY MEMBERS IN HEPATOCELLULAR CARCINOMA

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**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 tumour suppressive 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 and p73 significantly upregulated microRNAs. p53 significantly downregulated microRNAs. In the presence of p53 and p73, miR-34a was upregulated by 3.6-fold, miR-200c by 3.2-fold, and miR-199 by 5.5-fold. p53-dependent expression of miR-34a was further increased in the presence of Doxorubicin (5.7-fold), Regorafenib (2.5-fold) and Tivantinib (1.9-fold) compared to controls. Moreover, incubation with Regorafenib 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 tumour suppressive microRNAs represents an effector mechanism by which p53 family members exert their role in tumor development and treatment response. The observed synergistic effect of p53 and HCC-relevant therapeutics on microRNA expression might provide new options for the development of therapeutic and prognostic measures in HCC.

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

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**P1312** IGFBP2 IS REGULATED BY THE P53 FAMILY OF TRANSCRIPTION FACTORS IN HEPATOCELLULAR CARCINOMA

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**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 origin their signature varies. In hepatocellular carcinoma (HCC) 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 tumour suppressive microRNAs represents an effector mechanism by which p53 family members exert their role in tumor development and treatment response. The observed synergistic effect of p53 and HCC-relevant therapeutics on microRNA expression might provide new options for the development of therapeutic and prognostic measures in HCC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1313 HOW TO IMPROVE THE RELIABILITY OF LIVER FIBROSIS EVALUATION USING 2D-SWE

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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-SWE. We used Stear Wave Elastography from General Electronics (2D-SWE), 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 (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 LS 10 LS measurements were acquired in a homogenous area and the IQR and the LS measurement were calculated in each case. We divided our subjects into 3 groups according to the 2D-SWE LS 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 LS for each group.

Results: All 226 (100%) subjects included had 10 valid measurements by means of 2D-SWE and reliable results by TE. A strong positive correlation was found between LS values obtained by means of 2D-SWE 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 and TE in the IQR/M ≥ 0.30 groups (r = 0.38, p > 0.0001). A weak positive correlation was found between LS values obtained by means of 2D-SWE 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 and TE in the IQR/M ≥ 0.30 groups (r = 0.38, p > 0.0001).

Conclusion: Using the IQR/M < 0.30 as quality criteria significantly increase the reliability of LS measurements by means of 2D-SWE. Using IQR/M < 0.10 criteria does significantly improve the reliability of 2D-SWE LS measurements as compared to 0.10 < IQR/M ≤ 0.30 criteria.

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References

P1314 MONITORING OF LIVER FUNCTION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE IN COMBINATION WITH METABOLIC SYNDROME

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Introduction: UC+ methacholin 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. Among them 61 patients were non-alcoholic fatty liver disease. There were 75 women and 38 men. The criteria, which has been examined for the functional state of the liver was 13C-MBT. The control group included 25 patients with a BMI of 25-30 kg/m2 without severe concomitant diseases. Indicators of 13C-MBT were metabolic rate, cumulative dose of UC+ methacholin on 40 and 120 minutes. Also evaluation was carried by mathematical deduction which measured the liver dysfunction stage.

Results: The data showed normal detoxification liver function in patients without MS (20.11% ± 0.55). The results were below normal in patients with BMI higher than 25 kg/m2, which indicated that there were initial changes in the functional state of liver. In patients with steatosis - cumulative dose on 120 minute was 15.12% ± 0.49, which corresponded to a moderate reduction of detoxification function with the mass of function hepatocytes 50–100%. The data of 13C-MBT in patients with steatohepatitis showed pronounced changes of the liver detoxification function (8.88 ± 0.64%). All indicators at steatosis group have indicated the moderate decline detoxification function with the level of function hepatocytes 50–100%. The data of 13C-MBT in patients with steatohepatitis showed pronounced changes of the liver detoxification function (8.88 ± 0.64%). All indicators at steatosis group have indicated the moderate decline detoxification function with the level of function hepatocytes 50–100%.

Conclusion: In assessing to the date of 13C-MBT, main attention is paid to mathematical calculation of CO2 labeled methachetin. It allows to identify the early stages of the liver detoxification function violation.

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

P1315 IDENTIFICATION OF P73 AS A NOVEL TRANSCITIVATOR OF IGFBP4 GENE EXPRESSION IN HEPATOCELLULAR CARCINOMA

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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 plays 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, p63, p73, p53-DN, p63-DN and p73-DN. Transcriptional regulation of IGFBP4 was determined by real time qPCR. Intracellular and extracellular IGFBP4 protein levels were examined by Western Blotting and ELISA. Transfase database analysis was performed to identify potential p53-family binding sites in the IGFBP4 locus. Identified sequences were cloned, deleted and analyzed by lucerase reporter assays to evaluate binding of p53-family members.

Results: IGFBP4 expression was increased by more than 30-fold in TAP73-transfected Hep3B cells, by more than 10-fold in DNp63- and p73-DN-transfected cells. Induction of intracellular IGFBP4 protein was detected in all transfected Hep3B cells, whereas extracellular IGFBP4 levels were only measurable after TAP73 and DNp63 transfection. Database analysis identified 2 putative binding sites within intron 1 of the IGFBP4 gene. Intron 1-dependent luciferase activity was increased by up to 20-fold in TAP73-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 for p53-family-mediated transcription. Results from this study allow us to suggest that p53 and IGFBP4 enhance our knowledge in a so far unknown association of p53-family network and IGF signaling. Since in an independent study we identified IGFBP2 as a novel p53-family target gene, these results highlight the link between p53-family-mediated tumor-inhibiting mechanisms and IGF receptor signaling pathways which decide on growth, cancerogenesis and treatment response.

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

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P1316 NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH 2 TVL AND HOMOCYSTINURIC HEART DISEASE AGAINST THE BACKGROUND OF METABOLIC SYNDROME. HOW TO DIAGNOSE?

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Introduction: Liver fibrosis (LF) is a progressive pathological process resulting in accumulation of excess extracellular matrix proteins. A metalloproteinase BMP1 cleaves various matrix proteins and procollagen type I. We have recently discovered that BMP1-3 isoforms circulate in the plasma and their neutralization decreases the progression of chronic kidney disease. The role of BMP1 in liver diseases associated with fibrosis has not been investigated. Bone Morphogenetic Protein (BMP1) and mammalian tolloid (mTLD) are alternatively spliced products of the BMP1 gene that are essential for tissue patterning and ECM assembly by biosynthetic processing of a wide range of ECM precursors specifically pro-collagen type I. Therefore, a decrease in the metabolic capacity from 15 to 10% accompanied by an increase in ALT levels (more 60 mmol/l) and the portal vein size, which is 75% for steatosis, and 76% for steatohepatitis.

Results: The rate of liver metabolism based on 13C-methacetine test results in patients without NAFLD was 22.07±0.66%, in patients with steatosis -17.1±0.84%, steatohepatitis - 14.3±0.62%. Cumulative dose of methacetine on 120 minute was 20.25±0.46% in patients without pathology of liver, 16.1±0.49% in patients with steatosis, 11.4±0.36 in patients with steatohepatitis. ALT level in control group was 0.4±0.05 mmol/l, with steatosis 0.9±0.8 mmol/l, in control group of 237 patients with liver steatosis CAP index was 11.2±0.26 mm, in group of steatosis 11.9±0.21 mm, in patients with steatosis 13.7±0.15 mm. There were investigated, that the rate of metabolism and its cumulative dose on 120 minute has decreased in steatohepatitis group in comparison of the control group, with simultaneous significant increasing of ALT level and diameter of the portal vein. However, a significant reduction of the metabolism rate of methacetin and the cumulative dose of 13CO2 in the background of the increase of a diameter of vena portae compared with a group with liver steatosis in steatohepatitis group. The investigations found that in ALT and the diameter of the portal vein negatively correlated with cumulative dose of 13CO2 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 60 mmol/l) and the portal vein size (13 mm).

Conclusion: The differentiation between steatosis and steatohepatitis should be moderate with the speed of a metabolism, a cumulative dose of methacetine on 120 minute, BMP1 and vena portal size. The sensitivity of the method is based on the definition of the three proposed indicators - ALT level, total concentration of 13C-methacetin on 120 minute and the portal vein size, which is 75% for steatosis, and 76% for steatohepatitis.

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?

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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. NAFLD patients who performed Fibroscan during the last 3 years, inflammatory were included. The exclusion criteria: age <18 years, absence of total colonoscopy with good preparation <3 years, inflammatory bowel disease, hereditary polyposis syndromes and personal/family history of colorectal polyps/neoplasia. Compared patients with colorectal polyp cases and without colorectal polyps (controls). Demographic variables, cardiovascular/metabolic risk factors, comorbidities, laboratory parameters and Fibroscan score of steatosis were compared.

Results: Of the 237 NAFLD patients who performed Fibroscan, 103 underwent total colonoscopy. The prevalence of colorectal polyps was 28.2%(n=29): 19.4%(20/103) hyperplastic, 16.5%(17/103) adenoma and 4.8%(5/103) advanced adenoma/adenocarcinoma. The mean age was 58.3±5.1 years (vs 57.09±10.53, p=0.008), with men predominant (51.7% vs 63.5%; p=0.272), mostly located in the left colon (55.2% vs 44.8%; p=0.314) and number and mean size of 1.46±0.88 and 6.89±6.56 mm, respectively. After multivariate logistic regression analysis colorectal polyps were associated with F4 liver fibrosis (34.5% vs 14.9%; p=0.026; OR=3.10) and obesity (BMI > 30kg/m2): 55.2% vs 29.7%; p=0.016; OR=2.91); hyperplastic polyps were associated with liver fibrosis for a cut off value of 6.9KPa (AUROC 0.689±0.008; S=85.7%; Sp=51.2%); mainly F4 (42.8%±14.6%; p=0.004; OR=4.38), hyperuricemia/gout (23.8%±8.5%; p=0.042; OR=3.35) and peptic ulcer disease (9.5% vs 1.2%); p=0.043; OR=8.53); adenoma was associated with liver steatosis (88.2%±83.7%; p=0.024; OR=3.50), F4 liver fibrosis (41.2%±16.2%; p=0.004; OR=3.248) and obesity (58.8%±32.6%; p=0.040; OR=2.96), advanced adenoma/adenocarcinoma was associated with F4 fibrosis (20.0%±5.2%; p=0.012; OR=1.224), hyperuricemia/gout (40.0%±10.3%; p=0.040; OR=1.50) and dilated cardiomyopathy (20.0%±4.1%; p=0.003; OR=1.24).

Conclusion: More than 1/4 of the patients with NAFLD have colorectal polyps, being 16.5% adenoma and 4.8% advanced adenoma/adenocarcinoma. Obesity and liver steatosis are independent risk factors for colorectal adenoma. Liver fibrosis, especially F4 is an independent risk factor for all types of colorectal polyps.

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-OBSE Individuals

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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 ultrasoundography (USG) in our clinic, during the last 6 months. A 5% increase in echogenicity detected in the USG was defined as the diagnostic 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.
Results: Among 362 participants 169(46.7%) were men with an average age of 44.81±10.73. 78 (21.6%) participants were women, 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 48.07±10.13 while among those with NAFLD (−) people was 38.7±10.0.4. 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 obese individuals.

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

References

P3212 AUTOMATED RAPID DETECTION SYSTEM USING THE QUENCHING PROBE METHOD FOR DETECTING RS738409 POLYMORPHISM IN PNPLA3 IN NONALCOHOLIC FATTY LIVER DISEASE

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Introduction: Recent studies have shown that the single nucleotide polymorphism (SNP) rs738409 in the PNPLA3 gene is strongly associated with severity of nonalcoholic fatty liver disease (NAFLD). However, the traditional direct sequencing (DS) method is time-consuming and labor-intensive. The i-densy™ (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-densy 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- and guanine QP were 5’-cttctctctcctttgctttcacag-3’, 5’-gtgtgagca-

Results: The genotypes obtained with the QP method were identical to those obtained with the conventional DS method. Then, we analyzed 73 patients with NAFLD according to the PNPLA3 genotype in terms of alanine aminotransferase (ALT), aspartate aminotransferase to platelet ratio index (APRI), Fibroscan value, and cumulative hepatocellular carcinoma (HCC) development rate.

Conclusion: The i-densy™ system can be used for genotyping with QP, which is simple and fast compared with the conventional DS method. We suggest that the QP method is useful for the accurate and fast diagnosis of NAFLD.

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

References
Wilson disease.

Our analysis of long-term Cu exposure presents new insights in copper metabolism and suggests a new role of MDR1 in the pathogenesis of Wilson's disease (WD). Symptoms of WD are i.e. elevated Cu accumulation in liver and loss of function results in the inherited autosomal recessive disorder Wilson Disease (WD). Symptoms of WD are typically seen in children and young adults. 

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 randomized and to receive twice-daily 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 (WHR), 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[1].

Results: As compared to placebo, 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 ± 0.63% (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). 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:
1. Zhi Dong, Shi-Ting Feng. MR quantification of total liver fat in patients with impaired glucose tolerance and healthy subjects. PLOS ONE, 2014;9(4):e111283

P1323 LONG-TERM COPPER EXPOSURE OF HEPATIC CELLS LACKING FUNCTIONAL ATP7B


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Introduction: Copper transporter ATP7B is essential for hepatic Cu homeostasis and loss of function results 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) and intracellular Cu load (atomic absorption spectroscopy) was assessed. RT-qPCR was performed to quantify the expression of genes related to Cu homeostasis. Functional analysis of candidate genes was assessed via siRNA transfection. Additional measurements of CuT1 expression was performed by flow cytometry (FACS) and Western Blot.

Results: KO cells can survive for many months in the presence of high Cu and gain resistance (CuR). Characterization of CuR cells revealed increased survival up to 12-fold compared to control, whereas a high intracellular Cu accumulation was noticed. Once Cu resistance was established, the termination of Cu exposure did not result in the loss of resistance indicating a stable modulation of the cells. Two genes involved in Cu homeostasis displayed an altered expression pattern (upregulation of MT1 and downregulation of CTR1 by 28.1 ± 2.5 fold and −3.2 ± 0.4 fold, respectively) which was however transient and dependent on Cu exposure. The role of MDR1 which presented a stable modulation was further investigated by siRNA and drug activation (verapamil). Notably, cell viability and intracellular Cu load was not significantly affected indicating 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 metabolism and suggests a new role of MDR1 in the pathogenesis of Wilson disease.

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

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P1324 THE NONALCOHOLIC FATTY 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

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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 interventions. 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. 

Results: 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 fatty liver disease fibrosis score has good accuracy to identify 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?

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Introduction: FLI was developed as an alternative to the score of 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.

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, ≥500 dB/m as high-grade steatosis. Heavy drinkers are identified with AUDIT and SIAC questionnaires. Weekly alcohol consumption and inactivity increases the LR and sensitivity, 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.

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

References:
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.

Reference

P1326 METABOLOMICS IDENTIFIES PROGRESSIVE NAFLD
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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 & Method: 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 metabolomic profile identified four metabolites that are significantly associated with steatosis and steatohepatitis. The determination of NAFLD clinical forms is a priority in the prevention 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.

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

P1327 CHRONIC RENAL FAILURE IS ASSOCIATED WITH THE DEVELOPMENT OF NAFLD/NASH
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Introduction: Chronic renal failure (CRF) is frequently associated bone metabolism and osteoporosis with lowered levels of Vitamin D and/or hyperparathyroidism particular in case of hemodialysis. Younger studies suggest an association of low vitamin D levels with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), as well as metabolic syndrome, and diabetes mellitus. Unfortunately, a causality could not yet be proven.

Aims & Methods: Our aim was to identify patients on higher risk to develop NAFLD/NASH in a selected patient cohort being admitted for renal disorders. 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 parameters (including electrolytes, hormones, and vitamins) and pre-existing medical conditions (including high blood pressure, diabetes, hyperlipoproteinemia, and more) followed. Appropriate statistical tests were used to characterise the cohort (ANOVA; MANN-Whitney-U; FISHER-EXACT) using SPSS TM. Other hepatothepies 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 > GT > 30 U/l; normal: AST/ALT > GT < 30 U/l). Low 1,25-hydroxyvitamin D levels correlated significantly with high creatinine, urea, and LDL levels, while low 25-hydroxyvitamin 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.

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

platelet count were evaluated as predictors of high-risk varices. Overall 74/184 (40%) met the new “BAVElastPQ” 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 BAVElastPQ criteria gave sensitivity of 0.95, specificity of 0.44, a positive predictive value of 0.516 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 BAVElastPQ criteria correctly identified 99% of patients with- out 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 ElasPQ in the non-invasive assessment of clinically significant portal hyperten- sion, similarly proposed Baveno VI criteria though using ElasPQ as an alternative to transient elastography.

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

References

P1334 PROTON PUMP INHIBITORS INTAKE NOT ASSOCIATED WITH HEPATIC ENCEPHALOPATHY IN CIRRHOTIC PATIENTS
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Introduction: Inhibitors of the proton pump 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, and the prompt administration of treatment; the intrinsic virulence or pathogeni-

Results: 386 patients, 321 males (83.2%), mean age 60.3 ± 12.1 years. Main etiol-

calities of cirrhosis were alcohol (67.4%), alcohol plus hepatitis C Virus (16.3%)
and hepatitis B virus (5.2%). Hepatic encephalopathy was present in 222 (57.5%)
of the patients and 26.9% had PPI intake. In univariate analysis hepatic ence-

The incidence of bacterial infections in cirrhotic patients is signifi-

Introduction:
The incidence of bacterial infections in cirrhotic patients is signifi-

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 (MBI). 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-

P1333 CLINICAL IMPACT OF MULTIDRUG-RESISTANT BACTERIAL INFECTIONS IN LIVER CIRRHOSIS
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Introduction: The incidence of bacterial infections in cirrhotic patients is signifi-

cantly higher than that observed in general population, being one of the most

Introduction: The incidence of bacterial infections in cirrhotic patients is signifi-

Aims & Methods: 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 perform an independent risk factor analysis for 30 and 90-day mortality. We conducted a retrospective cohort study which evaluated all admissions due to decompensated cirrhosis in one center between 2010 and 2015. MDR bacterial infections, its acquisition site and the antibiotic resistance patterns were defined accor-

Conclusion: There was no association between hepatic encephalopathy and PPI intake. In patients with documented infections, no difference was noticed between non-MDI, non-MDR bacteria or MDR bacteria regarding the 30 (p = 0.801) and the 90-day (p = 0.525) mortality rate. In the multivariate analysis, elevated BUN and bilirubin, presence of bacterial infection and lower albumin, sodium and SP02 were independently

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

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ment improves liver sinusoidal endothelial dysfunction in CCl4 cirrhotic rats. J


Aims & Methods: The objective of this research was to perform a meta-analysis of randomized control trials (RCTs) and determine if statin therapy reduces portal hypertension as measured by the hepatic venous pressure gradient (HVPG) among adult patients with liver cirrhosis.

Results: Three trials comprising of 98 patients met the inclusion criteria. In the random-effect model, the weighted mean difference was 0.76 mmHg, favoring statin therapy over placebo. There was no evidence of significant heterogeneity (I² = 0%, p = 0.51).

Conclusion: Statin therapy reduces portal hypertension as measured by the HVPG among adult patients with liver cirrhosis. The findings of this study reinforce the promising role of statins in decreasing portal hypertension. Further RCTs with larger population and with longer duration of follow-up as well as the use of different statin drugs to explore further on the class effect are recommended.

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

References


P1335  IN HOW MANY PATIENTS WE WILL MISSDiAGNOSE ESOPHAGEAL VARICES BY USING THE BAVENO VI CRITERIA?

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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 1st to December 31st, 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 (TE), and a Stroop test. By using these criteria we classified the patients in: probably without EV (liver stiffness: 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 = 90.7%, Sp = 74.6%, NPV = 26.8%) for predicting the presence of esophageal varices (EV), while for the subgroup probably without EV had NPV = 80.3% (Se = 50.2%, Sp = 58.6%, PPV = 75.6%). The subgroup that had LS < 20 kPa and thrombocytes > 150,000/mm3, was compound of 60 patients. Using these criteria 38% of patients, with a Se > 80%, Sp = 28.3%, PPV = 50%, NPV = 61.2%, AUROC = 0.70, CI = 0.68-1.73. The best cut-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.

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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.
All other authors have declared no conflicts of interest.

P1336 COMBINED RADIOLOGIC-BLOOD PARAMETERS AND BLOOD DEPRESSIVE EFFECTS: IN PREDICTING OUTCOMES IN CHRONIC HEPATITIS C

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Introduction: Non-invasive fibrosis scores (NIFs) are increasingly replacing liver biopsy (LB) for estimation of liver fibrosis in patients with chronic liver disease (CLD), and is associated with a good diagnostic accuracy. However, NIFs have been shown to help in non-invasive screening of patients at high risk for development of esophageal varices and decompenstation after antiviral treatment. Application of these simple scores may help in non-invasive screening of patients at high risk for development of esophageal varices and decompenstation after antiviral treatment.

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

P1337 A SMART APPROACH TO THE DIAGNOSIS OF MINIMAL HEPATIC ENCEPHALOPATHY

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Introduction: Minimal Hepatic Encephalopathy (MHE) is present in more than 30% of patients with chronic liver disease (CLD) and is associated with a higher risk of mortality and hospitalization. No single test is currently available as a current gold standard, the psychometric hepatic encephalopathy score (PHES), has a positive predictive value of 40% and a negative predictive value of 90% for predicting MHE. The detection of MHE is often difficult due to time constraints associated with the current gold standard, the psychometric hepatic encephalopathy score (PHES), which has a positive predictive value of 40% and a negative predictive value of 90%. Our aim was to develop a diagnostic tool that could help in the non-invasive screening of patients at high risk for development of MHE.

Aims & Methods: 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 spss, and a cut-off defined by the AUROCs for predicting off-time (AUROC = 0.808) and EV (AUROC = 0.885) and with FIB-4 score for decomposition (AUROC = 0.854). At a cut of 1200 PSI had sensitivity of 87.2% and specificity of 73% for predicting cirrhosis and at a cut of 1100 PSI had sensitivity of 85% and specificity of 88% for MHE. A cut of 2.5, FIB-4 had a sensitivity of 82.5% and specificity of 80.1% in predicting decomposition.

Conclusion: CRBP’s predict cirrhosis and development of esophageal varices with high accuracy. Some of the blood derived NIFs have high accuracy in predicting decomposition post antiviral treatment. Application of these simple scores may help in non-invasive screening of patients at high risk for development of esophageal varices and decompenstation after antiviral treatment.

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

Results: A total of 96 patients (51 males) were recruited. Overall, the mean age was 51±7.6 years; mean years spent in education 13.8±4.2. In all there were 35 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 controls, 23/35 (66%) vs. 28/61 (46%), p=0.06. Within the CLD cohort, 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, 4/35 (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 (k =0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES (k = 0.1223). Similarly, 20 (57%) CLD patients had a positive Stroop test and 4 (11%) had a positive PHES (k = 0.1765). Regarding the Stroop test, the mean time taken to complete 5 correct runs was significantly higher in CLD patients, mean 117.9 s [58.5-217.8 s] vs. 101.2 s [55.3-218.6 s], p=0.02. However, mean Stroop on-off time was similar, 195 s [102.6-307.7 s] in the CLD cohort versus 187.9 s [101.2-420.9 s] in the control group. On note, CLD patients with a positive PHES had a significantly higher Stroop on-off time compared to those with a negative PHES, mean 260 s vs. 190 s, p=0.02. However, mean Stroop on-off time gave a Stroop on-off time > 187.5 s as a positive cut-off for our cohort, sensitivity = 100%, specificity = 59%. In total, 39 patients had an on-off time > 187.5 s, 38 (97%) had a positive Stroop test (k = 0.322), 2 fewer false positives, in the CLD group, and a slightly better correlation (k =0.2044). On average, PHES took 20 minutes to complete, and the Stroop test 5 minutes. Older age and limited years of education correlated with a poorer performance on the Stroop test (r =0.62, p<0.0001) and r = 0.322, p< 0.0001, respectively. However, neither age nor years of education correlated with performance on the PHES (r = 0.087, r = 0.12, respectively).
Multispecies Probiotic Enriches the Microbiome with Lactobacillus and Lactococcus and Reduces Enterococcus Abundance in Patients with Cirrhosis: Results of a Randomized, Double-Blind, Placebo-Controlled Trial

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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 Ecobicrur Barier (Winclove, Amsterdam, The Netherlands)/Omniibiotic 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 analysed 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 analysed 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.

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

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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 Ecobicrur Barier (Winclove, Amsterdam, The Netherlands)/Omniibiotic 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 analysed 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 analysed 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

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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 cirrhosis due to non-alcoholic steatohepatitis (NASH) (P < 0.001). Portal vein thrombosis (PVT) was significantly higher among 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 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 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 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).
Without diabetes 90.6%
with and without DM

Table: Post-transplant survival at 6 months, 1 year and 4 years in patients with and without DM

<table>
<thead>
<tr>
<th></th>
<th>6 month survival</th>
<th>1 year survival</th>
<th>4 year survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>With diabetes</td>
<td>81% ± 2.5%</td>
<td>79.1% ± 2.6%</td>
<td>75.9% ± 2.8%</td>
</tr>
<tr>
<td>Without diabetes</td>
<td>90.6% ± 1.1%</td>
<td>87.8% ± 1.2%</td>
<td>85.4% ± 1.3%</td>
</tr>
</tbody>
</table>

Conclusion: Diabetes mellitus is prevalent in patients with liver cirrhosis especially among those with NASH. Patients with DM may have lower post-transplant survival and need more intense follow-up.

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

References

P1340 VALIDATION OF THE BAVENO VI CRITERIA ON A COHORT OF CIRRHOTIC PATIENTS
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Introduction: The Baveno VI guidelines propose that cirrhotic patients with a liver stiffness measurement (LS) < 20 kPa and a platelet count > 150,000/L can avoid screening endoscopy as their combination is highly specific for excluding clinically significant varices.

Aims & Methods: The aim of the study was to validate the Baveno VI criteria.

We did a retrospective study, from 2009–2014. We took all the patients with transient elastography data. Inclusion criteria were a LS < 12 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of chronic liver disease. Varices were graded as low risk (grade < 2) or high risk (grade ≥ 2).

Results: The study included 774 patients (hepatitis C virus 40.5%, hepatitis B virus 16.1%, 31.6% etanolics, 11.8% other etiology, and 47.5% were Child Pugh C). We represent in 361/774 (24.4%) of patients a high risk varices. 306/774 (39.6%) at low risk and 468/774 (60.4%) had high risk varices. 59/774 (7.6%) met the Baveno VI criteria. The Baveno VI criteria gave a Se = 62.2%, Sp = 80.6%, NPV = 44.6%, PPV = 89.5%, positive likelihood ratio = 3.4, negative likelihood ratio = 0.47. If we combined the LS < 20 kPa and platelet count > 150,000, the AUROC was 0.73, CI (0.68-0.74), p < 0.0001. Using an ICD-9 code indicating ALI we included. The primary outcome was ALI in patients with a history of bariatric surgery compared to all other patients with an acute liver injury and were included in the study, of which 3,799 had previously undergone bariatric surgery.

Conclusion: The Baveno VI criteria has correctly appoint 85.3% of patients who could safely avoid endoscopy.

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.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Bristol Meyers Squibb.

R. Sirli: 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.

Reference

P1341 MORTALITY PREDICTING MODEL IN LIVER CIRRHOSIS PATIENTS
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Introduction: Cirrhotic patients very often need to be hospitalized and it is known that they have a higher mortality rate than non-cirrhotic patients. In our study, we have evaluated the mortality risk associated with liver cirrhosis and in 5% of cases the etiology was unknown.

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 the final diagnosis of liver cirrhosis for a period of 7 years. We divided them in 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; liver cirrhosis and in 5% of cases the etiology was unknown.

In univariate analysis, hypoalbuminaemia (p < 0.0001), hypertension (p < 0.0001), hyperpotassemia (p < 0.0001), high values of bilirubin (p < 0.0001), high values of creatinin (p < 0.0001) were strongly associated with in hospital mortality. In multivariate analysis, the model including albumin, sodium, potassium, creatinin and bilirubin (all p-values < 0.05) had an AUROC of 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*Creatinin + 0.04*Bilirubin + 0.05 + 0.28*Potassium + 0.04*0.07*Sodium.

Conclusion: Prevention and prompt treatment of kidney injury, hypoalbuminaemia, hyperpotassemia, can improve survival.

Aim of the study was to validate the Baveno VI criteria.

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

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

References
3. Friedel-Rust M, Buggisch P, de Knegt RJ, et al. Acoustic radiation force impulse 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 aminotransferase. 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 during antiviral therapy. Longitudinal monitoring of LS might be a promising non-invasive assessment of fibrosis regression during long-term antiviral therapy in CHB. Further studies on large populations are warranted. Disclosure of Interest: All authors have declared no conflicts of interest.

PI344 CHRONIC HEPATITIS B VIRUS INACTIVE CARRIERS—IMPACT OF METABOLIC DISORDERS IN STEATOSIS ASSESSED BY FIBROSCAN
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Introduction: In chronic infection 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) and transient elastography with fibroscan. We also aimed to identify hepatic steatosis and their impact in the values of fibrosis determined with fibroscan.
Aims & Methods: Fibroscan was performed in chronic HBV inactive carriers, assessment of hepatic transient elastography and CAP, with simultaneous assessment of anthropometric, clinical and analytical parameters. CAP values of 248.28 and 280 dB/m defined 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 the CAP and the presence of steatosis in the last ultrasound (248.9 ±46.9 dB/m vs p < 0.01), the presence of steatosis at CAP >268 dB/m (p < 0.01). The percentage of patients with values of triglycerides (239.9 ±49.3 dB/m vs 284.1 ±28.1 dB/m, p = 0.01) and obesity (240.0 ±46.7 dB/m vs 290.7 ±46.6 dB/m, p = 0.01). When comparing patients with CAP > 268 dB/m, patients with higher CAP values more frequently were overweight (BMI >25 kg/m²) (45.8% vs 84.0%, p < 0.01) and had metabolic syndrome (MS) (12.5% vs 40%, p < 0.01), and also presented with higher values of BMI (24.6 ±2.6 kg/m² vs 29.2 ±6.4 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 ±1.3KPa, 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 interplay of fibrosis values fibrosis should be made with caution since it may be influenced by metabolic parameters. Disclosure of Interest: All authors have declared no conflicts of interest.

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

References
Aims & Methods:

Introduction:
Serum HBsAg loss is the recommended stopping rule in nucleo(t)ase therapy from 3471 IU/ml at the baseline to 1758 IU/ml at the last determination four weeks after each FMT. Fecal samples of CHB patients before (Baseline) and after FMT as well as donors were collected for analyses of gut microbiota by sequencing 16S V3-V4 regions on Illumina MiSeq using PE 250 reagents.

Results: Results showed that HBsAg of 13 patients (65%) was cleared or reduced after one to seven times of FMT. Based on OTUs at cutoff of 3% dissimilarity, there were significant (PERMANOVA, P = 0.001) differences in overall gut bacterial communities among CHB-FMT, CHB-NT, and NA monotherapy groups with three major clusters in PCA ordination. Whereas, no significant differences (ANOVA, P > 0.05) were detected in α-diversity indexes among the three groups, including observed OTU numbers, Shannon index, Simpson index, and Pielou evenness.

Conclusion: In summary, the clear relationship between expression of HBsAg and the potential application as targets for clinical diagnosis and treatments in future.

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

References

PI347 QUANTIFICATION OF SERUM HBsAG IS A HELPFUL MARKER TO OPTIMIZE THE MANAGEMENT OF ANTIVIRAL NUC THERAPY IN CHRONIC HBsAG-NEGATIVE HEPATITIS B

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Introduction: Serum HBsAg loss is the recommended stopping rule in nucleo(t)ase-analogues (NUC) responders, even if this event occurs rarely.

Aims & Methods: We aimed to investigate in patients with chronic HBsAg+ hepatitis B the rates of HBsAg levels during the NUC therapy to evaluate the predictive parameters of HBsAg seroclearance. Patients with CHB, receiving NUC antiviral therapy with stable viral suppression (HBV DNA < 200 IU/ml), were recruited at the Gastroenterology Unit of the University of Naples."Federico II". Serum samples from these patients were tested for HBsAg quantification with the Elecsys HBsAg II Quant immunoassay (Roche Diagnostics, Indianapolis, USA). HBsAg levels were determined before starting NUC therapy and during treatment every 12 months.

Results: A total of 95 HBsAg-positive, HBsAg-negative patients (M:F: 73:22, median age 50 yrs, 34% cirrhotic) with stable viral suppression by NUCs, were enrolled. Precisely 56 patients underwent to Tenofovir, 22 Entecavir and 17 Lamivudine. The median treatment duration was 111 months, range 25–183 months. There was a significant decrease of the HBsAg levels during NUC therapy to evaluate the kinetics of HBsAg levels during the NUC therapy to evaluate the effectiveness of HBsAg in NA therapy. The efficacy of pegylated interferon α-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 with peg-IFNα-2a monotherapy in treatment-experienced CHB patients.

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 were significantly lower than the baseline (2.96 ± 0.14 vs 2.90 ± 0.82 Log10IU/ml, p = 0.009), but there was no obvious change in NA monotherapy group (3.43 ± 0.46 vs 3.44 ± 0.44 Log10IU/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 (0.78 ± 0.26 vs –0.01 ± 0.10 Log10IU/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%).

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

PI348 IMPROVEMENTS IN GUT MICROBIOTA AFTER FECAL MICROBIOTA TRANSPLANTATION

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Introduction: Chronic hepatitis B (CHB) is a common liver disease worldwide, and can be progressed to liver cirrhosis and hepatocellular carcinoma. Unfortunately, only a minority of CHB patients could achieve the clearance or seroconversion of hepatitis B virus e-antigen (HBsAg), the end point of treatment, even after multiple years of antiviral therapy. Therefore, it is urgent to develop new and effective strategy for treatment of CHB and examine the mechanisms.

Aims & Methods: In this study, we performed 60 times of fecal microbiota transplantation (FMT) by nasointestinal tube for 20 CHB patients who continued previous antiviral treatment, and accordingly measured the HBsAg level four weeks after each FMT. Fecal samples of CHB patients before (Baseline) and after FMT as well as donors were collected for analyses of gut microbiota by sequencing 16S V3-V4 regions on Illumina MiSeq using PE 250 reagents.

Results: Results showed that HBsAg of 13 patients (65%) was cleared or reduced after one to seven times of FMT. Based on OTUs at cutoff of 3% dissimilarity, there were significant (PERMANOVA, P = 0.001) differences in overall gut bacterial communities among CHB-FMT, CHB-NT, and NA monotherapy groups with three major clusters in PCA ordination. Whereas, no significant differences (ANOVA, P > 0.05) were detected in α-diversity indexes among the three groups, including observed OTU numbers, Shannon index, Simpson index, and Pielou evenness.

Conclusion: This implies that it is the taxonomic relative abundance, not taxon number, that contributed to the bacterial community differences. Overall, gut bacteria were mainly composed of Fimbicutes (Lachnospiraceae, Ruminococcaceae, Veillonellaceae), Bacteroidetes (S24-7, bacteroidaceae, Prevotellaceae), and Proteobacteria (Alcaligenaceae, Enterobacteriaceae). More specifically, Actinomycetes was significantly higher in CHB patients (CHB-Baseline) than FMT-treated patients (CHB-FMT) and donors, and was identified as the biomarker of CHB using LEfSe analysis. Conversely, Prevotella and Eubacterium were significantly decreased in CHB-Baseline after FMT to almost equal to the abundances in donors, and were also identified as biomarkers.

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

References
**P1350 HEPATITIS C IN LEBANON: BURDEN OF THE DISEASE AND VALUE OF A COMPREHENSIVE SCREENING AND TREATMENT**

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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.

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), decompensated cirrhosis (DCC), hepatocellular carcinoma (HCC), 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 extracted from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for different 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 numbers of patients experiencing CC, DCC, HCC and LRD in 2036 were 899, 147, 147 and 147 respectively for the 18–39 age groups. In the 40–80 age groups, these projections were substantially greater: 2828 CC, 736 DCC, 665 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 benefit per amount invested, among middle-aged and older adults with a big difference in additional costs between the 2 groups.

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

Reference

**P1352 HEPATITIS C TREATMENT IN RENAL TRANSPLANTATION: THE EFFICACY AND SAFETY OF DIRECT-ACTING ANTVIRALS IN THE REAL LIFE**

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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: F2–63% (12/19), F3–21% (4/19) and F4–16% (3/19). Seven of these patients (85%) were treated with sofosbuvir/daclatasvir (84%) and 24 weeks for others 2 (10%). One patient realized only 21 weeks of treatment, needing to suspend therapy due to severe anemia. Regarding treatment response rates, 74% (14/19) of patients had Rapid Virologic Response (RVR) and 100% (19/19) of patients had End of Treatment Response (ETR). The global sustained virologic response (SVR) rate was 100%. Hemoglobin, eGFR and the immunosuppressive drugs were monitored throughout the treatment. 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 AĐA suspension at week 21 and the other one ribavirin suspension at week 7 of treatment. Immunosuppressive levels remained stable. There were no other serious adverse reactions.

Conclusion: In our sample of HCV-infected with kidney transplant, DAA are safe and well 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**

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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 birentic clinical...
trial included 276 patients with compensated HCV cirrhosis (all genotype 1b), with a mean follow up of 24 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) for liver stiffness measurements (LSM) 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 Tschosnitz meta-analysis. We considered a decrease or increase of more than 10% in LSM as being significant.

Results: Out of 276 subjects, reliable measurements were obtained in 92.7%, so that the final analysis included 256 patients. The mean LS values decreased significantly after DAA: 25.6±11.4 kPa vs. 22.3±12. kPa (p=0.009). Most patients (59.7%-152/256) presented more than 10% decrease in LS values, 23% (59/256) had stable LS values, while in 17.3% (45/256) 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 at EOT compared to baseline: 20.3±10.8 kPa vs. 25.6±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=0.05 and 18.3±6.6 kPa vs. 21.6±7.7 kPa, p=0.01).

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. H. Stefanescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva, R. Siri: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric.

Other authors have declared no conflicts of interest.
Conclusion: MCP-1 concentrations in serum depend on overweight in patients with CHC. Overweight and insulin resistance are associated with progression of CHC. Serum levels of MCP-1 increase after HCV clearance. Fluctuation of the MCP-1 concentration in serum could reflect an antiinflammatory activation of MPS and a gradient dependent dynamic replacement of the proinflammatory cell subsets with the resolution ones after SVR. Fatty liver plays a role for inflammatory responses in CHC patients after SVR.

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

Reference

P1356 HLA –A02, HLA- A03 AND HLA-B15: A NEW RISK FOR HEPATIC STEATOSIS IN EGYPtIAN CHRONIC HEPATITIS C PATIENTS

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Introduction: HCV interferes with the host lipid metabolism leading to insulin resistance and hepatic steatosis. Although it is usually mild in genotype 4, meaningful simple steatosis has been reported to be more severe and 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 hepatitis C 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 hepatitis C 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 microlymphotocytotoxicity.

Results: The frequency of A02, A03, B15 and B17 alleles were significantly higher in chronic hepatitis C 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, 1.12–36.85 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: 0.78; 1.37; 2.41) 95% CI = 1.09–4.42, 1.04–11.50, 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 = 0.56, 0.41) and 95% CI = 0.30–1.05, 0.20–0.83 and P = 0.015 and 0.005.

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

P1357 THE VALUE OF 2D-SWE.GE FOR THE EVALUATION OF LIVER FIBROSIS IN PATIENTS WITH HCV COMPENSATED CHRONIC HEPATOPATHIES

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Introduction: Chronic liver diseases are quite frequently encountered in daily practice and are due mainly to chronic viral infections (B or C viruses) and to other conditions such as alcoholic steatohepatitis - (ASH) and to non-alcoholic fatty liver disease (NAFLD). While liver biopsy remains the gold standard method for fibrosis assessment, stage classification and also for necro-inflammation grading, in the last years, non-invasive assessment methods (biological tests and elastographic methods) were developed and they are being used more and more, to the detriment of liver biopsy.

Aims & Methods: The aim of this study was to evaluate the performance of the 2D shear wave elastography technique from General Electric (2D-SWE.GE), for the evaluation of liver fibrosis in patients with HCV compensated chronic hepatopathies, using Transient Elastography (TE) as the reference method. The study included 145 consecutive subjects with HCV compensated chronic hepatopathies, in whom liver stiffness was evaluated in the same session by means of 2 elastographic measurements: TE (FibroScan EchoSens) and 2D-SWEGE (LOGIQ E9, GE Healthcare). Reliable LS measurements were defined as follows: for TE—the median value of 10 measurements with a success rate of ≥60% and an interquartile range <30% and for 2D-SWEGE - the median value of 10 measurements acquired in a homogeneous area and an interquartile range (IQR) <30%. To discriminate between various stages of fibrosis by TE we used the following cut-offs: F2 = 2.7 kPa, F3 = 3.9 kPa, F4 = 12.5 kPa [1].

Results: Reliable LS measurements were obtained in 138/145 (95.1%) subjects by both methods and in 139/145 (95.8%) subjects by TE. The final analysis was performed on 134 subjects with valid measurements by both methods. We found a good positive correlation between the LS values obtained by the 2 methods: r = 0.79, p < 0.0001. Based on TE cut-off values [1] we divided our cohort into 4 groups: F0-F1: 36/134 (26.8%), F2–F3/134 (17.2%), F3: 23/134 (17.2%) and F4: 52/134 (38.8%). The areas under the receiver operating characteristic curve (AUROC) were 0.909 for significant fibrosis (F ≥ 2), 0.954 for severe fibrosis (F ≥ 3) and 0.942 for cirrhosis (F = 4). The best cut-off values for F ≥ 2 was 7 kPa (Sensitivity 85.7, Specificity 80.5), for F ≥ 3 it was 9.2 kPa (Sensitivity 85.3, Specificity 91.5) and for F = 4 it was 10.7 kPa (Sensitivity 84.6, Specificity 91.4).

Conclusion: 2D-SWEGE seems a reliable method for liver fibrosis staging in patients with HCV compensated chronic hepatopathies. The best 2D-SWEGE cut-off values for F ≥ 2, F ≥ 3 and F=4 in HCV chronic hepatopathies were 7, 9.2 and 10.7 kPa.

Disclosure of Interest: 1 Sporea: I hereby confirm that I have received financial support (conference 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 (conference travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva R. Sirili: I hereby confirm that I have received financial support (conference travel grant or speaker fee) from Philips, Abbvie, Zentiva All other authors have declared no conflicts of interest.

Reference

P1358 DE NOVO HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CIRRHOSIS AFTER TREATMENT WITH DIRECT ANTIVIRAL AGENTS

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Introduction: The risk of developing novo hepatocellular carcinoma (HCC) persists after achieving 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 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.
patients (AST $p<0.001$; ALT $p<0.001$). Cell death markers and the MELD score were also found for liver enzymes, which were significantly lower in AOCLF patients compared to ALF. Thus, patients admitted to liver transplantation centers with the diagnosis of ALF might be suffering from AOCLF instead. It is also unclear if the ALF and AOCLF have different impact on disease course, clinical management and transplant organ allocation.

Aims & Methods: Aim of this study was to identify possible differences between patients with ALF and AOCLF regarding routine parameters and clinical course. In this retrospective single-center study all patients were recruited, who were admitted to the University Hospital of Essen with the initial diagnosis of ALF between 2008 and 2015. Patients included in this study were fulfilling the criteria of the acute liver failure study group Germany. The diagnosis of AOCLF was established using retrospective examination of patient records. In total 131 patients were recruited (ALF: 131; AOCLF: 32). Clinical records, in particular demographic data, serum parameters and outcome were analyzed for differences between ALF and AOCLF.

Results: Patients with AOCLF were significantly older (50.3 ± 15.1 vs. 39.8 ± 16.2, $p = 0.0008$), had a higher BMI (25.7 ± 5.1 vs. 24.5 ± 6.2, $p = 0.0014$) and were more often male (65% in AOCLF vs. 34% in ALF, $p = 0.0008$). In addition, the results that caused the liver failure in AOCLF were significantly different from those patients with ALF. Significant differences were also found for liver enzymes, which were significantly lower in AOCLF patients (AST $p = 0.01$; ALT $p = 0.001$). Cell death markers and the MELD score did not differ between ALF and AOCLF. Moreover, the outcome was not different neither as survived or deceased nor as spontaneous remission or non-spontaneous remission (combined transplantation and deceased). Importantly, MELD and the modified MELD including the cell death marker M65 were similarly effective in predicting outcome for both ALF and AOCLF.

Conclusion: In the present study patients with ALF and AOCLF differed in age and BMI, but did not exhibit differences regarding disease severity (according to MELD) or clinical outcome. While the causes for an acute insult differed between ALF and AOCLF, which might imply a different clinical management, clinical outcome was predictable by common factors for ALF.

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

References:

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 & Methods: The aim was to assess the importance of Quantiferon TB Gold test for evaluating patients included on the wait list for LT in Romanian setting. 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 diagnosis was 47.78 ± 9.92 years. The etiology of liver cirrhosis was HCV infection in 31.43%, HBV and HBV-HDV coinfection in 45.99%, and alcoholic liver cirrhosis in 18.34%; 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 4 patients (5.3%) were skin tested using PPD, 2 (0.75%) of them with positive results. Comparing the subgroups, positive Quantiferon test was associated with HCV etiology (p value $= 0.084$) and lower lymphocyte counts, but did not achieve statistical significance (p = 0.187). Patients with indeterminate Quantiferon associated with hyperbilirubinemia (p = 0.044), hypoalbuminemia (p = 0.032) and a higher MELD score (p = 0.040), assessment by a multidisciplinary team that included a pneumologist, 38.63% 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 and reactivation of the disease. Discourse of Interest: All authors have declared no conflicts of interest.
**P3162**  A NATIONAL STUDY OF CANCER DIAGNOSES IN IRISH LIVER TRANSPLANT RECIPIENTS WITH PRIMARY SCLEROSING CHOLANGITIS

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**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 30/9/2014. 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. Previous studies have reported rates of 1–3% in adult OLT pts. 5 pts were diagnosed with lymphoma post OLT representing 4.7% of cohort. Median time to diagnosis was 5.3 yrs [IQR 2.8–10.2]. Regarding CRC, 2 patients developed CRC post OLT. 4 patients (3.7%) developed colon and 36.57% had significant co-existing inflammation. All those who developed colon dysplasia/CRC post OLT had co-existing IBD. All 5 colectomy. All those who developed colon dysplasia/CRC showed significant co-existing inflammation. One patient post OLT underwent a completion proctectomy for rectal cancer. As expected, cholangiocarcinoma as indication for OLT (p = 0.005). RR 2.573, 95%CI (1.3–4.95) and an older age at transplant (p = 0.05, RR 1.027, 95% CI 1.015–1.054) were associated with higher mortality.

<table>
<thead>
<tr>
<th>Cancer</th>
<th>SIR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any cancer</td>
<td>3.239</td>
<td>1.885–5.186</td>
</tr>
<tr>
<td>Excluding skin cancer</td>
<td>1.97</td>
<td>0.848–3.882</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>36.574</td>
<td>14.65–75.36</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>1.779</td>
<td>0.023–9.889</td>
</tr>
</tbody>
</table>

**Conclusion:** These findings represent 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 the normal population, and slight 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 colon neoplasia after OLT and require intensive surveillance.

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

**P3163**  OUTCOME OF LIVER TRANSPLANTATION FOR PRIMARY SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR MISMATCH: SINGLE CENTRE EXPERIENCE

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**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 patients 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 patients with either single, double, or double mismatch in HLA-DR. Immunology data were analysed with χ2 and Fisher’s exact test using MedCalc statistical software. A p-value < 0.05 was considered as statistically significant.

**Results:** Out of 57 patients, 27 (47.4%) had single mismatch (“M1” group) and 30 (52.6%) had double mismatches (“M2” group) in HLA-DR. No patient had full mismatch on acute cellular rejection (ACR), PSC recurrence (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. Supported by Ministry of Health of the Czech Republic, grant nr. 15-28064A. All rights reserved.

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

**P3164**  GRAFT DYSFUNCTION IN POST-LIVER TRANSPLANTATION: UTILITY OF TRANSIENT ELASTOGRAPHY BY FIBROSCAN®

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**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 de-novo fibrosis by using liver biopsies. As this was a retrospective cohort study of total of 49 patients with post-liver transplantation status who underwent liver transient elastography 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 ≥2D. Demographic, analytical and associated liver transplantation variables were evaluated.

**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 median 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 = 0.117) or inflammation (kappa = 0.663; 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 (S = 81.8%; Sp = 76.2%). In relation to analytical parameters, only serum albumin was predictive of histological fibrosis (OR = 2.79; p = 0.043).

**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): DECISION MAKING, RISK ANALYSIS AND IMPACT ON SURVIVAL NEW-ONSET DIABETES AFTER TRANSPLANT (NODAT): INCIDENCE, RISK ANALYSIS AND IMPACT ON SURVIVAL

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Introduction: Orthotopic liver transplant has become the standard of care for end-stage liver disease and hepatocellular cancer. Better immunosuppressant 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 Glyceremia (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 2002/9 till 2014/16. Data was collected from records. Simple means and standard deviation was 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, Post-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

P1367 OUTCOMES OF LIVER TRANSPLANTATION IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction: Hepatocellular carcinoma (HCC) is the second leading cause of cancer-related mortality worldwide. Patients with viral hepatitis and those with non-alcoholic fatty liver disease (NAFLD) are especially susceptible to HCC. Parallel to an increase in prevalence of NAFLD, the prevalence of HCC is estimated to be increased in next years. Liver transplantation is now considered as a modality of treatment for patients with HCC.

Aims & Methods: This study aimed to investigate outcomes of liver transplantation in patients with HCC compared to other causes of liver transplantation. In a cross-sectional study patients who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Patients’ characteristics including age, gender, model for end stage liver disease (MELD) score, Laboratory indices, complications, disease severity and mortality of patients were recorded. Characteristics of tumor including size, number and vascular invasion were recorded. Based on these findings HCC patients were divided to those within Milan criteria and those beyond Milan criteria. The impact of HCC on post-transplant outcomes was investigated using student t-test and chi-square tests. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation.

Results: Totally 1014 liver transplant patients were included. 94 patients with HCC underwent liver transplantation. There was no statistically significant difference between those with and without HCC in terms of gender, portal vein thrombosis (PVT), diabetes mellitus (DM), hepatic encephalopathy and hospitalization before liver transplantation (P > 0.05). HCC was significantly more prevalent in cirrhosis due to viral hepatitis (P < 0.001). Acute rejection episodes was not different in patients with and without HCC in early post-transplant period (OR = 0.563; 95% CI: 0.27–1.14; P = 0.098). In regression analysis, presence of pre-transplant DM (OR = 3.89; 95% CI: 1.36–11.11; P = 0.011) and acute kidney injury within 30 days after liver transplant (OR =4.38; 95% CI: 1.44–1327; P=0.009) were independent predictors of post-transplant mortality. Mean post-liver transplantation survival in HCC patients within Milan criteria was 40.48 ± 3.69 months compared to 36.80 ± 6.28 months in those beyond Milan criteria (P = 0.82). Mean post-transplant survival in patients with HCC + DM was 32.75 ± 4.7 months compared to 48.51 ± 2.6 months in HCC patients without DM (P = 0.009)

Conclusion: Liver transplantation can be used for patients with HCC, however, post-transplant survival seems to be lower. Diabetes mellitus and acute kidney injury were predictors of mortality among our patients with HCC after liver transplantation.

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

References
P1368 THE ASSESSMENT OF THE ADC PREDICTIVE VALUE IN SURVIVAL OUTCOMES OF PATIENTS UNDERGOING RADIOFREQUENCY ABLATION FOR METASTATIC COLORECTAL CANCER LIVER TUMORS
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Introduction: Liver is one of the most common metastatic sites of colorectal cancer, nearly 50% patients develop hepatic metastases during the course of their disease. Metastatic spread influences survival rate of those patients. The diffusion weighted imaging (DWI) is MRI sequence designed to detect random movement of water protons in extracellular compartment. Biophysical parameter expressed as ADC represent a ratio between diffusion coefficient of water molecules (ADC) and ADC values for b parameter lower than 300/mm² are influenced by perfusion whereas ADC values for b greater than 300/mm² depend mainly on diffusion. Aggressive malignant process often develops necrotic areas within neoplastic lesion. Necrotic changes are characterized by high ADC values. We suspect that low ADC values correlate with presence of necrosis in highly malignant lesions effecting in lower survival rate.

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/mm², ADC maps were calculated for b values of 015 and 0500/mm². The mean ADC value was obtained by threefold marking ROI covering the whole metastatic lesion. In cases of multiple focal only the lesion with the highest ADC value was included in analysis. On basis of ROC analysis the cut-off values of ADC were established: 2.49 mm²/s for b value of 015 s/mm² and 1.43 mm²/s for b value of 0500/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 16 censored cases (17.3%). In ADC maps for b value of 0500/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 = 2.698%, p = 0.007. Such a correlation was not observed for ADC values in ADC maps for b value of 015/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:

P1370 LEARNING CURVE EVALUATION USING ELASTPQ
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Introduction: Nowadays liver fibrosis can be assessed using non-invasive elastographic techniques. ElastPQ is a quite novel point share wave elastography integrated in an ultrasound system.

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 deviation of measurements performed in a homogeneous area avoiding blood 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±2.1 kPa vs 6.5±4.2 kPa, p = 0.03).

Conclusion: Obtaining reliable LSM using ElastPQ can be easily achieved after 30 LS examinations.

Disclosure of Interest: R. Mare: 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 grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva
R. Siri: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, AstraZeneca
All other authors have declared no conflicts of interest.

Results: According to reference method, the 298 lesions were classified as follows: 272 invasive HCC, 60 non-HCC-malignant lesions (fatty infiltration, hemangiomata, simple cysts, regenerative nodules) and 27 non-HCC-malignant lesions (liver metatases, cholangiocarcinoma, indeterminate). The diagnostic accuracy of ACR CEUS LI-RADSv 2016 for the diagnosis of hepatocellular carcinoma was 74.8% Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 65.4%, 96.5%, 97.8% and 53.5%, respectively. When we used CEUS alone, a conclusive diagnosis of HCC was obtained in 69.6% of the cases (147/211), while using the algorithm in 65.4% of all HCCs (138/211), p = 0.35.

Conclusion: In our study 65.4% of all HCCs (138/211) were correctly diagnosed using ACR CEUS LI-RADSv 2016 algorithm, showing good sensitivity, excellent specificity and PPV for the diagnosis of HCC.

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All other authors have declared no conflicts of interest.

P1373 DICKKOPF-1: AS A SERUM BIOMARKER FOR PREDICTION OF HEPATOCELLULAR CARCINOMA TREATMENT RESPONSE A. L. Sharaf1, E. G. El-Badrawy2, N. A. Khalifa1
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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 rate of HCC. 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 assess 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 ethanom injection. Clinical assessment, routine laboratory evaluation, CT studies and measurement of serum alpha-fetoprotein (AFP) and DKK1 were performed to follow up of HCC patients before and 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 GENETIC POLYMORPHISMS ON SURVIVAL IN PATIENTS WITH HEPATITIS B VIRUS-ASSOCIATED HEPATOCELLULAR CARCINOMA J. Cheong
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Introduction: Fibroblast growth factor (FGF), vascular endothelial growth factor, and hepatocyte growth factor play a critical role in the pathogenesis of hepatocellular carcinoma (HCC). Hence, we aimed to investigate the association of serum alpha-fetoprotein (AFP) and DKK1 were performed to follow up of HCC patients before and after treatment.

Aims & Methods: We determined the association of single nucleotide polymorphisms (SNPs) in FGF2 gene with serum alpha-fetoprotein levels and the development and progression of tumors and overall survival in patients with hepatitis B virus (HBV)-associated HCC. We assessed nine SNPs in the FGF1, FGF2, FGF receptor (FGFR)-2, FGF, and e-MET genes in 245 HCC patients and 483 chronic HBV carriers without HCC.

Results: None of the SNPs was associated with the risk of HCC development in HBV carriers. The rs308379 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The FGF1 rs4771249 C allele was associated with low alpha-fetoprotein levels. Kaplan-Meier analysis showed that the patients with the FGF2 rs308447 TT genotype had lower survival rates than the patients with the CC or CT genotype (P = 0.016) and that the FGF2 rs308579 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 rs308579 A allele (hazard ratio = 1.663, P = 0.004) and advanced stage tumor (hazard ratio = 3.430, P = 0.001) were independent prognostic factors for overall survival rates in patients with HCC.

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

P1372 DIAGNOSTIC ACCURACY OF CONTRAST-ENHANCED ULTRASOUND ALGORITHM (ACR CEUS LI-RADSv 2016) FOR THE DIAGNOSIS OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC LIVER DISEASE A. Stepan1, M. Danila1, R. Siri1, S.A. Popescu, T.V. Mogu1, C. S. Ivascu, C. Ghene1, I. M. Biri1
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Introduction: Contrast-Enhanced Ultrasound (CEUS) is an imaging method that can be used to discriminate between hepatocellular carcinoma (HCC) and other focal liver lesions. The aim of this study was to test the latest approved version of a contrast-enhanced ultrasound algorithm (ACR CEUS LI-RADSv 2016) for detecting hepatocellular carcinoma (HCC), in a real-life cohort of high-risk patients. In the CEUS studies, 6 patients with liver lesions in patients at high-risk for HCC (liver cirrhosis of any etiology, chronic hepatitis B or C, with severe fibrosis, current or prior HCC) using the ACR CEUS LI-RADSv 2016 algorithm. CEUS LI-RADS categories used for the diagnosis of HCC were: CEUS LR-S (definitely HCC), CEUS LR-5 (HCC with macrovascular invasion), CEUS LR-Tr (treated HCC). Contrast-enhanced CT, contrast-enhanced MRI or histology were used as reference methods to evaluate the CEUS LI-RADS classification of the 298 lesions.

Results: Results of the 298 lesions were classified as follows: 272 invasive HCC, 60 non-HCC-malignant lesions (fatty infiltration, hemangiomata, simple cysts, regenerative nodules) and 27 non-HCC-malignant lesions (liver metatases, cholangiocarcinoma, indeterminate). The diagnostic accuracy of ACR CEUS LI-RADSv 2016 for the diagnosis of hepatocellular carcinoma was 74.8% Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 65.4%, 96.5%, 97.8% and 53.5%, respectively. When we used CEUS alone, a conclusive diagnosis of HCC was obtained in 69.6% of the cases (147/211), while using the algorithm in 65.4% of all HCCs (138/211), P = 0.35.

Conclusion: In our study 65.4% of all HCCs (138/211) were correctly diagnosed using ACR CEUS LI-RADSv 2016 algorithm, showing good sensitivity, excellent specificity and PPV for the diagnosis of HCC.

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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
All other authors have declared no conflicts of interest.

This study aimed to test the latest approved version of a contrast-enhanced ultrasound algorithm (ACR CEUS LI-RADSv 2016) for detecting hepatocellular carcinoma (HCC), in a real-life cohort of high-risk patients. The CEUS studies consisted of 6 patients with liver lesions in patients at high-risk for HCC (liver cirrhosis of any etiology, chronic hepatitis B or C, with severe fibrosis, current or prior HCC) using the ACR CEUS LI-RADSv 2016 algorithm. CEUS LI-RADS categories used for the diagnosis of HCC were: CEUS LR-S (definitely HCC), CEUS LR-5 (HCC with macrovascular invasion), CEUS LR-Tr (treated HCC). Contrast-enhanced CT, contrast-enhanced MRI or histology were used as reference methods to evaluate the CEUS LI-RADS classification of the 298 lesions.
Conclusion: These observations suggest that the SNPs of the FGF2 and FGFR2 genes can be potential prognostic indicators in patients with HBV-associated HCC.

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

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P1375 EXTRAHEPATIC HEPATOCELLULAR CARCINOMA METASTASIS: IMPORTANCE OF AN EARLY DIAGNOSIS AND TAIRED TARGETED THERAPY
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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 extra-
hepatic 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 metastases 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 most 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% started sorafenib and 55% were referred for supportive therapy.
Seven patients performed metastasis targeted treatment, namely 3 patients under-
went 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 scintigra-
ty, 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
1. European Association for the Study of the Liver, European Organization for

P1376 MANAGEMENT OF INTERMEDIATE STAGE HEPATOCELLULAR CARCINOMA
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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
direct-acting antiviral agents was compared between TACE and intermediate
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 untreated 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, B2, B3, B4). 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 all 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
and found to be significant on univariate analysis were simple gross classification
(classification using nodular type) and number of tumor. Tumor diameter was
not associated with the response.

Conclusion: For the treatment of intermediate stage of HCC, although DEB-
TACE is considered to be most effective in B1 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 in
B2+B3 group.

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
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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 recur-

ence 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
treatment. The efficacy of HCC therapy was evaluated according to mRecist cri-
terion on CT or MRI. Radiological evaluation was carried out within 30 days from
the start of therapy. All patients underwent DAAs therapy, selected on an indi-

vidual 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 36–85). The median follow-up was 12 months after the beginning of treat-

ment (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 pre-

vious 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 METASTASIS IN PRIMARY LIVER CANCER: A SEER-BASED STUDY
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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
hepaticocellular carcinoma (HCC) or intrahepatic cholangiocarcinoma (ICC), while combined hepatic cellular 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 preferentially metastasizes to the portal vein and extrahepatic metastasis with invasion of 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 metastases.

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.

Conclusion: 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

P1379 TIME-DEPENDENT EFFECT OF ALEA-FETOPROTEIN AND DISEASE CONTROL ON PATIENTS’ SURVIVAL IN BCLC C STAGE HEPATOCELULAR CARCINOMA
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Introduction: BCLC-C stage hepatocellular carcinoma (HCC) includes a wide spectrum of tumor and patients’ characteristics. Refining prognosis according to prognostic factors may allow the selection of those subjects who could benefit of curative treatments.

Aims & Methods: The aim of this study was to investigate the prognostic factors of BCLC-C stage HCC patients in a real-life setting. Consecutive caucasian cirrhotic patients with BCLC-C stage HCC were included in the analysis. Pre-treatment (Child-Pugh score, performance status (PS), number and maximum size of lesions, vascular invasion, metastases, the combination of vascular invasion and extrahepatic spread, alpha-fetoprotein (AFP) levels, NIACE score) and post-treatment (the number of treatments after the progression to BCLC-C stage and disease control (DC) considering stable + partial + complete response as the best treatment outcome) variables were considered as prognostic factors. The analysis was univariate and multivariate.

Results: 116 patients were included in the analysis. After a median follow-up of 22.9 mo (95% CI 17.3–38.1), the cumulative median survival of the overall population was 13.4 mo (95% CI 10.6–17). At the univariate analysis, tumor size, vascular invasion or without extrahepatic spread, and AFP > 200 as pre-treatment factors and DC as post-treatment variable were associated with survival. Multivariable Cox regression revealed that the only independent predictors of mortality were AFP > 200 (HR 2.2, 95% CI 1.27–3.8, p = 0.004) and DC (HR 0.12, 95% CI 0.04–0.4, p = 0.008). However, the influence of these factors was not homogeneous during time. Indeed, in the early and intermediate period AFP > 200 was an independent predictor of worse outcome (at 6 mo: HR 16.602, 95% CI 1.97–139.5, p = 0.009; at 1 yr: HR 3.069, 95% CI 1.07–8.76, p = 0.036). As expected, in the multivariable post-treatment prognostic model DC was associated with a better mid- and long-term survival (at 1 yr: HR 0.245, 95% CI 0.06–0.87, p = 0.030; at 2 yrs: HR 0.356, 95% CI 0.12–1.03; p = 0.05; at 3 yrs: HR 0.094, 95% CI 0.02–0.3; p = 0.00001).

Conclusion: In patients with BCLC C HCC, AFP > 200 ng/mL is a strong prognostic factor in the early and intermediate period, while DC is associated with long-term patients’ survival.

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

P1381 INTRAHEPATIC PORTAL HYPERTENSION WITHOUT CIRRHOSIS: EXPERIENCE OF A MORROCCAN UNIVERSITY CENTER (33 CASES)
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Introduction: Non-cirrhotic intrahepatic portal hypertension is defined as a portal hypertension (PH) without cirrhosis in liver biopsy and without an obstruction of the portal and the hepatic veins.

Aims & Methods: This is a retrospective study conducted on the last 19 years in “Sultan Moulay Ismail” private hospital in Rabat, 33 non-cirrhotic patients with intrahepatic portal hypertension were analyzed. We medical data of all patients with hypertension portal without cirrhosis in liver biopsy and without an obstruction of the portal and the hepatic veins.

Results: 33 patients were included in this study. 22 were women. Mean age was 34 years old (18-70). The PH has been revealed by a digestive bleeding in 10 cases (30%) and ascits in 7 cases (21.2%). Clinical examination found a splenomegaly in (75.7%). Abdominal ultrasonography combined with Doppler showed signs of PH in all patients and confirmed the absence of obstacle on or above the liver. Upper gastrointestinal endoscopy found esophageal varices in 26 cases (78.7%). Transparietal liver biopsy was performed in 29 cases (87.9%).Various etiologies were identified; in 21.2% (7 cases), intrahepatic PH was due to liver tumors and without an obstruction of the portal and the hepatic veins.

Conclusion: Diffrent clinical features and prognosis of this rare pathology were compared with cirrhosis PH and others causes of PH. The PH non-cirrhotic is well known in the western countries and less in Africa.

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

P1382 CONSERVATIVE MANAGEMENT OF EXTERNAL BILIARY FISTULAS COMPLICATING SURGERY OF HYDATID CYST OF THE LIVER
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Introduction: Surgical treatment is nowadays the only curative treatment of hydatid cyst of the liver. Surgical approach exposes to many complications especially biliary fistulas. Many modalities are described for the treatment of these complications.

Aims & Methods: A retrospective study including 250 patients who underwent a surgical treatment for a hydatid cyst of the liver between 2007 and 2015. The aim of this study is to evaluate the place of conservative management and his benefits and risks related to the biliary fistulas.

Results: Conservative surgical treatment of hydatid cyst was done in 180 cases and radical surgery in 70 cases. A complication occurred in 66 cases. An external biliary fistula occurs in 45 cases (18%). Management of all this biliary fistulas was conservative and a staged drainage of the residual cavity and elevation of the drainage. No majoronic and electrolyte troubles were observed. The fistula healed in 44 of patients with a median time of 4 weeks [range, 1-7]. In one case endoscopic treatment was necessary to heal fistulas. The median hospital stay was 15 days [range 12-60] when biliary fistulas occurred compared to 8 days [6-15] when there is no biliary complications.
PH1383  THE EVOLUTION OF ESOPHAGEAL VARIICES IN NON CIRRHOTIC PORTAL HYPERTENSION CAUSED BY PORTAL VEIN THROMBOSIS  
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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.  

Aims & Methods: The aim of this study is to specify the evolution of esophageal varices and thus risk of rebleeding in patients with PHT by PVT unrelated to cirrhosis. It is a retrospective study from January 2016 to February 2017, including 101 patients followed for PHT by PVT without liver disease in the department of hepatogastroenterology (medicine C) at Ibn Sina University hospital of 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 0.4. Five percent of patients had a splenectomy for undetermined reasons before the diagnosis of PHT. Concerning the etiology, 10.9% (n = 11) were hospitalized for melena, 60.4% (n = 61) for hematemesis and melana and 28.7% (n = 29) for non-specific abdominal pain. Clinical examination was normal in 10.9% (n = 11), showed an asites in 11.9% (n = 12), and signs of PHT such as splenomegaly and collateral abdomen in 95.1% (n = 98). Complete blood count showed that 16.8% (n = 17) had thrombocytopenia, 12.9% (n = 13) had bictopenia, and 42.6% (n = 43) had pancytopenia. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 30.7% (n = 34), grade I esophagogastritis in 50.5% (n = 54), grade II in 30.7% (n = 34), 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 11.9% (n = 12). We succeeded to the sphincterotomy in 99.9% (n = 15), recurrence in 1% (n = 1). Endoscopy show that 73.6% (n = 76) of patients were treated with Betablockers.  

Conclusion: The evolution of esophageal varices in non-cirrhotic portal hypertension due to PVT seems to be better than in cirrhotic portal hypertension. Indeed, the risk of rebleeding is reduced in these patients.  

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

PH1385  LONG-TERM OUTCOMES OF PATIENTS WITH ACUTE CALCULOUS CHOLECYSTITIS AFTER SUCCESSFUL REMOVAL OF GALLBLADDER STONES WITH PERCUTANEOUS TRANSEPHATIC CHOLANGIOSCOPY: A DECADE EXPERIENCE AT A SINGLE TERTIARY CENTER  
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Introduction: Percutaneous cholecystostomy (PTC) has been an alternative treatment for acute calculous cholecystitis (ACC) for the patients unsuitable for early cholecystectomy. Lithotomy with percutaneous transhepatic biliary cholangioscopy (PTCS) after PCT track maturation is particularly considered for those patients with gallbladder (GB) stones who are poor surgical candidate. We examined the long-term outcomes of 171 patients with ACC treated by PTCS.  

Aims & Methods: This study was a retrospective observational study of 171 consecutive patients who treated with PTCS for ACC in the period from 1 Jan 2005 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 removed gallstone GB stones than in those without complete clearance (10.2%, 16/157 vs 21.4%, 34/157; 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.  

PH1384  EVALUATION OF COMMON BILE DUCT CLEARANCE AFTER ENDOSCOPIC MANAGEMENT OF DIFFICULT BILIARY STONES BY DIRECT PERORAL CHOLANGIOSCOPY: PRELIMINARY RESULTS OF A PILOT STUDY  
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Introduction: Incomplete stones clearance after endoscopic management of difficult biliary stones poses the risk of complications such as cholangitis. Confirmation of complete stones clearance is normally confirmed fluoroscopically using a contrast injection through the biliary tract. If a falsely negative/false positive study is obtained under/over-treatment. Direct peroral cholangioscopy (POC) refers to the use of non-specific endoscopes for the direct visualization of the common bile duct (CBD).  

Aims & Methods: We aimed to evaluate the feasibility and safety of POC to confirm CBD complete clearance after endoscopic treatment of difficult biliary stones. From 1st June 2016 to 30 March 2017 all consecutive patients treated with Dilated assisted stone extraction(DASE) for difficult biliary stones at our institution, underwent POC to verify CBD stones complete clearance. Ultrasonic (5.9 mm diameter) or Slim (8.5 mm diameter) endoscopes (FujiFilm EG 530NW or EG 530FP) or standard gastroscope (9.9 mm diameter) (Olympus GIF-HQ190), under CO2 insufflation, were used by the peroral route for intubating all accessible bile ducts. Technical success rate, procedural time, outcome and side effects of POC were assessed. All adverse events were recorded.  

Results: POC was performed in 26 patients (17F/9M mean age 74.6 years ± 11.9) under propofol sedation (23 patients) or deep sedation (3 patients). Mean CBD size was 15 mm ± 3.65; mean stone diameter (13.5 mm ± 1.70); mean balloon dilation (13.5 mm ± 2.12). Intubation of the papilla and distal biliary duct was successful in 26 (100%) cases (guide-wire assistance in 17 cases, 65.4%). Hepatic hilum was reached in 13/26 (50%) patients with a complete CBD evaluation. Mean investigation time was 6.3 ± 1.5 min (range of 5-9 minutes). POC showed persistent large amount of sludge in 27.7% cases, completely suctioned through the endoscope, and stones in 4 (15.4%) cases with subsequent endoscopic stones removal. In the remaining patients, POC confirmed complete duct clearance. No adverse events occurred.  

Conclusion: CBD complete clearance confirmation using POC is a feasible, quick and safe procedure that can help on clinical decision making (for example obviating the need for possible plastic stent or naso-biliary drainage placement) without substantial increase of time or costs. Our experience, however, is preliminary and further studies should be aimed to confirm the feasibility of the procedure, which could represent the first step for the development of a possible new indication in the setting of difficult biliary stone management.  

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

PH1386  SINGLE DEVICE TECHNIQUE FOR ENDOSCOPIC TREATMENT OF BILE DUCT STONES  
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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy is a well-established standard method for treating bile duct stones (BDS). After cannulation of the common bile duct (CBD), a guidewire is placed into the CBD and a sphincterotome is performed. Subsequently, stone extraction using a balloon or basket catheter is performed. Because of this multi-step process, endoscopic treatment for BDS always comes with a risk of losing CBD cannulation. A combination catheter that combines a sphincterotome and a retrieval balloon in a single instrument can eliminate one step in the procedure and improve bile duct (BD) clearance and may be able to accomplish BD clearance by using only single device. Additionally, a newly developed 0.255 inch guidewire that is, at once, rigid and flexible enables us to inject contrast agent through the Y-connector. Therefore, the combination catheter with a Y-connector and a 0.025 inch guidewire may become a single device that can facilitate complete BDS clearance. Despite its utility, the success rate of bile duct cannulation and cost benefit requires further analysis.  

Aims & Methods: We aimed to evaluate the therapeutic efficacy of a combined catheter as a single device required for BDS clearance. From January 2016 to July 2016, 11 consecutive patients with BDStes ≤ 10 mm in size were enrolled in this study (Stoneome group). In all cases, the combined catheter (Stoneome) was
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 as a 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 982.5s, 645.5s versus 1308s, 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 tool. Therefore, the combined catheter can reduce the procedure time to remove BDSs.

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

Reference

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P1388 DOES FIBRIN GLUE APPLIED ON THE CHOLANGIOTOMY DURING LAPAROSCOPIC COMMON BILE DUCT EXPLORATION REDUCE THE RISK OF BILE LEAKAGE? A RANDOMIZED STUDY

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Introduction: Laparoscopic cholecystectomy as a method of extracting common bile duct stones is a technique with many advantages. One problem, however, is bile duct leakage. To some extent, the leakage may be reduced if the incision is suctioned 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 suctioning.

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 cholangiotomy 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 bilirubin was measured 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 cholangiotomy 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.
Polyposis DNA damage repair gene polymorphisms were screened by PCR-RFLP using DNA samples of the ethni
cally distinct NEI population. Whole blood and surgically ressected tissue sam-
ple of both short and long patch pathway, was down-regulated in majority of
the GBC, CS and CL cases compared to controls; and in GBC cases compared to
CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in
the GBC correlated significantly with the variant hOGG1 genotype (p
0.001). The genetic alterations in hOGG1 and XRCC1 gene were highly pre-
valent in both controls and gall bladder disease cases in NEI population, and was
associated with susceptibility and severity of gall bladder anomalies compared to
cases in controls significantly for hOGG1 locus280 polymorphism in GBC exo
compared to controls [OR = 1.986,p = 0.047]. Differential mRNA expression
profile clearly showed a sharp down-regulation in hOGG1, APE1, pol β and
PARP1 expression in GBC, CL and CS cases compared to controls; and in
GBC compared to CL and CS cases. The mRNA expression XRCC1 expres-
sion was upregulated in both short and long patch pathway, was down-regulated in majority of
the GBC, CS and CL cases compared to controls; and in GBC cases compared to
CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in
the pathogenesis of gall bladder cancer, and to identify how metformin affect molecular mechanisms
of both short and long patch pathway, was down-regulated in majority of
the GBC, CS and CL cases compared to controls; and in GBC cases compared to
CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in
The data indicates an important role of oxidative stress in the patho-
gnosis of gall bladder cancers and progression to GBC in NEI population, which
is due to genetic, expression and epigenetic deregulations in the key genes of the
BER pathway as well as potential therapeutic targets for the disease, and hence holds clinical relevance.

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

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P1392 METFORMIN INDUCES APOPTOSIS AND MODULATES PROLIFERATION IN THE BILE DUCT CANCER CELLS

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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 indu-
cing 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 the mamalian target of rapamycin
(mTOR) by activation of AMPKThr172 - tibosarumel complex 2 (TSC2) pathway, and
hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKα485. 3) Metformin increased expression of caspase 1 receptor (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 effect was impaired by hyperglycemia.

Conclusion: This study shows that metformin has antineoplastic effect in bile duct
cancer, and the effect of metformin is attenuated in the hyperglycemic environment.
In addition, AMPK and IGF-1R play a key role in the proliferation of bile duct
cancer cells, and they are expected to be important targets for future develop-
ment of chemotherapy agents.

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

P1393 DREGULATIONS IN BASE EXCISION REPAIR (BER) PATHWAY AND RESULTING OXIDATIVE STRESS AS KEY MODULATOR OF GALL BLADDER ANOMALIES AND PROGRESSION TO CARCINOGENESIS: A NORTHEAST INDIA BASED STUDY

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Introduction: Molecular pathology of gall bladder anomalies and progression to
carcinoma is still obscure and understudied; but is critically relevant to India
which harbors the highest number of cases globally, and to ethnically distinct NEI population, the disease has been increasing alarmingly.

Aims & Methods: Evaluate the associative role of genetic alteration(s) and pro-
metor hypermethylation of key BER pathway genes in the predisposition to gail
bladder diseases and progression to gall bladder carcinomas (GBC) in the ethn-
ically distinct NEI population. Whole blood and surgically resected tissue sam-
ple were collected from randomly and histopathologically confirmed cases of
GBC (adenocarcinomas, N = 49) along with non-neoplastic control sections, cholecystitis (CL, N = 78) and cholecystolithiasis (CS, N = 56), and bile with blood from voluntary controls (N = 122) with informed consent. The BER pathway
genesis polymorphisms were screened by PCR-RFLP using DNA samples from the enrolled cases and controls. Differential mRNA expression profile of BER short and long patch pathway genes was studied by RT-PCR.

Differential mRNA expression was studied by immunofluorescence microscopy. Estimation of ox-
dative stress in DNA was done using 8-OH-DG EIA kit. The difference in per-
centage promoter methylation of BER pathway genes was analyzed using RT-
PCR and HRM method.

Results: The genetic alterations in hOGG1 and XRCC1 gene were highly pre-
valent in both controls and gall bladder disease cases in NEI population, and was
associated with susceptibility and severity of gall bladder anomalies compared to
cases in controls significantly for hOGG1 locus280 polymorphism in GBC exo
compared to controls [OR = 1.986,p = 0.047]. Differential mRNA expression
profile clearly showed a sharp down-regulation in hOGG1, APE1, pol β and
PARP1 expression in GBC, CL and CS cases compared to controls; and in
GBC compared to CL and CS cases. The mRNA expression XRCC1 expres-
sion was upregulated in both short and long patch pathway, was down-regulated in majority of
the GBC, CS and CL cases compared to controls; and in GBC cases compared to
CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in
the GBC, CS and CL cases compared to controls; and in GBC cases compared to
CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in

Conclusion: The data indicates an important role of oxidative stress in the patho-
gnosis of gall bladder cancers 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.

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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
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N. Das: No conflict of interest to declare
S.N. Kazim: No conflict of interest to declare
treatment. As negative controls, 19 non-GBCa bile juice and 33 non-GBCa tissue samples with mutations of oncogenes in the same way.

Results: The median (range) age was 77 (44–90) years and the male/female ratio was 0.43 (9:21). Six, six, and twelve patients were diagnosed as stage I, II, III, and stage IV, respectively. We set cut-off value at 5% for rare mutation rate because of the results of healthy samples to avoid false positive. Eleven of 20 (55%) tumor tissue samples were positive for mutation. TP53, MET, SMAD4, CTNNB1 and AR were detected in 7/20 (35%), 1/20 (5%), 1/20 (5%), 1/20 (5%), and 1/20 (5%) respectively. In this study, 14 of 30 (46.7%) patients had both tumor tissue samples and bile juice samples. Eight of 14 (57.1%) tumor tissue samples were positive for mutation. In these eight patients, 7 (87.5%) bile juice samples had the same mutation (TP53, ERBB2/3 were detected in 6/8 (75%), 1/8 (12.5%), respectively). On the other hand, bile juice samples of only 6 patients with tumor tissue mutation had no mutation. With regard to focal ablation, 14 of 24 (58.3%) bile juice samples with GBCa were positive for mutations. TP53 mutation, ERBB2/3, KRAS were detected in 11/24 (45.8%), 2/24 (8.3%), 1/24 (4.2%), respectively. Bile juice analysis for mutations indicated that ABLATION CATHETER IN A SWINE MODEL

Introduction: Intraductal radiofrequency ablation (RFA) is a new endoscopic 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 intraductal RFA has not been clearly revealed still.

Aim: To try to make new genetic diagnosis of GBCa.

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

References

P1396 PREDICTIVE MODEL FOR THE NEOPlastic POTENTIAL OF GALLBLADDER POLYPS

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Introduction: While many studies have attempted to define the risk factors for neoplastic potential of gallbladder polyp, precise adaption of the risk factors individually in a real treatment strategy of gallbladder polyp remains elusive. This study evaluated the probability for neoplastic potential of gallbladder polyp using a combination of several risk factors before surgical resection would be useful in patient consultation.

Aims & Methods: This study was designed to provide the statistical predictive model for neoplastic potential of gallbladder polyps. We collected data of patients confirmed as GBP through cholecystectomy at Samsung Medical Center between January 1997 and March 2015. Those with a definite evidence for malignancy, such as adjacent organ invasion, metastasis on preoperative imaging studies, polyp larger than 15 mm, and absence of proper preoperative ultrasonography imaging, were excluded. A total of 1976 patients were enrolled. To make and validate the predictive model, we divided the cohort into the modeling group (n=979) and validation group (n=997). Clinical information, ultrasonographic findings, and blood tests were retrospectively analyzed. A prediction model for the probability of neoplasia was fitted from the training set using the logistic regression method equipped with backward elimination with significance level for removal of P=0.15 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.

Results: Clinical factors of old age, single lesion, sessile shape, and polyp 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 7.4%. The probability of Neoplastic GB polyp p=exp(e)\[p]\(1\)+exp(e)\[p]\(0\) where e=2.7182 is the base of the natural logarithm and P(predictive score) = -7.3633 + 0.0374 x [Age] + 0.6667 x [Number] + 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.

References
Introduction: Digital cholangioscopy provides higher-resolution imaging of the pancreatobiliary tract and accurate diagnostic tests have only recently been consistently reported in literature.

Aims & Methods: Our aim is to assess the incidence of Immunoglobulin G4-associated cholangitis (IAC) in patients resected for presumed perihilar cholangiocarcinoma (PHC). All patients that underwent resection for presumed PHC at our institution between 1984 and 2015 were included. Benign histological specimens were re-evaluated by a pathologist and scored according to the international pathological consensus criteria for IgG4-RD. Patients with benign disease who were still alive were re-evaluated to assess IgG4 serum levels and IgG/IgG RNA ratio to detect activity of IAC.

Results: Between 1984 and 2015, 321 patients underwent liver and bile duct resection for presumed PHC. Of all patients 15% (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 bile duct disorders mimicking PHC 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 consistently be reported in literature.

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

References

P1399 DIGITAL, SINGLE-OPERATOR CHOLANGIOPANCREATOSCOPY IN THE DIAGNOSIS AND MANAGEMENT OF PANCREATOBILIARY DISORDERS: RESULTS FROM THE MULTICENTER CZECH AND SLOVAK NATIONAL DATABASE

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Introduction: Digital cholangioscopy provides higher-resolution imaging of the pancreatobiliary tract compared to the 1st fiberoptic generation. The impact of a new single-operator digital cholangioscope (d-SOC) in diagnosis and treatment of pancreatobiliary diseases has not been intensely assessed.

Aims & Methods: The aim of this retrospective analysis of prospective case series from 8 centers from the Czech (n = 85) and Slovak (n = 75) regions was to assess (1) diagnostic yield of d-SOC visual diagnosis and biopsies in patients with underdiagnosed 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 d-SOC guided biopsies, (2) achievement of a complete duct clearance in patients with difficult lithiasis and (3) procedure-related AEs.

Results: A total of 150 patients underwent 166 d-SOC procedures (165 cholangioscopies and 1 pancreatoscopy); 81 (48.5%) for diagnostic intents (with biopsy) in 66/68 patients (81.5%), and 85 (51.2%) for therapeutic intents (1 patient had pancreaticolithiasis). The most frequent indication for diagnostic d-SOC was undecided 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 analysis in 95.5% of patients (n = 144). 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’ p > 0.9). 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 (n11; 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). Significant differences were also observed for the rates of overall adverse events and safety of d-SOC-guided biopsies. Conclusion: A 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) Several 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.


P1401 PANCREATIC STENT PLACEMENT AFTER ENDOSCOPIC RESECTION OF AMPULLARY TUMORS IS MANDATORY

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Introduction: Adenoma of the main duodenal papilla is clinically important because this lesion is premalignant and should be resected completely. Endoscopic papillotomy of ampullary adenomas is a promising alternative to surgical resection, however acute and delayed pancreatitis represent a major complication of this procedure.

Aims & Methods: We evaluated the clinical importance of pancreatic duct drainage after endoscopic papillotomy in order to prevent early (acute pancreatitis) and late (pancreatic duct orifice stenosis) complications of this procedure. Our single-centre study with a minimal follow-up of 1 year, includes 19 patients who underwent endoscopic ampullotomy between 2012 and 2016. Careful preoperative evaluation was performed by EUS (100% of patients) and CT (91%)(94%). After a collective evaluation between the surgeon and the endoscopist, patients were candidate for endoscopic ampullotomy. Outcome parameters included ampulloma characteristics, biophysical accuracy as well as safety, efficacy, recurrence rate, and survival.

Results: Endoscopic resection was successful in 15 patients (79%). Histological resection margins revealed non specific changes in 10 patients (52.5%), low or medium-grade dysplasia in 5 patients (26.3%), low, medium-grade dysplasia in 5 patients (26.3%), and carcinoma (21%). Biopict accuracy was 68.4%. In 4 cases histologic specimen revealed an invasive carcinoma: 2 patients underwent pancreaticoduodenectomy and were treated conservatively with placement of biliary and pancreatic stents due to the high preoperative risk. After complete endoscopic resection (15 patients), pancreatic stents were placed in 10 cases (66%). In five cases the positioning of pancreatic stents was not possible due to anatomical difficulties: 2 developed mild pancreatitis after papillotomy; 1 patient developed, as late complication, a stenosis of the pancreatic orifice: the patient died of severe necrotic pancreatitis two years later. Hemorrhage was observed in 2 patients, all with pancreatic stents. Recurrence occurred in 2 patients (10.5%), both were retreated by laparoscopic and diathermal ablation (APC).

Conclusion: Pancreatic stent placement after endoscopic ampullotomy is mandatory to prevent acute and delayed pancreatic complications. Preoperative strategy should be accurate by MRI, EUS and ERCP, in order to define the anatomy of the pancreatic duct aiming to improve the success rate of pancreatic stent placement after papillotomy.

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

Reference

P1402 SERUM LEVELS OF HEAVY METALS IN CHOLANGIOCARCINOMA PATIENTS FROM THE NILE DELTA REGION OF EGYPT: A SINGLE-CENTRE STUDY

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Introduction: Cholangiocarcinoma is a neoplasm arising from the intra- or extrahepatic bile duct lining epithelium. Cholangiocarcinoma are presents less than 25% of all biliary tract malignancies, however, it is the second most common primary hepatobiliary malignancy. Till date, many carcinogens have already been identified and the relevant information with regard to these agents is available. One example is the potentially harmful presence of heavy metals that can cause serious health problems. We therefore aimed to estimate the levels of these heavy metals in bile stenting patients.

Methods: We retrospectively analyzed the serum metal values in patients with biliary obstruction of different etiology originating from the Nile Delta region of Egypt. A single-centre, retrospective study with a minimal follow-up of 1 year, includes 45 patients with cholangiocarcinoma (diagnosed after radiological & histopathological examination) and 20 healthy control subjects attending Mansoura Surgical Gastroenterology centre. All patients and control were permanent residents of the Nile Delta region and the patients were recruited before receiving chemotherapy or radiotherapy. There were no restrictions based on age, sex, or tumor stage. The serum samples were analyzed for concentrations of zinc, lead, cadmium, and chromium by the acid digestion method followed by using atomic absorption spectrometer. Pb and Cd levels were assayed by IMMULITE 2000 XPi immunoassay system supplied by Siemens Healthcare (GmbH Henkestr. Erlangen Germany) using its commercial kits.

Results: The serum levels of Zn, Pb, Co, Cd and Fe were significantly higher in patients having cholangiocarcinoma more than control subjects (P < 0.001). A prescriptive increase in the median values of serum levels of lead (Pb) was found in well differentiated to moderately differentiated to undifferentiated tumours. (P < 0.05). When correlation was made between the heavy metals and CA-19-9 and the survival of the patients, it was found that Ca only has a positive correlation with CA-19-9 and negative correlation with the survival of the patients (P < 0.5, (P < 0.01) respectively.

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

P1403 SELF-EXPANDABLE METAL STENT ARE SUPERIOR TO PLASTIC STENT FOR PREOPERATIVE BILIARY DRAINAGE IN RESECTABLE MALIGNANT DISTAL BILIARY STRUCTURE: A SYSTEMATIC REVIEW AND META-ANALYSIS


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Introduction: Early surgery is the standard treatment in patients with resectable peripancreatic or pancreatic head cancer with jaundice. However, early surgery is not always possible, however it could be a necessary for patient with jaundice at diagnosis or for those undergoing neoadjuvant treatment. Most studies considered plastic stents for BPD, although SEMS are currently considered superior. A recent RCTs showed that fully covered SEMS are associated with better outcomes compared to plastic stents.

Aims & Methods: Aim to compare the rate of endoscopic reintervention (Stent failure of PBD) before surgery and post operative outcome of metal vs plastic. We conducted a bibliographic search using PUBMED, EMBASE including randomized and non randomized trials. OR using the Manthel-Haenszel method was used for dichotomous variables. Weighted mean differences (WMD) were used as the summary statistic for quantitative analysis of continuous variables. Quantitative synthesis was performed using Review Manager version 5.0.

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<tr>
<td>Age (mean ± SD)</td>
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<td>52.5 ± 8.9</td>
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<td>Pb</td>
<td>1.160(0.67-2.89)</td>
<td>0.038(0.0-0.25)</td>
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<tr>
<td>Co</td>
<td>4.040(2.24-14.1)</td>
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<tr>
<td>Cd</td>
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Primary outcome was the rate of endoscopic reintervention before surgery. Secondary outcome was the rate of postoperative 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 metal stent group as well as in the metal stent group in the plastic stent group (p > 0.001). The rate of postoperative pancreatic 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 for patients with resectable periampullary or pancreatic head tumor 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.

P1404 THE EFFICACY AND SAFETY OF PREOPERATIVE BILIARY DRAINAGE IN PATIENTS WITH OBSTRUCTIVE JAUNDICE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: There is considerable controversy as to whether temporary relief of biliary obstruction prior to major definitive surgery (pre-operative biliary drainage) is of any benefit to the patient. A Cochrane meta-analysis revealed a major morbidity with no difference in mortality in the group subjected to PBD. However, the clinical status of patients was heterogeneous between studies.

Aims & Methods: We aimed to investigate the benefits and harms of pre-operative biliary drainage versus no pre-operative biliary drainage (direct surgery) in patients with obstructive jaundice. A computerized medical literature search was performed by using MEDLINE, EMBASE, Cochrane Library, from 1980 to June 2016 aimed at identifying RCTs comparing PBD versus direct surgery. Data from RCTs related to safety and effectiveness of PBD versus no PBD were extracted. Two independent reviewers discussed the results. Risk ratio or mean differences were calculated with 95 per cent confidence intervals. 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. Outcomes were mortality and morbidity.

Results: Nine trials including 734 patients with malignant or benign obstructive jaundice comparing PBD (375 patients) with no PBD (359) were included in this review. There was no significant difference in mortality (risk ratio 0.89, 95%CI 0.67 to 1.18; P = 0.39) between the two groups. Complications were higher in the PBD group (RR 1.41; 95%CI 1.09–1.81 p = 0.008). Overall serious morbidity was higher in the PBD group than in the direct surgery group (RR 1.66 95%CI 1.28-2.16 p = 0.0002). There was no significant difference in length of hospital stay between the two groups: mean difference 4.55 (95% CI –1.51 to 10.61) days (P = 0.14).

Conclusion: There is currently not sufficient evidence to support or refute the routine use of biliary drainage for patients with obstructive jaundice. Patients undergoing surgery for obstructive jaundice is associated with similar mortality but increased serious morbidity compared with no PBD. Therefore, PBD should not be used routinely. Further RCTs are needed.

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

References

P1406 1-DEOXY-SPHINGOLIPIDS, NOVEL BIOMARKERS OF DIABETES, ARE CYTOTOXIC FOR EXOCRINE PANCREATIC CELLS

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Introduction: Exocrine pancreatic insufficiency and exocrine function alterations are characteristics of pancreatitis. They are frequent in diabetes mellitus (DM) patients with a prevalence up to 50%. Although reduced levels of insulin may explain the link of the proportion of patients with pancreatitis and DM, the same phenotype is also detected in insulin-independent DM. This highlights the concept that additional factors are likely to contribute to the pathophysiology of acinar cells. We recently discovered that 1-deoxy-sphingolipids (1-deoxySLs), the levels of which increase in DM and metabolic syndrome are cytotoxic for beta cells. Our preliminary results showed that 1-deoxySLs are also cytotoxic for acinar cells in vitro. Furthermore, the high level of 1-deoxySLs in diabetic animal model aggravated acinar cell damage whereas lowering levels of 1-deoxySLs improved cell deteoration.

Aims & Methods: In this research, we investigate molecular and cellular factors that contribute to compromise acinar cell functionality in the context of DM. Based on the endocrine and exocrine pancreas crosstalk, we hypothesize that elevated 1-deoxySLs levels affect aarily the pancreatic exocrine compartment by compromising pancreatic acinar cells in DM, thus increasing its predisposition to develop exocrine pancreatic diseases. In vivo mouse models with STZ-induced diabetes and cerulein-induced pancreatitis were used in this study. Reduction of 1-deoxySLs synthesis was achieved by oral L-serine supplementation. Disease severity was assessed with biochemical and immunohistological methods. Molecular mechanisms of 1-deoxySL-dependent toxicity were evaluated in vitro on AR42J pancreatic acinar cells and primary acinar cells.
P1407 ROLE OF THROMBOPHILIA IN SPLANCHNIC VENOUS THROMBOSIS IN ACUTE PANCREATITIS
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Introduction: Splanchnic venous thrombosis (SVT) is a common vascular complication of acute pancreatitis (AP). There is paucity of data on its frequency, risk factors, outcome and natural history. Coagulation abnormality has been implicated but not proven as a cause of SVT in AP.

Aims & Methods: We aimed to prospectively study the frequency, risk factors and extent of SVT in patients with AP as well as role of trombophilia in causation of SVT. Patients with AP presenting to our centre between January 2015 and June 2016 were prospectively evaluated with contrast enhanced computerized tomography (CECT) abdomen for presence of SVT. These patients were subjected to detailed analysis of coagulation parameters. Outcome was assessed in terms of presence or 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: Nineteen patients with AP (13 males, mean age 31.85 ± 13.34 years) were evaluated of which 26 (27.1%) had SVT. Single vessel, two vessels and three vessels were involved in 19 (73.1%), 3 (11.5%) and 4 (15.4%) patients respectively. Splenic vein, portal vein and superior mesenteric vein involvement were seen in 22 (88.5%), 11 (44.2%) and 4 (15.3%) patients respectively. Necrotizing pancreatitis, CTSI ≥ 6 and Modified CTSI ≥ 6 were found to be significantly higher number of patients with SVT than those without SVT (96.2% vs 78.6%, 76.9% vs 47.1% and 92.3% vs 67.1%, respectively). Coagulation analysis was performed in 42 patients (18 with and 24 without SVT). Protein C, protein S and a2 antiplasmin were positive in 76.9% vs 47.1%, and 92.3% vs 67.1%, respectively. SVT and 19 without SVT) of which 2 (6.1%) were positive. There was no correlation between abnormal coagulation results and outcome of AP. Coagulation abnormality did not differ significantly between the patients with and without SVT. On follow-up, Doppler study done in 7 patients with SVT, spontaneous resolution of SVT occurred in 5 (71.4%) within 1 year. None of the patients had varices on follow-up.

Conclusion: SVT in AP is more common in patient with necrotizing pancreatitis and higher CTSI 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

P1409 EUS-GUIDED PANCREATIC FLUID COLLECTION DRAINAGE WITH LUMEN-APPOSING METAL STENTS OR PLASTIC DOUBLE PIGTAIL STENTS: A MULTI-FACTORIAL ANALYSIS
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Introduction: We aimed to compare the efficiency of plastic and metal stents for symptomatic pancreatic fluid collection drainage and analyze other main associated factors that affect the outcome of drainage therapy.

Aims & Methods: Rates of technical and clinical success, procedure-related side effects (hemorrhage, stent migration, and cyst rupture), re-interventions, and duration of hospital stay.

Results: There were 52 patients, 40 who underwent plastic stent placement and 12 who underwent lumen-apposing metal stent placement. The total rate of technical success was 100%. The total rate of clinical success was 100%. The total rate of adverse events was 7.7% (4/52). On multiple logistic regression analysis, the use of plastic stents (P < 0.05, Exp B = 12.168) and presence of a large cyst (P < 0.05, Exp B = 1.036) were shown to significantly increase the risk of re-intervention. On multivariate linear regression analysis, etiology of pseudocyst (P < 0.05, B = -8.427; -9.785; -5.514) was associated with prolonged hospital stay, while stent type was not shown to be a factor (P > 0.05).

Conclusion: Both plastic and lumen-apposing metal stents are proven to be highly efficient in pancreatic fluid collection drainage. The lumen-apposing metal stent is superior in preventing complications such as migration and cyst leakage and reducing the rate of re-intervention. Large cyst size is associated with an increased risk of re-intervention and prolonged hospital stay.

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

Reference

P1410 EARLY ACHIEVABLE SEVERITY (EASY) INDEX FOR SIMPLE AND ACCURATE EXPEDITED RISK STRATIFICATION IN ACUTE PANCREATITIS
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6Department Of Abdominal Surgery, Hospital of Helsinki University Central Hospital, Helsinki/Finnland
7Department Of General Surgery, Consorci Santitoni del Garraf, Sant Pere de Rodes/Spain
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Introduction
infected pancreatic necrosis (IPN) is associated to significant morbidity and mortality. Current management of IPN is based on a step-up approach, based on minimally invasive procedures. Our group has recently published a protocol of local infusion of antibiotics for the treatment of IPN (Panreatology. 2016;16:719-25.

Aims & Methods: We aim at analysing the efficacy of this step-up approach for the treatment of IPN in clinical practice. This was a retrospective single-centre study of patients admitted with acute pancreatitis (AP) between January 2015 and December 2016. The cases were classified of pancreatic necrosis (MN) and IPN (defined by positive culture of necrosis and clinical, analytical, and/or radiological data of infection) were identified and evaluated. IPN was treated following a step-up approach defined by 1. intravenous antibiotic therapy, 2. Endoscopic ultrasound-guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.

Results: 694 cases of AP were included (mean age 79.5 ± 18.3, 555 male). CT scan was performed only if clinically indicated. 67 patients (9.6%) had acute necrotizing pancreatitis (ANP) and 21 of them IPN (31% of ANP). IPN patients were treated with intravenous antibiotics (imipenem [n = 15] and meropenem [n = 6], with good response in 8 (38% of IPN). The remaining 13 cases underwent a EUS guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.

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

Reference
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 necrosectomy (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 antimicrobial 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. 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 = 0.01), 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.

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 may be a promising alternative or supplement to systemic administration. Particularly the use of local instillation of amphotericin B appears to be more effective in the treatment of fungal infections.

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

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PI1412 CORONARY DISEASE AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE ARE NOT ASSOCIATED WITH WORSE OUTCOME IN ACUTE PANCREATITIS

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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 (>48h), 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 UCI. 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 Ramson’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 of previous history of OF with 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.
P1413  WORSE  OUTCOMES  IN  ACUTE  Pancreatitis IN  PATIENTS  WITH  TYPE-2  DiabeteS  MELLITUS  

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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 OR (> 48h) admission to intensive care unit (ICU) and mortality. Variables were analysed by logistical regression (SPSS v23.0). The objective of this study was to assess the risk of morbidity and severity in AP among patients with type-2 DM.

Results: A total of 555 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=31) 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 31.7, CI95% 18.8-53.7, p < 0.001), persistent OR (45.1, CI95% 18.7-108.9, p < 0.001), ICU admission (OR12.3, CI95% 1.9-74.4, p < 0.001) and mortality (OR 17.1, CI95% 6.8, 42.8, 4.4, 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

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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 amylose and amylase.

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 of 5 patients (28%). According to timing of AP we recognized two clinical presentations: 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 of 3 of them (75%). Two of them were transplanted for fulminant hepatic failure, one for end-stage liver disease from chronic hepatitis B infection and one for polycystic liver disease. Two patients were treated by surgical necrectomy 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 retroperitoneal drainage were performed in 578 males and 389 females (mean age 51 years, range 18–74). AP

References

P1415  The impact of biliary sludge to development of pain and efficacy of hymecromone in chronic biliary pancreatitis

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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 biliary sludge. Protocols of computer tomography, endoscopic and transad- dinal ultrasound studies of over 6000 patients of gastroenterological tertiary clinic were examined. Those who had signs of BS were selected to evaluate the state of MDP at least “mild CP” according to modified Cambridge classification. Exclusion criteria were: established etiology of CP and signs of pancreatic neoplasia. Patients, who received ursodeoxycholic acid and drugs that affect smooth muscle contractility to the stay for less then 3 month prior to data collection, were excluded. Thirty consecutive patients (15m, 15 f, mean age ±SD: 52.8 ± 15.3), who had both BS and CP were summoned for physical examination, quality of life assessment, US-cholangiography and endoscopic pancreaticbiliary ultrasonography. Calculation of MDP was made by ACM package (SMDP=(wMDP × 2)/(C6 +2.72) and state of MDP before and after 3 weeks of hymecromone 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 SMDP was 14.9 ± 5.2 mm² (95%CI 10.9–18.9), SMDP was below the normal range (20–25 mm²) in 78% of patients. SMDP had positive correlation to the volume of evacuated bile according to US-cholangiography (r = 0.042) and gallbladder contractility coefficient (r = 0.817, p = 0.007). All patients with higher density of MDP at US-cholangiography had SMDP 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, papillary edema — in 38%, fibrosis — in 13%. MDP changes were associated with higher AP level and larger MDP diameter. Hyemecromone monotherapy resulted in significant improvement in abdominal pain (r = 0.792, p = 0.008) and “bodily pain” score of SF-36 questionnaire (t = 3.709 p = 0.001).

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.

Reference

PI416 RETROSPETIVE ANALYSIS OF EXOCRINE PANCREATIC FUNCTIONALITY IN PATIENTS WITH CHRONIC PANCREATITIS

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Introduction: Pancreatic exocrine insufficiency is a late complication of chronic pancreatitis; its clinical onset is characterized by steatorrhea and weight loss, borborygmi, 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/seque-

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 pan-

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

PI417 "PAINLESS" CHRONIC PANCREATITIS: EPIDEMIOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERIZATION

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In recent years, the term “painless” chronic pancreatitis (PCP) 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; to compare this with different 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 y/o vs. 42.5±15.3 y/o; p < 0.001), less fre-

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

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PI418 LONG-TERM OUTCOMES OF A FULLY COVERED SELF-EXPANDABLE METAL STENT WITH ANTIMIGRATION PROPERTIES FOR EUS-GUIDED PANCREATIC DUCT DRAINAGE

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Introduction: Recently, EUS-guided pancreatic duct drainage with transmural stenting (EUS-PD) has been used for patients with painful obstructive pancreatitis in whom endoscopic retrograde pancreatography (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 fully covered self-expandable metal stent (FCSEMS). Removability of an FCSEMS in long-term use and higher cost are the main concerns of EUS-PD with an FCSEMS compared with EUS-PD with a plastic stent.

Aims & Methods: The aim of this study is to evaluate the procedural and long-

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

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Overall mean stent patency duration was 412 days (range 14–1081) during mean follow-up period of 20.7 months (range 2–59). Median stent duration of all malignant strictures was 95 days (range 14–297). Mean stent patency in benign stricture was 525 days (range 14–1081). No patients with malignant strictures required FCSEMS revision or exchange during follow-up periods. FCSEMS removal and exchange was successful in patients with benign strictures until 3-year placement of an FCSEMS. Prospective randomized trial comparing EUS-PD with FCSEMSs 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


P1420 HU R MEDIATED POST-TRANSCRIPTIONAL REGULATION OF HO-1 AND INHIBITORS OF APOPTOSIS PROTEINS IS ASSOCIATED WITH THE POOR CLINICAL OUTCOMES AMONG PATIENTS WITH Pancreatic Ductal Adenocarcinoma.
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Introduction: The mRNA binding protein HuR is involved in the post-transcriptional regulation of cytoprotective molecules, such as COX-2, HO-1 and inhibitors of apoptosis proteins (IAP, IAP2, XIAP, SURVIVIN), and might be related to worse 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 pancreateodudendectomy and subsequent chemotherapy for PDAC between 2011–2016 were analyzed. Patient’s mRNA expression levels of HuR, COX-2, HO-1, IAP1, IAP2, Survivin and XIAP were compared with normal pancreatic tissue obtained from organ donors. Additionally, the correlations among 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 indentify 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 3.8-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, as well as high levels of XIAP were negatively associated with microvascular and perineural invasion. Univariate analysis revealed that expression of HO-1, XIAP and IAP1 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


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Introduction: Hypoxia-induced reprogramming of cell energy metabolism and changes in glycolysis 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 proliferation.

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 200mM 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 HIF pathway activator
ML 228 and inhibited using Echinomycin. PTK and STK analysis of cell lysates displayed correlation between phosphorylation and O-glycosylation in hypoxic samples.

Results: Mechanistically we could show, that hypoxia-induced decreased levels of C1GALT1C1 results in reduced T-Synthase activity with subsequent expression of truncated O-glycans. The early O-glycosylation is inducible using HIF pathway activator ML228 under normoxia and the effect is reversed using 5µM Echinomycin under hypoxia underscoring the role of HIF1α regulated transcription. Interestingly, the pattern of Tn antigen modified proteins derived from hypoxic samples differ significantly from engineered COSMC-deficient cells, displaying O-GalNAc moieties in addition to O-GlcNAc in cytosolic protein fractions. Further, we could show PTK/AKT/ MAPK signalling is depending on the state of cellular O-glycosylation providing a new rationale for the correlation of PDAC Tn antigen glyctype and cancer cell metastasis.

Conclusion: Our findings point to a novel crosstalk of O-GalNAc and O-GlcNAcylation under hypoxia extending the knowledge base of differential O-GalNAc glycosylation in pancreatic cancer.

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

References


P1424 Tryptophan Degradation as an Alternative Energy Source in Pancreatic Cancer

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Introduction: Pancreatic cancer (PDAC) is one of the most lethal diseases worldwide. The current standard of care for patients with PDAC includes surgical resection in the case of early diagnosis, whereas the majority of patients suffer from locally advanced or metastatic disease. Therefore, chemotherapeutic treatment is the primary standard of care. However, chemoresistance and high metastatic potential limit the long-term survival of PDAC patients. Efforts to understand the molecular mechanisms underlying the initiation, progression and therapy of PDAC are needed.

Aims & Methods: The aim of the presented study was to investigate the expression of the Tryptophan degrading enzyme KYNU in pancreatic cancer cells. A secretome survey of chemoresistant PDAC cells was performed using SILAC-based mass-spectrometric analyses. Relative differences in protein-concentrations among samples were investigated and led to the identification of previously unknown proteins. The impact of RNAi-mediated knockdown of selected genes in proliferating PDAC cells was analyzed using MAT- vitality assays and protein-expression studies. All experiments were performed using Real-Time-PCR and immunohistochemistry using patient-derived PDAC samples.

Results: SILAC-based identification of the Tryptophan degrading enzyme KYNU in chemoresistant PDAC cells revealed an overexpressed and secreted form of the KYNU protein, compared to the chemosensitiv epithelial counterpart. We further identified various stress-related extracellular stimuli (Gemiicitabine, IFNγ, Hypoxia) as main inducers of KYNU expression. Secretion of KYNU was enhanced using a knockdown approach. We found that KYNU overexpression led to subtotally lower proliferation of chemoresistant and aggressive PDAC cells. Global expression analyses using a tissue-microarray of PDAC patient samples (n = 368) revealed that high KYNU expression is significantly correlated with a worse outcome in terms of survival rates.

Conclusion: The tryptophan degradation pathway member KYNU is overexpressed in a subset of PDAC patients and is linked to increased cancer cell proliferation. Abundant KYNU expression in PDAC patients is linked to a worse clinical outcome.

We found that KYNU is a new secreted biomarker of chemoresistant PDAC cells.

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

P1424 INTEGRIN a11 IS SPECIFICALLY EXPRESSED IN PANCREATIC TUMOR STROMA AND A KEY TARGET IN REGULATION OF PANCREATIC TUMOR STROMAL MYOFIBROBLASTS

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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), precursor cells 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 by 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 specimens and various organotypic and cell culture models. The relation between ITGA11 and CAF activation markers and tumor growth was studied in a stroma rich co-injection model in mice. The biological role of ITGA11 in CAF differentiation was studied in hPSCs and hPSCs activated with TGF-β or conditioned medium from Panc-1 endothelial tumor cells using qRT –PCR, immunohistochemistry, western blot, wound healing, collagen contraction and cell growth assays.

Results: In this study we have for the first time stained ITGA11 in human PDAC specimens. We found that ITGA11 was highly expressed in stromal myofibroblasts (CAF)s and myofibroblast precursor cells of pancreatic cancer patients, as shown by co-localization with the stroma marker α-SMA. Interestingly, there was no expression in healthy human pancreas and various other tissues from human organs. Furthermore, we induced subcutaneous tumors in mice by injecting Panc-1 or Panc-1+hPSCs and found that ITGA11 was significantly overexpressed in stroma-rich Panc-1+hPSC tumors. The quantitative gene and protein expression of ITGA11 in subcutaneous tumors, positively correlated with the expression of the CAF markers α-SMA, Col1a1 and PDGFRα. Activation of hPSCs with TGF-β or conditioned medium from Panc-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.

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

References

P1425 EFFECT OF ACOUSTIC CAVITATION ON A THREE-DIMENSIONAL CULTURE MODEL OF PANCREATIC ADENOCARCINOMA

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Introduction: The dismal prognosis of pancreatic ductal adenocarcinoma (PDAC) is mainly due to chemoresistance linked to the tumor microenvironment. Recent developments in ultrasound (US) suggest that US-induced cavitation could help overcome chemoresistance by breaking 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 potentiation of chemotherapy by US. CAPAN-2 PDAC cell line-derived spheroids were cultured as previously described by Ivascu et al. Four conditions, i.e. control, 400 nM-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 UptiteBlue. 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 CT-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 spheroids, 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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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 and 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 prospective study with 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 lesions were classified based on morphological and immunohistochemically defined by the current WHO criteria.

Results: We analyzed 28 patients (16 women), mean age 66 y-old (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 gastroduodenopancreatectomy, 2 subtotal gastrectomy and splenectomy. The tumor was located in head, body and tail, and entire pancreas in 18, 8, 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 5 (17.5%) had no involvement. 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%), 17 (61%), and 11 (39%), respectively. The histopathologic patterns formed were gastritic-type (9), Intestinal-type (3), pancreatic-type (9), mixed-type (6), pancreatic Type (9), and finally dichotomous Type (9), and mixed-type (6).

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. Pathology shows the pancreas 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.

Reference

P1428 EVALUATION OF LONG TERM SURVIVAL OF CHEMORADIOTherapy WITh GEMcitABINE AND S-1 COMPaRISON WITH CHEMOTHERAPY ALONE IN THE CASES WITH LOCALLy ADVANCED PANCREATIC CANCER

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Introduction: Because of the progression of systemic chemotherapies (CT) for locally-advanced pancreas cancer (LA-PC), chemoradiotherapy (CRT) was selected for limited time. 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 local lesions (CA, SMA, CTVL, PV), S1 invasion (3) allochronic and concur- rency without multiple primary cancer, 4) unexecuted antitumor therapy. The chemotherapy in CRT administration of GEM (200mg/m2) once a week in a week 5-day period for 5.5 weeks, and total dose was 50.4 Gy (Total 28 times). As after treatment, GEM 1000 mg/m2 was continued until PD. The patients of CT group were also recruited by the same criteria. One of the regimens among gemcitabine, 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 P/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 conver- sion 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, neu- tropeenia was 11 cases (G4-4 case), interstitial pneumonia (IP) aggravation was one case.

Conclusion: For LA-PC, GS-CRT showed better local tumor control and longer survival, and was considered as good candidate of neo-adjutant therapy. More prospective studies was other benefit of LA-PC value 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.

Reference
Reference


P1428 HIGH-INTENSITY FOCUSED ULTRASOUND (HIFU) THERAPY FOR UNRESECTABLE PanCREATIC CANCER
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Introduction: High-intensity focused ultrasound (HIFU) is expected as a new advanced therapy for unresectable pancreatic cancer (PC). HIFU therapy with chemotherapy is being promoted as a new method to control local advance by ablation tumor, and mainly achieve relief of pain caused by PC.

Aims & Methods: We have evaluated the therapeutic effect of HIFU therapy in locally advanced and metastatic PC. We treated PC patients by HIFU as optional local therapy as well as systemic chemo/chemo-radiotherapy, with whom an agreement was obtained in adequate IC, from the end of 2008 in our hospital. This study took approval of member of ethic society of our hospital. HIFU device used is FEP-BY02 (Yuande Bio-Medical Engineering Co.Ltd., China). The subjects were 140 PC patients, i.e. 69 cases in stage III, 71 cases in stage IV. Performance status (PS) was PS:0; 79, PS:1; 38, and PS:2; 3 cases. Mean age at resection was 62.3 ± 11.5 yrs. The details of clinicopathological lesions. EUS result was compared before and after HIFU for the detection of lesions was 21.2 ± 9.9 mm. Accuracy in T assessment was 60% (18/30) for both EUS and CT scan; when considering detection of ≥T2 lesion in any of the two imaging modalities the accuracy increased to 80% (24/30). The sensitivity and specificity in discriminating T1 lesions from ≥T2 lesions was respectively 64.7% and 76.9% for EUS and 76.5% and 72.7% for CT.

Conclusion: This is the first study evaluating the accuracy of CT and EUS imaging modalities in establishing the T in the setting of the new TNM 8th edition. In our study, CT scan and EUS have both a relatively low accuracy in determining the correct T stage for pancreatic cancer when used alone, while the accuracy raises significantly when used in combination. CT scan was not able to detect up to 10% of lesions. The accuracy of the two imaging modalities showed an overlap in 16 cases. Discriminating T1 lesions from ≥T2 lesions compared to CT scan. These preliminary results suggest how EUS, often adopted only as a means to obtain a cytological specimen, has a key role in determining the T stage, and that the combination of the two modalities should be used in combination to better assess the proper therapeutic management as no adjuvant chemotherapy or upfront surgical resection.

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

P1429 EUS AND CT SCAN ACCURACY IN ESTABLISHING THE T STAGE IN PanCREATIC CANCER BASED ON THE UPCOMING TNM 8TH EDITION
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Introduction: Pancreatic ductal adenocarcinoma (PDAC) has a dismal prognosis with an overall 5-year survival rate <6%. Surgically resected patients, although undergoing perioperative treatment, have nevertheless a 5-year survival <25%. In fact, it has been recently suggested that patients with a tumor of more than 2 cm might harbor micrometastases at diagnosis. In this view, the availability of new highly effective chemotherapy regimens that might be employed in the neoadjuvant setting, the correct evaluation of the T stage of pancreatic cancer plays a key role. The new proposed AJCC Staging System for Pancreatic Adenocarcinoma TNM (8th edition), in fact, differs from the 7th edition mostly for the evaluation of the T, giving high importance to the diameter of the tumor. The current evaluation has already shown the need to predict such differences more efficiently compared to previous editions. In this context, an efficient preoperative evaluation of the T is of high importance as it might shift the therapeutic decision from upfront surgery to neoadjuvant chemotherapy, that could be performed even in tumors being >2 cm (T2). Few studies compared the accuracy of CT scan and EUS in evaluating the diameter of the tumor with heterogeneous results and often dated machines, and no study adopted the new TNM system to evaluate the preoperative staging defined by CT and EUS.

Aims & Methods: The aim was to evaluate the accuracy of CT scan and EUS, alone and in combination, in establishing the T stage systematically resected PDAC as defined by the new upcoming TNM 8th edition and to establish the sensitivity and specificity of the two imaging modalities in discriminating T1 stage from more advanced T stages. We conducted a retrospective study on a cohort of surgically-resected histologically-confirmed high-grade patients at 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 not 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 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 yrs. 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: 105 ± 65.6 min, mean total number of HIFU shots: 1967.8 ± 1106 shots. The effects of HIFU therapy were as follows: 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, immunotherapies 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 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%.

Conclusion: This study suggested that HIFU therapy has the potential of new method of combination therapy for PC.

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

P1430 RISK FACTORS AND SURVIVAL IN PanCREATIC ADENOCARCINOMA
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Introduction: Pancreatic adenocarcinoma is associated with a 5-6% survival at 5 years and a poor quality of life. In Romania there are few information about the prognostic influence of known risk factors for pancreatic cancer.

Aims & Methods: The aim of this study is to evaluate the association between risk factors and the occurrence of pancreatic adenocarcinoma and patients’ survival, which may constitute a theoretical basis for screening. We performed a prospective multicentric study of patients with suspected pancreatic tumors detected in abdominal ultrasound or CT examination, during January 2015-December 2016, in which were analyzed risk factors and possible association with survival adjusted statistically according to tumor stage (Chi square test, ANOVA, log-rank test).

Results: There were 279 patients with pancreatic adenocarcinoma included in the study. Male patients were 58% from all patients, and the mean age was 63.5 years. Smoking, new-onset diabetes and history of chronic pancreatitis are risk factors for pancreatic adenocarcinoma (p < 0.05). At the end of 12 months of follow-up, almost one-third of patients with pancreatic adenocarcinoma died (median survival = 5 months). It was demonstrated a statistically significant association adjusted for tumor stage between the presence of new-onset diabetes and survival: 5 months vs 3 months with a HR = 3. Other risk factors (alcohol, obesity, sex, genetics, coffee intake, some infections and abdominal surgery, history of chronic pancreatitis) had no prognostic role.

Conclusion: In our study, the risk factors for pancreatic cancer were smoking, having a chronic pancreatitis and new-onset diabetes, but the only prognostic factor was smoking. Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: According to the 2012 International guidelines on the management of pancreatic ductal adenocarcinoma, elderly pancreatic cancer patients increase. Most studies have focused on the management of pancreatic cancer in patients older than 75 years. We retrospectively examined the safety and efficacy of surgical resection, whereas surgery is not always mandatory in those with MPD diameter ≤10 mm. Surgical resection is not mandatory in those with MPD diameter between 5 and 9 mm. Aims & Methods: The aim of this study was to investigate the prevalence of malignancy (high-grade dysplasia or invasive carcinoma) in 20 resected IPMN with MPD diameter between 5 and 9 mm and to identify predictive factors of malignancy. Results: From 122 patients with IPMN submitted to surgery, 66 with MD- or mixed-IPMN entered the final analysis. Mean age was 66 ± 12 years and 48 (72.7%) patients were men. Group A comprised 47 patients and Group B 19. Abdominal pain was present in 23 (34.3%) patients, jaundice in 19 (28.8%), diabetes in 18 (27.3%), pancreatitis in 15 (22.7%) and weight loss in 12 (18.2%). Clinical differences between study groups. The most common location of the MD-IPMN was the head of pancreas (60.6%), and it was the most frequent location of mixed-IPMN (41.7%). The prevalence of no malignancy (high-grade dysplasia or invasive carcinoma) was 42.6% ± 8.5% and 38.3% in group A and 10.5%, 10.5%, 21.1% and 57.9% in Group B patients. The overall malignancy rate was 46.8% in group A and 79% in group B. Jaundice (p = 0.017), weight loss (p = 0.035), and complete involvement of MPD at pathological analysis (p = 0.018) were significantly more common in patients with malignancy. Conclusion: Almost half of resected IPMN with MPD diameter between 5–9 mm harbor histologically proven malignancy. In these patients, particularly in those with jaundice and weight loss, surgery rather than follow-up should be recommended. Disclosure of Interest: All authors have declared no conflicts of interest.

P1432 CLINICAL SIGNIFICANCE OF CHEMOTHERAPY FOR ELDERLY UNRESECTABLE PANCREATIC CANCER PATIENTS S. Kaino, M. Sen-Yo, S. Shinoda, S. Amano, I. Sakaida Department Of Gastroenterology & Hepatology, Yamaguchi University Gastroenterology & Hepatology, Ube/Japan Contact E-mail Address: kaino@ymaguchi-u.ac.jp

Introduction: Pancreatic cancer has poor prognosis despite of improvements in multimodal treatments. As aging of the population advances, it is expected that elderly unresectable cancer patients increase.

Aims & Methods: The aim of this study was to investigate the clinical significance of chemotherapy for patients with unresectable pancreatic cancer. At our hospital, 96 patients were diagnosed as having unresectable pancreatic cancer between January 2010 and December 2016. In this study, we defined elderly patients as those older than 75 years. We retrospectively examined the efficacy and safety of chemotherapy in patients with unresectable pancreatic cancer. We analyzed and compared the survival rates between patients aged 75 years or older and those younger than 75 years (group A), and 59 were younger than 74 years (group B). We treated 6/10/0/2/5/4 patients in group A with GEM/S-1-modified FOLFIRINOX (mFOLFIRINOX)/GEM + nabPTX/BSC/other(s), respectively. On the other hand, we treated 12/14/4/11/13 patients in group B with GEM/S-1/mFOLFIRINOX/ GEM + nabPTX/BSC/other(s), respectively. Severe adverse events (more severe than grade 3 according to CTCAE v4.0) occurred in 18.2% of the patients in group A and 33.3% of the patients in group B. No significant difference was found between the two groups. The median survival time of the patients who were receiving chemotherapies was 170.7 days in group A and 291.0 days in group B. No significant differences were also found between the two groups. The median survival time of the patients who underwent chemotherapy in group A (332.0 days) was significantly longer than that of patients who underwent BSC (71.0 days).

Conclusion: Chemotherapy could be safe and effective for patients older than 75 years who have unresectable pancreatic cancer.

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

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. Massidda4, A. Anderloni5, S. Crino6, E. Manfrin7, M. Ballare4, L. Poliani8, F. Auriemma2, C. Montironi2, M. Cuatrecasas2, JR. Ayuso3, S. Sanchez4, M. Sen-Yo, S. Shinoda, S. Amano, I. Sakaida

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Introduction: Endoscopic ultrasound-guided biopsy (EUS-biopsy) is considered a reliable, safe, and effective technique for obtaining samples from pancreatic masses with a very high sensitivity and specificity (ranged to 85%-92% and 96-98%, respectively)[1-3]. A new EUS needle (SharkCore FNB needle, Medtronic, Dublin, Ireland) was introduced in order to improve the tissue acquisition.

Aims & Methods: The aim of the present study was to evaluate the presence of a histological sample using Shark Core Needles. This study was an observational multicenter prospective non-randomized clinical trial (NCT02948640). All consecutive patients referred for EUS examination and sampling of solid pancreatic masses underwent EUS-guided biopsy with 25 G Shark Core needles. This needle has an innovative tip geometry with a cutting surface designed to acquire cohesive tissue fragments. This needle was performed in every mass. At every pass, a macroscopic on-site quality evaluation (MOSE) was done by endoscopist. If a “worm-like” material was observed at gross visual assessment, it was placed into formalin. If only liquid material was retrieved, it was smeared between 2 glass slides, fixed with ethanol, and stained with a Papanicolaou-stain for cytological analysis. Endoscopists recorded macroscopic features of the specimens. Pathologists described macroscopic, microscopic features, immunohistochemical studies. The primary outcome was the diagnostic performance rates of histologic core. Pathologists defined core all histological samples with architecturally intact histology, measuring at least 5 mm in greatest axis. All the other specimens (< 5 mm) were defined as micro-fragments. The final diagnosis was based on surgical resection, and clinical/radiological follow up. The secondary outcomes were diagnostic accuracy and procedure-related adverse events.

Results: Study population included 82 patients, enrolled in three centres, between August 2016 and April 2017, with a mean age of 64.0 (SD 13.7, range 21–84) and 57.3% female gender. The mean size of the lesions was 27.6 mm (SD 12.2) and the location was the body and tail in 27 patients (32.9%), neck in 11 (13.4%), head and uncinate process in 44 (53.7%). Three needle passes were performed in all 3 patients who experienced mild bleeding precluding more than one needle pass at AMCE. Endoscopists described presence of “worm-like” material in 192 biopsy samples over 242 (79.3%). In 8 patients only cytological specimens were obtained after 5 needle passes (9.8%). Six cases of mild self-limited bleeding were observed (7.3%). The pathologists described the presence of a core in 80 samples (41.7%), in the other cases, after the specimen preparation, a micro-fragmentation was observed, that didn’t affect the histological evaluation. A final histological diagnosis was reached in 73 patients (90%): 50 pancreatic adenocarcinoma, 16 NET, 5 chronic pancreatitis, 2 pancreatic metastasis from other organs.

Conclusion: The new biopsy needle showed a good overall adequacy and a good rate of histological specimens (both core and micro-fragments) during EUS-guad biopsy acquisition of pancreatic masses, with a minimum number of needle passes and no major complications. This ability could allow to avoid the use of rapid on-site evaluation and to perform immunohistochemical, molecular and genetic studies on histological samples.

Disclosure of Interest: All authors have declared no conflicts of interest.
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P1434 A 5- YEAR TERTIARY CENTRE EXPERIENCE OF ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION FOR DIAGNOSIS OF SOLID PANCREATIC LESIONS
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Introduction: EUS FNA is accepted as the primary modality for tissue diagnosis of solid pancreatic lesions. The presence of on-site cytopathology for immediate evaluation of aspirate and need for cytopathology assistance. This is a review of current practice.

Aims & Methods: We retrospectively assessed 700 consecutive EUS-FNA procedures from January 2011 to January 2016. 459 (65.5%) solid pancreatic lesions were included in the final analysis after excluding 230 for biliary strictures, hepatic lesions, lymph nodes, gastric, oesophageal lesions, pancreatic cysts and 11 for insufficient information.

Results: In 399 (86.9%) cases on-site cytopathology support was available, while the remaining was unsupported. There were 228 males (57.1%) in the supported and 29 (48.5%) in the unsupported group. Mean age was 64.6 (SD: 11.4) and 67.4 (SD: 11.9) respectively. The mean number of passes in the two groups were 2.8 (SD: 1.12) and 1.9 (SD: 1.0) (P < 0.0001). A conclusive diagnosis (malignant, benign, NET, GIST) was made in 84% (67%, 12%, 5%, 0%) of the supported group and in 38% (23%, 10%, 3%, 2%) of the unsupported group (P < 0.0001). The mean follow up for the entire cohort was 14.2 months (SD:14.1) and mean survival of in patients diagnosed with malignancy was 10.9 months (SD: 8.7).

Overall performance characteristics of EUS FNA were Sensitivity: 90.8% Specificity: 66.9% PPV: 91.8% NPV: 85.4%

Conclusion: This review confirms high performance characteristics of EUS FNA. The presence of on-site cytopathologist significantly increases the diagnostic yield.

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

P1435 CLINICAL IMPACT OF GNAS AND KRAS MOLECULAR ALTERATIONS ADDED TO CEA AND CYTOLOGY IN Pancreatic CYSTIC FLUID OBTAINED BY EUS-FNA
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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) is not yet recommended in clinical practice.

Aims & Methods: We aimed to determine if mutation in GNAS and KRAS in addition to CEA level and cytology of cystic fluid obtained by EUS-FNA can help in pancreatic cyst classification and decision making. Evaluation of methylation pattern of the GNAS complex locus was performed for cyst classification. Between 2008–14, 266 EUS were performed for cystic pancreatic evaluation in a single center. We determined the mutational 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 cytology 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 (17%) and multiple (2%), with a mean size of 3.9 ± 2.3 cm (0.5–9 cm). Cyst types (as after EUS-FNA + CEA/ cytopology: 15 serous cystadenomas (SCAs), 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 (23%), 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 cyst 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). Sensitivity and specificity of CEA > 192 + cytopology 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.

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

P1436 KRAS MUTATION ASSAY ON EUS FNA SAMPLES FROM PATIENTS WITH PancreATIC MAss
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Introduction: KRAS and GNAS gene mutations in pancreatic cystic lesions are common findings in pancreatic cystic lesions and the 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, 118 were diagnosed as cancer, 26 chronic pancreatitis, 3x neuroendocrine tumor. In total 147 native aspirates, 118 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 mutations 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 four 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 alcoholico 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 BILIARY STENTS REDUCE THE DIAGNOSTIC PERFORMANCE OF EUS BIPSY IN PATIENTS WITH A MASS IN THE HEAD OF THE PANCREAS? N. L. Bekkali1, M. Naya2, L. Thornton1, S. J. Johnson2, B. Haugk3, A. Darne4, J. S. Leeds1, R. Charnley3, K. Oppong4, K. Oppong5 1Hpb-medicine, Freeman Hospital, Newcastle upon Tyne/United Kingdom 2Cellular Pathology, Royal Victoria Inflammatory, Newcastle upon Tyne/United Kingdom 3Hepatobiliary and Pancreatic Surgery, Freeman Hospital, Newcastle Upon Tyne, United Kingdom, newcastle/United Kingdom 4Digestive Endoscopy Unit, CHU St Antoine, Paris/France 5Hpb-medicine, Freeman Hospital, Newcastle upon Tyne/United Kingdom 6Hepatobiliary and Pancreatic Surgery, Freeman Hospital, Newcastle Upon Tyne, United Kingdom, newcastle/United Kingdom Contact E-mail Address: noorbekkali@hotmail.com Introduction: Self-expanding metal stents (SEMS) are increasingly preferred to plastic stents (PS) for pre-operative 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 (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 two 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 accuracy 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 biliary strictures in the head of pancreas, for which EUS-FNA were recorded. Mean age of patients was 37 ±15y. Methods: EUS FNA/FNB procedures on patients with HOP were recorded between January 2010 and June 2016. Biopsies reported as malignant were considered as such, all other reports were considered benign. A definitive diagnosis of cancer was based on positive pathology, which involved features of malignancy, and/or imaging features 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=0.0082) and PS (p=0.03) and not significant between PS and SEMS. Stepwise multi-variable analysis revealed significant difference for accurate tissue diagnosis favouring size needle 25G (OR 1.7 [95%CI 1.1–2.7] and tumour size (OR 1.04 [1.02–1.07]) and was affected by presence of a SEMS or PS (SEMS OR 0.3 [0.2–0.6] or PS (OR 0.5 [0.3–0.9]). 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.


P1439 DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMOURS USING SUREPATH CYTOLOGY AND IMMUNOHISTOCHEMISTRY WITHOUT NEED FOR EXCISION BIOPSY C. Meredith1, H. Dixson2, P. Irandoost3, P. Baird1 1Gastroenterology And Hepatology, Bankstown-Lidcombe Hospital, Bankstown/ Australia/NSW 2Ultrasound And Nuclear Medicine, Bankstown-Lidcombe Hospital, Bankstown/ Australia/NSW 3Cytology, Lavery Pathology, Ryde/Australia/NSW Contact E-mail Address: drmeredith@gmail.com Introduction: Pancreatic neuroendocrine tumours (PNETs) are relatively rare, i.e., 21 per 100,000 individuals per annum, and account for only 1–2 percent of all pancreatic tumours. They are separated into 2 major categories: 1) well-differentiated (WD-NETs) which have round to oval nuclei, coarsely stippled chromatin and finely granular cytoplasm and 2) poorly-differentiated (PD-NETs) which have a diffuse architecture with an irregular nucleus and less cytoplasmic granularity. WD-NETs tend to have an indolent course (survival ~67% at 5 years) but ~50% have metastasised at the date of diagnosis. PD-NETs are high-grade cancers with an aggressive course resembling NETs arising in lung. WD-NETs contain neuroendocrine granules which stain for synaptophysin and/or chromogranin. Endoscopic ultrasonography guided fine-needle aspiration biopsy (EUS-FNA) can provide a non-operative cytological diagnosis of PNETs when the pathologist is provided with a good specimen such as the pellet of cells obtained through SurePath (SP).

Aims & Methods: EUS-FNA samples of pancreatic tumours were collected into a SurePath vial and slides prepared from the cellular pellet. The slides were stained for synaptophysin and Ki67 by immunohistochemistry (IHC) and examined by 2 independent senior cytopathologists.

Results: Sixteen (16) patients with a mean age 65 years (6 male) were identified by EUS with a suspected PNET. The mean tumour size was 16.2 mm +/- 4.2 mm. All had the morphology of a PNET and stained positive for synaptophysin. Conclusions: SP prepared cytology slides from solid pancreatic tumours provides enough diagnostic material for IHC staining for synaptophysin and Ki67 without the need for a formal excision biopsy. Morphology of SP slides is often diagnostic but a positive stain for synaptophysin makes the diagnosis irrefutable. The
PI440 EFFECTS OF IGF2BP2 ON GROWTH AND PROLIFERATION OF NEUROENDOCRINE TUMOR CELL LINES

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Introduction: Pancreatic neuroendocrine neoplasms (PENs) 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 (RBPs) 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 (IGF2BP2-3) to inhibit the different IGF2BP2s 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 progression paralleled 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-IGF2BP2 increased the expression of both the anti-angiogenic 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 IGF2BP2s on PENN progression. These in vitro findings were paralleled by distinct expression patterns of IGF2BP2 in human and murine PENN tissues. Elucidation of IGF2BP2-modulated RNAs in PENN cells is ongoing.

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 PENN.

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

References

PI442 EFFECTS OF LOW-DOSES ASPIRIN ON CLINICAL OUTCOME AND DISEASE PROGRESSION IN PATIENTS WITH GASTRO-ENTERO-PANCREATIC NEUROENDOCRINE TUMORS: RESULTS OF A MULTICENTRIC RETROSPECTIVE STUDY

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Introduction: The chemopreventive effect of aspirin (ASA) and other NSAIDs (non-steroidal anti-inflammatory drugs) 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 and 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 Misericordiae 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 (33%), pancreas (#82), small bowel (#90), appendix (27), colon (#49) 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 observed in patients taking ASA compared to those not taking it. Interestingly, in pNEN an inverse relation was observed between Ki67 and ASA assumption (r=-0.35, p=0.008). In small bowel NEN an inverse relation was observed between positive lymphnodes at surgery and ASA assumption (r=-0.3, p=0.02). As expected, the intake of ASA was related with the older age of the patients.

Conclusion: According to 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.

References
P1443 PANCREATIC LESIONS IN VON HIPPEL-LINDAU SYNDROME: CLINICAL AND EPIDEMIOLOGICAL DATA FROM A SINGLE CENTER

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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 of 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 - Torino) for management and follow-up of VHL were reviewed 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, histological and cytological analysis) and about the management.

Results: A total of 24 patients, 18 of which (75%) had a pancreatic involvement. Multiple simple 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). Simple cysts affected 13 patients, are 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, Ki67 (1.6:1). Simple cysts affected 13 patients, are 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, Ki67 <2%); 7 were located in the head and 2 in the tail (2 patients had multiple tumors). 5 out of the 7 pNET patients underwent surgery. The two SCAs were multiple (max 65 mm), mostly in the head and 2 in the tail (2 patients had multiple tumors). The probability of metastasis increased with tumor size of 2 cm or less. The probability of metastasis increased with tumor size of 2 cm or less. The probability of metastasis increased with tumor size of 2 cm or less. The probability of metastasis increased with tumor size of 2 cm or less.

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 previous reports, thus confirming our patient 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


P1444 IMPACT OF TUMOUR SIZE ON THE PROBABILITY OF METASTASIS AND SURVIVAL IN PATIENTS WITH PANCREATIC NEUROENDOCRINE TUMOURS (PNETs): A POPULATION-BASED STUDY

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Introduction: Neuroendocrine tumours (NET) consist of a diverse group of neoplasms that derive from diffuse neuroendocrine cells throughout the body. Commonly found in gastrointestinal (GI) duct and lung, they (GI) also arise in the pancreas. The relationship between tumour size and metastasis rate is poorly recognized in patients with pancreatic neuroendocrine tumours (PNETs). The impact of tumour size on prognosis was controversial in previous investigations. Aims & Methods: The aim of this study is to evaluate the prognostic impact of tumour size on survival outcomes and its correlation with risk of metastasis in a large PNET cohort, including all stages. Methods: PNET cases diagnosed from 1988 to 2013 were retrieved from the Surveillance, Epidemiology, and End 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 tumour size and probability of metastasis.

Results: A total of 5424 patients were identified. There were 1226 patients (22.6%) with tumour size of 2 cm or less. The probability of metastasis increased in a non-linear fashion with increasing tumour sizes. In univariable 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, tumour size was an indicator for metastasis (HR = 1.010, 95% CI: 1.008-1.012, P = 0.001 and size <20 mm was an independent prognostic factor for good survival (HR = 1.211, 95% CI: 1.048-1.399, P = 0.009 for size < 21-40 mm; HR = 1.282, 95% CI: 1.163-1.474, P < 0.001 for size >40 mm). For tumours ≤20 mm, surgical treatment was associated with significantly improved survival compared with those patients who did not undergo operation (P<0.001).

Conclusion: Tumour 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 ≥20 mm, surgical treatment should be considered preferably.

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

Reference

at 4 patients. The mean age of our MEN-1 patients was 51 and the age at diagnosis was 41.8. The mean plasma calcium level was 11.46 mg/dl and there was no history of renal calculi at any of them.

**Conclusion:** The family presented here is the one which had the largest number of affected individuals with genetic and clinical properties of MEN-1 at Turkey. Because the patient described here is the male with benign mono-epithelial tumor causing loss of function that is described for the first time. Also at MEN-1 families, counseling to prevent the neoplasia development and to prevent the new family member to be affected with PGD has a pivotal importance. We could point out that awareness is the most important caution for prevention.

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

PI1446 PROGNOSTIC VALUE OF THE DIFFERENT PRETREATMENT BIOMARKERS FOR PATIENTS WITH NEUROENDOCRINE TUMORS

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**Introduction:** Several inflammatory response materials could be used for prediction of progress in cancer patients. The neutrophil lymphocyte ratio (NLR), platelet lymphocyte ratio (PLR), thrombocytosis (the platelets number >400x10^9/mm^3) 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 Fundeni 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% of 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 in 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**
retrospectively 103 patients with positive lateral margin after ER from January 2005 to December 2015, in single tertiary center. Clinicopathological data were retrieved to assess the local recurrence rate, survival rate, procedure related adverse events.

Results: Of the 103 patients, 27 patients (26.4%) underwent early re-treatment within 3 months after initial ER/17 patients in re-do ESD, 10 patients in additional surgery). And 76 patients (73.6%) were observed under close surveillance. Median duration of follow-up period was 45.7(6–132) months. Recurrence rates of early re-treatment group(3.7%, n=1/27) was lower than surveillance group(18.4%, n=13/70, p=0.05). Five-year survival rates not significantly different between the two groups, at 100%, 97.4% respectively. In close surveillance periods, 12 patients were confirmed to local recurrence by follow-up biopsy, then delayed re-treatment was performed (7 patients in re-do ESD, 5 patients in surgical resection). Median duration of follow-up period was 27.5 (2.6–31.7) months. Totally, a total of 24 patients were treated with re-ESD, and 17 patients were treated with additional surgery. Among these two groups, there were no significant difference in recurrence rates (8.3% vs. 0%) and five-year survival rates (both 100%). However, adverse events related to treatment was more frequent in additional surgical group (2 ileus, 1 umbilical hernia).

Conclusion: The additional treatment should be recommended for patients with positive lateral margin after initial ER for EGCs. In addition, re-ESD which have a similar efficacy and a better quality of life, compared to additional surgery is a favorable option for control of recurrence or residual EGCs.

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

PI450 EFFICACY OF THE FORCED COAGULATION MODE WITH LOW-HIGH FREQUENCY POWER SETTING DURING ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Bleeding control is one of the most important factors to success of endoscopic submucosal dissection (ESD) in safety. We have reported the endoscopic coagulation technique using soft coagulation mode (S method) is effective for the prevention of bleeding when relatively large vessels penetrating between muscle layers are dissected. However we have thought that S method is insufficient especially for large vessels such as more than 2 mm, we have to use hemostatic forceps for preventing hemorrhage despite treating them with soft coagulation mode with low-high frequency power setting (F1-10 method) can exhibit coagulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel prevascularization.

Aims & Methods: We investigated the deference of hemostatic ability between S method and F1-10 method in clinical study and ex vivo study. In clinical study we analyzed retrospectively their hemostatic ability by consecutive six gastric ESD cases in each groups excluded some cases, which have the risk of affecting data, at 87.2% (n=54) and 95.4% (n=49) in the S and F1-10 methods, respectively. The bleeding rate after vessel processing was 18.4% (8/49) and 4.8% (3/62) in the S and F1-10 methods, respectively. No significant difference was found between the S and F1-10 methods.

Discussion: In ex vivo study, to investigate the coagulation mechanism of those two different power settings was evaluated the peak voltage, current elapsed time, and electric energy by using the data recording program (VIO DOKU) and the width and depth of coagulation was measured on macro- and microscopic levels using porcine tissues. The results: the total number of vessels processed by endoknife prevasculariation were 49 and 61 vessels in the S and F1-10 methods. The median vessel diameter was 2 mm in the S method and 1.5 mm in the F1-10 method. The median frequency of the compressed vessel was twice in both methods, and the median coagulation time was 9s and 10s in the S and F1-10 methods, respectively. No significant difference was found between the S and F1-10 methods. The bleeding rate after vessel processing was 18.4% (8/49) and 4.8% (3/62) in the S and F1-10 methods, respectively (P=0.058, odds ratio [OR]: 3.84, 95% confidence interval [CI]: 0.86–15.34). No statistically significant differences were found; however, the F1-10 method strongly showed a trend in preventing bleeding after prevasculariation compared with the S method (P=0.08). We further investigated the bleeding rates of the large vessels, defined as ≥2 mm in diameter. There were 26 and 29 large vessels in the S and F1-10 methods, respectively. The bleeding rates of the large vessels were 26.9% (7/26) and 3.4% (1/29) in the S and F1-10 methods, respectively, which were significantly different (P=0.021, OR: 10.32, 95% CI: 1.17–90.78). In ex vivo study, the median peak voltage was 172 Vp and 540 Vp in the S and F1-10 methods. The median current elapsed time was 0.22s and 1.54s in the S and F1-10 methods. The F1-10 method could keep the electric current longer than the S method. The mean total electrical energy was 6.34 W and 12.5 W in the S and F1-10 methods. F1-10 method was able to give larger electrical energy in the positive block. And the width and depth of coagulation in F1-10 method spread wider and deeper in macro- and microscopic sections.

Conclusion: F1-10 method is suggested to achieve a stronger hemostatic effect than S method in prevascularized procedures to identify large vessels especially for large vessels such as more than 2 mm. The bleeding rates after vessel processing were 18.4% (8/49) and 4.8% (3/62) in the S and F1-10 methods, respectively (P=0.058). 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 endotheraphy (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 endotheraphy compared (overall odds ratio 0.10, p < 0.0001).

Table 1: Mean procedural counts at the point of UGI certification

<table>
<thead>
<tr>
<th></th>
<th>UGIB</th>
<th>Total</th>
<th>Therapy</th>
<th>DOPS</th>
<th>Argon</th>
<th>Banding</th>
<th>Clip</th>
<th>Probe</th>
<th>Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>346</td>
<td>10.7</td>
<td>2.6</td>
<td>2.1</td>
<td>4.4</td>
<td>1.6</td>
<td>1.6</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Non-medical</td>
<td>323</td>
<td>1.1</td>
<td>0.29</td>
<td>0.3</td>
<td>0.4</td>
<td>0.1</td>
<td>0.1</td>
<td>0.3</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Training on endotherapy prior to certification is limited. The current UGIB certification processes do not provide a consensus on ideal modality of endotheraphy for UGIB. In response, the JAG QA team have recently released new DOPS forms specific to UGIB, and are consulting on introducing formal certification in endotherapy for UGIB.

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

Reference: 1. GMC National Training Survey Results 2016, Gastroenterology.
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 1: Patient characteristics and outcomes**

<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>
<tr>
<td>Accuracy</td>
<td>98%</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>100% [95% CI (96%–100%)]</td>
</tr>
<tr>
<td>Specificity</td>
<td>0% [95% CI (0%–84%)]</td>
</tr>
<tr>
<td>Positive predictive value</td>
<td>98% [95% CI (93%–99.7%)]</td>
</tr>
<tr>
<td>Negative predictive value</td>
<td>NA</td>
</tr>
</tbody>
</table>

**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 direct 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 BSC, Xlumena, Cook, Olympus, Merit Endotek, Aspire Bariatrics, GI Dynamics, Apollo, Fuji, Pentax, Emcision, Concordia, Mi Tech, Maunakea Tech, Ninepoint Medical, W.L. Gore, ASGE. M. Kahaleh: Grants from BSC, Xlumena, Cook, Olympus, Merit Endotek, Aspire Bariatrics, GI Dynamics, Apollo, Fuji, Pentax, Emcision, Concordia, Mi Tech, Maunakea Tech, Ninepoint Medical, W.L. Gore, ASGE. All other authors have declared no conflicts of interest.

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**P1453**

**DOES “INVISIBLE” DYSPLASIA IN BARRETT’S OESOPHAGUS REALLY EXIST?**

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**Introduction:** Barrett’s oesophagus (BO) is the main risk factor for oesophageal adenocarcinoma (OAC). International guidelines recommend endoscopic surveillance for early detection of dysplasia (DYS) and/or OAC but current biopsy protocols can miss areas of endoscopically unapparent neoplasia. At present, advanced diagnostic imaging technologies and specific endoscopist and pathologist expertise in detecting the subtle phenotypic changes associated with DYS/OAC are available only in tertiary care referral centres. Advanced diagnostic imaging technologies and specific endoscopist and pathologist expertise in detecting the subtle phenotypic changes associated with DYS/OAC are available only in tertiary care referral centres.

**Aims & Methods:** The aim of this study is to investigate the diagnosis changes after BO assessment in a tertiary care referral centre. 119 consecutive patients [male = 103, female = 16; median age = 58 (50.64)] referred to the Veneto Institute of Oncology (IOV-IRCCS) BO Unit between 01/03/2015 and 01/03/2017 were considered. Patients were divided in 3 groups according to the admitting diagnosis (AD): BO patients without DYS/OAC or visible lesions (Group 1, n = 82); BO patients with DYS/OAC but no visible lesions (Group 2, n = 33); BO patients with DYS/OAC and visible lesions (Group 3, n = 4). All patients underwent an endoscopy under deep sedation at IOV with HD magnification endoscopes + NBI + acetic acid chromoendoscopy. Target biopsies and/or EMR were obtained in case of endoscopically visible lesions; 4-quadrant biopsies 2 cm were obtained otherwise. All the specimens were diagnosed by two expert GI pathologists, who reached a final diagnosis (FD). In Group 2 patients where FD was BO without DYS/OAC, previous histology was reviewed by two expert pathologist.

**Results:** Results are summarized in Table 1. Group 1 (n = 82): FD of DYS/OAC with visible lesion was reached in 2 out of 82 patients (2.4%), both treated by EMR + RFA. No one had a FD of DYS/OAC without visible lesions. Group 2 (n = 33): FD of DYS/OAC with visible lesions was revealed in 13 out of 33 patients (39.4%); 11 were treated by EMR + RFA; 1 by surgery and 1 chemotherapy/radiotherapy. In 20 patients the AD was downgraded to unconfirmed BO; in 19 patients (57.6%), a review of previously taken biopsies by expert pathologist excluded neoplasia. In only one patient no lesion was found but the review of original histology slides confirmed a low-grade DYS and the patient was treated by RFA. Group 3 (n = 4): DYS/OAC was confirmed in all the 4 patients (2 treated by EMR + RFA, and 2 by surgery).

**Conclusion:** When upper endoscopy is performed in a BO reference center where specific facilities and expertises are available (i.e. deep sedation, HD magnification endoscopes, chromoendoscopy, expert endoscopist and pathologist) “invisible” DYS is a very rare diagnosis.

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

**References:**


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**P1454 SAFETY, EFFICACY AND CLOSURE TECHNIQUES OF ENDOSCOPIC FULL THICKNESS RESECTION-INITIAL CLINICAL EXPERIENCE**

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**Introduction:** Endoscopic full-thickness resection (EFTR) for sub-epithelial lesions (SEs) 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 SEs.

**Aims & Methods:** Prospective database of patients undergoing EFTR for SEs over 6-years (2011–2017) was abstracted. Patient selection for EFTR-endoscopy, endoscopic ultrasound (EUS) and CECT. Inclusion criteria: diagnosed lesions, predominantly endophytic component and absence of features of invasive malignancy. Exclusion criteria: patients unfit for general anesthesia or major Intervention procedure, uncorrectable coagulopathy or high risk features for malignancy. All procedures performed under general anesthesia with endotrachial intubation. High-definition endoscope (GIF-HQ-190 or CFI-HQ-190, Olympus Corp, Japan) with distal transparent hood and carbon dioxide insufflation used in all. After submucosal (SM) elevation by Gelfoam, mucosal incision and SM dissection performed to expose SE. Encapsulated SE intubated maintaining intact capsule. Adherent and attached muscularis propria (MP) layer fibers divided. IT or Dual-knife170 used for dissection and coag-grasper for hemostasis.

**Results:** Total N = 18 (M: F 11:7), mean age 53.6 (Range 28–78). Presentation – GI bleed (73.8%), abdominal pain (42%), non ulcer dyspepsia, 1, rectal mass – 4, asymptomatic, incidentally diagnosed (63.5%). 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 endolips), failure-1 due to undetected large epiploic component-surgical resection. Histopathology with
IHC-GIST–(93.0%);neuroendocrine tumor–3(16%), leiomyoma–1, schwannoma–1. The cell diameter of the GIST was 1(0.4%) larger than the angle of the gastric wall. The cell diameter of the GIST was 1.7 cm (range 0.7-6.0 cm). The success rate of EFTR was 98.9% (273/276). EFTR was failed in 3 cases: one case was out of control because of bleeding into enterocoeica, two cases required conversion into laparoscopic surgery because of absent lobulations of the tumor outside the cavity. The median operation time was 65 min (range, 14-210 min). In the resection rate was 98.1% (268/273), the piecemeal resection rate was 1.5% (5/273). The median length of hospital stays was 4.4 days (range, 1-23 days). Pathological outcomes revealed that the mean size of the tumor was 137 (49.2%) leiomyomas, 13 (47.3%) schwannomas, 8 (29.9%) calcifying fibrous tumors, 7 (2.5%) glomus tumors, 5 (1.8%) displaced pancreases, and 3 (1.1%) fibroblasticomas. The procedure-related complications were as follows. Different degrees of gastric antral occluded occurred in 168 (60.9%) cases, among which 24 (8.7%) cases required analgesics. Pneumoperitoneum occurred in all the patients and was treated successfully with peritoneocoeica decompression. Seroperitoneum occurred in 15 (5.4%) cases, localized peritonitis occurred in 3 (1.1%) cases, and digestive tract leakage occurred in 1 (0.4%) case. All the cases with above complications recovered spontaneously or after conservative treatments. No massive bleeding or abdominal abscess was found after EFTR. None of the 273 cases developed procedure-related death. No tumor residual or recurrence was found during the follow-up period ranging 3–55 months.

Conclusion: EFTR without laparoscopic assistance is minimally invasive, safe, and effective for treating gastric and duodenal SMTs, which originate from the MP layer and adhere tightly to the serosa. High en bloc resection rate could be achieved. However, a larger number of the cases and long-term outcome deserve further research.

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

P1455 BLUE LIGHT IMAGING AND LINKED COLOR IMAGING FOR DETECTION AND CHARACTERIZATION OF CHRONIC GASTRITIS
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Introduction: Current standard in the characterization of gastric mucosal changes is the use of virtual chromoendoscopy with magnification to visualize the pit pattern and vascular changes. The most recent development in light emitting technology is the so called Multi Light Illumination, that composes light out of 4 coloured LED. Blue Light Imaging (BLI) is composed of a continuous spectrum with peaks at 410 and 430 nm to enhance surface and vascular structures. Linked Color Imaging (LCI) uses BLI light together with post processing that realocates colour tones resulting in a high contrast of different red tones. Until now only few data exist about the use of LCI and BLI in chronic gastritis (CG).

Aims & Methods: We aimed to analyse the use of LCI and BLI in detecting and characterizing of chronic gastritis and premalignant conditions of the stomach. The study was carried out in our endoscopic laboratory. All patients gave written informed consent. In all cases an endoscope equipped with zoom (Fujifilm EG-760Z) was used. Endoscopic classification was based on the following parameters: normal gastric mucosa was defined as mucosa with visible superficial capillary network (SCN) without any focal lesions; atrophy (AG) was defined by whitening of the mucosa with visible deeper vascular architecture in white light, BLI and LCI; intestinal metaplasia (IM) was diagnosed if mucosa had visible rugae/squamoid surface with whitening in LCI or white light or light blue crescent sign in BLI; CG was diagnosed in case of loss of SCN or focal lesions not matching the definition of other focal lesions or cancer. Biopsies were sampled according to the updated Sidney classification system and in addition of every visible focal lesion. After endoscopy a prediction of histology was made by the endoscopist.

Results: We investigated 24 patients (15 female, 9 male, age 65 yrs (25–87yrs)). H. pylori was detected by histology or urease test in 7 patients. 3 patients showed normal gastric mucosa, 13 patients presented IM or AG either in the antrum or the corpus. According to MAPS criteria 7 patients had extensive disease with premalignant conditions in both, antrum and corpus. The concordance of endoscopic classification and histology was 79.1% (19/24) in the antrum and corpus each. Despite the inconcordance of histology and endoscopic diagnosis in 5 cases the intervals for surveillance according to MAPS guidelines would have been correctly respected with the use of endoscopic assessment in all cases.

Conclusion: LCI and BLI are accurate in detection and characterization of changes in gastric mucosa with an acceptable concordance to histology. These new imaging modalities are a step towards precise endoscopic diagnosis of gastric mucosal changes and have the potential to reduce the number of unnecessary histologic investigations and offer the possibility for more appropriate endoscopic diagnosis.

Disclosure of Interest: J. Weigt: Research and presenter for Fujifilm. All other 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
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Introduction: Given diminishment of quality of life caused by surgery in the stomach and duodenum, a minimally invasive technique is desirable for gastric and duodenal submucosal tumors (SMTs).

Aims & Methods: We aimed to assessed the value of endoscopic full-thickness resection (EFTR) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscular 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 orientated 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 duodenum and 1 located in duodenal bulb. The angle of the gastric wall was 1.7 cm (range 0.7-6.0 cm). The success rate of EFTR was 98.9% (273/276). EFTR was failed in 3 cases: one case was out of control because of bleeding into enterocoeica, two cases required conversion into laparoscopic surgery because of absent lobulations of the tumor outside the cavity. The median operation time was 65 min (range, 14-210 min). In the resection rate was 98.1% (268/273), the piecemeal resection rate was 1.5% (5/273). The median length of hospital stays was 4.4 days (range, 1-23 days). Pathological outcomes revealed that the mean size of the tumor was 137 (49.2%) leiomyomas, 13 (47.3%) schwannomas, 8 (29.9%) calcifying fibrous tumors, 7 (2.5%) glomus tumors, 5 (1.8%) displaced pancreases, and 3 (1.1%) fibroblasticomas. The procedure-related complications were as follows. Different degrees of gastric antral occluded occurred in 168 (60.9%) cases, among which 24 (8.7%) cases required analgesics. Pneumoperitoneum occurred in all the patients and was treated successfully with peritoneocoeica decompression. Seroperitoneum occurred in 15 (5.4%) cases, localized peritonitis occurred in 3 (1.1%) cases, and digestive tract leakage occurred in 1 (0.4%) case. All the cases with above complications recovered spontaneously or after conservative treatments. No massive bleeding or abdominal abscess was found after EFTR. None of the 273 cases developed procedure-related death. No tumor residual or recurrence was found during the follow-up period ranging 3–55 months.

Conclusion: EFTR without laparoscopic assistance is minimally invasive, safe, and effective for treating gastric and duodenal SMTs, which originate from the MP layer and adhere tightly to the serosa. High en bloc resection rate could be achieved. However, a larger number of the cases and long-term outcome deserve further research.

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

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Introduction: Given diminishment of quality of life caused by surgery in the stomach and duodenum, a minimally invasive technique is desirable for gastric and duodenal submucosal tumors (SMTs).

Aims & Methods: We aimed to assessed the value of endoscopic full-thickness resection (EFTR) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscular 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 orientated 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,
**P1458** LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION(ESD) FOR RELATIVE INDICATION GROUP OF EARLY ESOPHAGEAL SQUAMOUS CARCINOMA (ESEC) IN AGED PATIENTS

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Introduction: According to the Japanese Esophageal Society Guidelines, Early Esophageal Squamous Cell Carcinoma (ESEC) involving the muscularis mucosa or <200μm 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.

Between January 2008 and December 2013, a total of 158 aged ESEC patients were included in the present retrospective study. Prognosis outcomes were analyzed.

Results: 89 patients included in absolute indication (AI) group and 69 in RI group, the baseline characteristics were balanced between two groups. During the follow-up time (median 56 (1-108) months), short-term adverse events (4.3% vs 1.1%, p = 0.319) and postoperative stricture rate (31.8% vs 21.3%, p = 0.134) were higher in RI group than in AI group; 4-year recurrence-free survival rate (85.8% vs 87.2%, p = 0.561), metastasis-free survival rate (100 vs 96.8%, p = 0.437), overall survival rate(96.6% vs 90.0%, p = 0.613) and cause-specific survival rate(98.8% vs 98.5%, p = 0.264) for AI group and RI group were comparable.

Conclusion: Aged RI ESEC patients without AT(chemotherapy or chemoradiotherapy) 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.

**P1459** RETROSPECTIVE ANALYSIS ON SUSPICION OF FOREIGN BODY INGESTION AND FOOD IMPACTION ON GASTROENTEROLOGY EMERGENCIES

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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 emergency endoscopies, n = 1309, of them 69.1%(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 FB. The least frequently found foreign bodies were most food masses (n= 78 with 18%) 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 of otolaryngology; 2 for surgery and 10 were deferred to esophagy with sedation, in operating room). Endoscopy under sedation was performed in 20 cases (9.7%). About 1/4 had associated comorbidities, the most common were esophageal ring in 22 (10.7%) and benign stenosis in 17 (8.3%) 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

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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 30 experience. However, there was no statistical difference from the first (63.5±5.40) to the second quarter (44.7±5.31, p = 0.19), to the third quarter (40.7±7.28, p = 0.08), and to the fourth quarter (40.8±2.31, 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 (92.6±4.37) showed lower procedure time than middle (46.6±4.02, 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
P1462 CAP ASSISTED UPPER ENDOCOSCOPE VERSUS SIDE-VIEWING ENDOCOSCOPE FOR EXAMINATION OF THE MAJOR DUODENAL PAPILLA: A RANDOMIZED, BLINDED, CONTROLLED, NON-INFERIORITY CROSSOVER STUDY (CAPP-A II STUDY)

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Introduction: Examination of major duodenal papilla (MDP) by standard forward-viewing is limited and the use of side-viewing endoscope (SVE) is mandatory. Cap assisted esophagogastroduodenoscopy (CA-EGD) utilizes a cap fitted to the tip of the endoscope that can depress the mucosal folds and thus might improve visualization of MDP. The aim of this study was to compare CA-EGD to SVE for complete examination of the MDP.

Aims & Methods: Prospective, randomized, blinded, controlled, non-inferiority crossover study. Subjects selected 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 MDP were 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 MDP 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 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 MDP and can replace the SVE for diagnostic indications.

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

P1463 INACCURACY OF CAMBRIDGE PROTOCOL FOR PATIENTS HARBOURING CHD1 MUTATION: A CONSECUTIVE SERIES

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Introduction: Hereditary diffuse gastric cancer (HDGC) accounts for 1 to 3% of all gastric cancer. It can be caused by a germline mutation of the gene CDH1. Life time risk for gastric cancer is 80% with a mean age at diagnosis of 40 years. Affected individuals generally present multiple foci of signet ring cell carcinoma (SRCC) scattered throughout the gastric mucosa, difficulty detected by endoscopy.

Aims & Methods: The aim of this study was to assess the validity of Cambridge protocol in patients with proven pathological germline mutation of the gene CDH1. A prospective cohort study was performed between September 2016 and March 2017 in 11 patients with CDH1 mutation. They perform a base line high-resolution endoscopy (Olympus-GIF-HQ190) with random biopsies according Cambridge protocol and additional targeted biopsies of suspicious lesions. The total number of biopsies and the total number and localization of SRCC foci was registered. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To access the validity of Cambridge protocol with a high resolution endoscopy in patients with proven pathological germline mutation of the gene CDH1.

Results: During the 11 endoscopies a total of 353 biopsies (129 random biopsies and 24 targeted biopsies; mean of 32.1 biopsies per patient) were performed. Two patients presented 1 SRCC foci in random biopsies, being that one of them presented only 1 foci. The total number of biopsies and the total number and localization of SRCC foci was registered. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To access the validity of Cambridge protocol with a high resolution endoscopy in patients with proven pathological germline mutation of the gene CDH1.

Conclusion: Despite the use of high-resolution endoscopes and the high number of random biopsies, endoscopic evaluation presents many limitations for the diagnosis of HDGC. According to literature, prophylactic total gastrectomy remains the treatment of choice for CDH1 mutation carriers.

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

References

P1464 SINGLE-CENTER CLINICAL EXPERIENCE WITH A RECENTLY DEVELOPED FULL-THICKNESS ENDOCOSCOPE CLIP

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Introduction: Endoscopic clips are used in a variety of clinical situations in GI endoscopy—for arrest of bleeding or for closure of bowel perforations or chronic fistulae. Conventional through-the-scope clips often cannot provide optimum results; and therefore full-thickness (FT) over-the-scope (OTS) clips have been devised.

Aims & Methods: Current study describes the clinical experience of use of a recently developed FT OTS clip (Padlock™, Aponos Medical, USA). Data from a prospectively maintained database of all patients undergoing the new technique were abstracted. Clinical details, primary diagnosis, history of previous endotherapy, endoscopic procedure, indications for FT OTS clip usage, technical and clinical success and early and delayed adverse events were recorded. The clip-clip is available in two different sizes for use in upper and lower endoscopy. It is supplied preloaded on a cartridge that fits on the distal end of the endoscope. The trip-wire travels alongside the endoscope, enabling additional instruments to be passed through the endoscope channel, and special double-channel endoscope is not required for its application. Technique of clip application— the clip was loaded on the distal end of the endoscope and endoscope advanced to site of interest. Bowel wall defect or bleeding point was positioned within the clip and strong suction was applied. Clip was fired by closing the handle on the delivery system. Suction was slowly released and site was inspected.

Results: Total 21 clips used in 19 patients. M:F=12:7, mean age–7.9 years (range –24–94 years). Indications for FT OTS clip use—severe GI bleeding–7 (36.8%) (duodenal ulcer bleed–5, rectal ulcer–1, bleed during ESD for rectal lateral spreading tumor–1); for closure of bowel perforation during endoscopic resection–7 (36.8%) (gastric–3, duodenum–2, rectum–2); and closure of chronic bowel fistulae–5 (26.3%) (oesophagus–3, duodenum–1, rectum–1). Previous h/o endotherapy–3/7 of bleeding patients, primary therapy using OTS clip in remaining 16. Technical success was 100%. Two patients needed two clips each due to large size of defect. Clinical success–bleeding arrested in 7/7 (100%); bowel perforation sealed–7/7 (100%); fistula closure successful–4/5 (80%). In one patient of chronic duodenal fistula, fistula reopened 12 weeks after initial sealing of fistula and required surgery. Follow up at 4 weeks revealed no delayed adverse events in any patient.

Conclusion: The new OTS Clip (Padlock™, Aponos) is safe and effective for treatment of severe bleeding and for closure of post ER full-thickness defects and chronic fistulae. Further studies with larger sample size are recommended.

Disclosure of Interest: A. Bapaye: Speaker- Boston scientific corporation, Cook endoscopy, TaeWoong medical, Olympus
All other authors have declared no conflicts of interest.

P1465 ENDOCOSCOPE AMPLULLECTOMY OUTCOMES IN A TERTIARY ENDOSCOPY DEPARTMENT

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Introduction: Endoscopic resection of ampullary adenomas has increased in the last decade due to the high morbidity with a high mortality in patients undergoing surgical procedures.

Aims & Methods: This study aims to evaluate the outcome of endoscopic ampullectomy (EA) in a tertiary endoscopy department. We included in the study patients that underwent EA between January 2014 - April 2017 at the Regional Institute of Gastroenterology and Hepatology Cluj-Napoca, Romania. All patients had a benign pathological result prior to the EA. Post-procedural complications such as bleeding, perforation, cholangitis, pancreatitis and mortality were analyzed. Data about resection type, post EA histology and 1 year follow-up was also processed.
Results: 19 patients underwent EA, with a mean age of 63.5 ± 17.7 years and a success rate of 63(20–81). The tumor in the upper edge of the tumor was 20.4 ± 7.5 cm. The male to female ratio is 0.7:1. An endoscopic resection was done in most cases (15/19 (79.9%)). 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
1. Stavropoulos S, Desilets D, Fuchs KH et al; Per-oral endoscopic myotomy white paper summary; Gastrointestinal Endoscopy; 2014;1:1–15

PI466 PER ORAL ENDOSCOPIC MYOTOMY: UPDATED RESULTS FROM A UNITED KINGDOM CASE SERIES

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Introduction: Peroral endoscopic myotomy (POEM) has been adopted as a minimally invasive treatment option for achalasia and even spastic oesophageal conditions1. 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 ≤2/2 or a reduction in 4 points from baseline. Follow up data at 3 and 12-24 months (m) post-POEM was analysed using the Wilcoxon signed rank 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 incision/major bleeding.

Table 1: Baseline characteristics

<table>
<thead>
<tr>
<th>Patient Demographics</th>
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<tbody>
<tr>
<td>Age (mean, SD, range) (years)</td>
<td>48.6 ± 13.5 (22–79)</td>
</tr>
<tr>
<td>Male (n) (%)</td>
<td>29 (57)</td>
</tr>
<tr>
<td>Female (n) (%)</td>
<td>22 (43)</td>
</tr>
<tr>
<td>Clinical Data</td>
<td></td>
</tr>
<tr>
<td>Duration of disease (mean, SD, range) (years)</td>
<td>4.4 ± 4.2 (0.25–25)</td>
</tr>
<tr>
<td>Eckardt Score (median, range)</td>
<td>8 (4–12)</td>
</tr>
<tr>
<td>Chicago Subcategorisation</td>
<td></td>
</tr>
<tr>
<td>Achalasia Type I (n) (%)</td>
<td>4 (8)</td>
</tr>
<tr>
<td>Achalasia Type II (n) (%)</td>
<td>42 (82)</td>
</tr>
<tr>
<td>Achalasia Type III (n) (%)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>DES</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Uncategorised (EndoFLIP used)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Non-Sigmoid Oesophagus (n) (%)</td>
<td>45 (88)</td>
</tr>
<tr>
<td>Sigmoid Oesophagus (n) (%)</td>
<td>6 (12)</td>
</tr>
<tr>
<td>Treatment History</td>
<td></td>
</tr>
<tr>
<td>Prior Achalasia Treatment</td>
<td>27 (55%)</td>
</tr>
<tr>
<td>Prior Botulinum Toxin Injection; BTX (n) (%)</td>
<td>9 (18)</td>
</tr>
<tr>
<td>Prior Pneumatic Dilatation; PD (n) (%)</td>
<td>13 (25)</td>
</tr>
<tr>
<td>Prior Heller Myotomy; LHM (n) (%)</td>
<td>9 (18)</td>
</tr>
</tbody>
</table>

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
1. Stavropoulos S, Desilets D, Fuchs KH et al; Per-oral endoscopic myotomy white paper summary; Gastrointestinal Endoscopy; 2014;1:1–15

PI467 NEW CHALLENGE FOR SAFER ENDOSCOPIC SUBMUCOUS DISSECTION USING CO2 LASER

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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 (L-ESD) has 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 L-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, time procedure, 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 in 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 ± 3.3% 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. Stavropoulos S, Desilets D, Fuchs KH et al; Per-oral endoscopic myotomy white paper summary; Gastrointestinal Endoscopy; 2014;1:1–15

PI468 LONG-TERM OUTCOME OF ACUTE CORROSIVE INGESTION: A PROSPECTIVE SINGLE-CENTER STUDY

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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 ≥15 years with high-grade (Zargar’s grade

Table 1 Continued

<table>
<thead>
<tr>
<th>Patient Demographics</th>
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<tbody>
<tr>
<td>Prior POEM (n) (%)</td>
<td>3 (6)</td>
</tr>
<tr>
<td>&gt; 2 prior treatments (n) (%)</td>
<td>4 (8)</td>
</tr>
<tr>
<td>ASA Physical Status Classification</td>
<td></td>
</tr>
<tr>
<td>ASA grade I (n) (%)</td>
<td>21 (41)</td>
</tr>
<tr>
<td>ASA grade II (n) (%)</td>
<td>22 (43)</td>
</tr>
<tr>
<td>ASA grade III (n) (%)</td>
<td>8 (16)</td>
</tr>
</tbody>
</table>

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
1. Stavropoulos S, Desilets D, Fuchs KH et al; Per-oral endoscopic myotomy white paper summary; Gastrointestinal Endoscopy; 2014;1:1–15
Grade 2A) corrosive-induced injury of upper gastrointestinal tract. Patients in whom the diagnosis could not be done or who were lost to follow-up 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 were analysed using SPSS version 17. The statistical analysis was done using the chi-square test and Student’s t-test. Parameters that 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 corrosive agent was not known. Nasogastric tube placement was done in 50%, nasojugal 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. A total of 71 patients in whom the median 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(97%) had weight loss and 11(18%) patients required investigation. In all, 43(73%) patients underwent barium study during follow up and the result was noted in 21(36%). The site of stricture was esophageal in 11(53%), stomach in 8(38%) and combined esophagogastric and stomach in 20(38%). 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 patients with Grade III B injury(19)(86.4%) with Grade III A injury, 10%(1/10) with II B injury and 20% (1/5) 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 ESOPHAGEAL AND GASTRIC LESIONS - RESULTS OF A PROSPECTIVE, CONTROLLED, CROSS-OVER STUDY
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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 histodiagnostic evaluation 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, especially 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 Timisora 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 1134(60.5%) 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%; Cedars-Sinai AUROC 0.63 (CI(0.50-0.75), Se=53.1%, Sp=73.9%, PPV=89.5%, NPV=27.4%; Baylor AUROC 0.52 (CI(0.51-0.73), Se=47.06%, Sp=66.6%, PPV=84.2%, NPV=25.2%. Re-bleeding: Rockall AUROC 0.7 (CI(0.67-0.73), Se=60.1%, Sp=83.4%, PPV=92.2%, NPV=71.4%); Cedars-Sinai AUROC 0.73 (CI(0.69-0.77), Se=84.8%, Sp=49.02%, PPV=13.7%, NPV=97%; Baylor AUROC 0.54 (CI(0.45-0.65), Se=35.1%, Sp=81.2%, PPV=16.2%, NPV=92.4%. 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=51.4%, NPV=67.4%, Death: Rockall AUROC 0.65 (CI(0.58-0.72), Se=79.4%, Sp=84.9%, 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=76.99%, 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 vs Rockall in estimating the hospitalization period (p=0.04) and re-bleeding (p<0.001), and Cedars-Sinai proved to be superior tor 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 PROCEDURE EVEN IN CANCER PATIENTS
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Introduction: Dysphagia and malnutrition is a common feature in up to 64% of cancer patients who undergo oncological treatment, and the need of radiotherapy or chemotherapy often worsens this 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 observed 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
P1472 A PROSPECTIVE, SINGLE-CENTER, CROSS-OVER CONTROLLED TRIAL OF CONFOCAL LASER ENDOMICROSCOPY ASSESSMENT OF PERSISTENT OR RECURRENT INTESTINAL METAPLASIA AND RECURRENT OF NEOPLASIA AFTER ENDOSCOPIC TREATMENT OF BARRETT’S ESOPHAGUS-RELATED NEOPLASIA (BORN)

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2Clinical And Transplant Pathology, Institute for Clinical and Experimental Medicine, Prague/Czech Republic

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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 endoscopy after 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 columnar-lined 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 diagnosis of high-grade intraepithelial neoplasia (HGIN), 7 patients (24%) had high-grade intraepithelial neoplasia (LGIN), 7 patients (24%) 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%.

Discussion: pCLE seems to be comparable to persistence/persistent 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. 16-2764/4A.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1477 AN ANALYSIS OF COMPLICATIONS FOLLOWING ENDOSCOPIC SUBMUCOSAL DISSECTION IN A WESTERN SETTING - MAKING THE CASE FOR A SHORTER LENGTH OF STAY

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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 10–15%. 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 (5 colorectal, 10 oesophageal, 5 gastric and 1 duodenal). 10 of these (48%) were early complications (6 bleeding, 4 perforation). The total complication rate was 5.1%. The most common complications were bleeding (4.6%) and perforation (2.9%). The rate of complications was higher among colorectal (8.3%) and oesophageal (5.4%) ESDs compared with gastric and duodenal (1.9%).

Conclusion: ESD in this Western setting was more commonly performed for colorectal and oesophageal lesions rather than gastric as seen in Japan. The complication rate is modest and almost all were managed successfully with an endoscopic approach. They occurred more commonly in gastric and duodenal sites. This may be related to the technical difficulties of resection or low volume of procedures performed at these locations. The use of anticoagulants is a risk factor for complications.

References

5. 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. Laboratory parameters 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 inflation. 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), 72.7% (8/11) of the patients who experienced complications were successfully managed endoscopically.

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


P1476 SYMPTOMATIC RESPONSE OF PYLORIC PNEUMATIC DILATATION, BOTOX INJECTION OR COMBINATION THERAPY IN PATIENTS WITH GASTROPARESIS OR DELAYED GASTRIC DILATATION

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Introduction: Therapeutic options for gastroparesis or delayed emptying following oesophagectomy with gastric transposition are limited. Although commonly performed, there are no studies addressing the relative merits of the endoscopic dilatation of the pylorus, botulinum toxin (Botox) injection or combination therapy. We assessed the symptomatic response of patients undergoing non-surgical pyloric intervention at a specialist tertiary centre.

Aims & Methods: 33 patients (13 male; mean age 45, range 17–80) underwent a total of 250 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. Endoscopic-therapeutic response was 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 treatments were 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


P1475 GASTROINTESTINAL ENDOSCOPY UNDER SEDATION IS ASSOCIATED WITH PNEUMONIA IN OLDER INPATIENTS–RESULTS OF A RETROSPECTIVE CASE-CONTROL STUDY

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Introduction: Apparent aspiration is a notable adverse event during gastroomestintoscopy under sedation (GES) [1, 2], but about the incidence and the role of innocent aspiration is scarce. Furthermore, patients undergoing endoscopy 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 colonoscopy [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. Laboratory parameters 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 inflation. 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), 72.7% (8/11) of the patients who experienced complications were successfully managed endoscopically.

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.
factor for delayed bleeding. Given that the majority of delayed complications occurred within 5 post-procedure, a standardised 5 day inpatient stay would prove futile in our cohort.

Disclosure of Interest: P. Bhandari: 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
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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 dilations

Results: A retrospective analysis of 75 patients was performed to evaluate the outcome of endoscopic dilatation of benign oesophageal strictures between October 2010 and November 2016. Streatches were classified as refractory when ≥5 endoscopic dilatations were needed with at least one dilation achieving ≥15 mm of diameter during the course of management of the oesophageal strictures.

Conclusion: Surgical aetiology was significantly associated with refractory benign oesophagaeal strictures and these patients were significantly more likely to require local corticosteroid injections during scheduled endoscopic dilatations.

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
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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 cases submitted to scheduled endoscopic dilations between October 2010 and November 2016. Clinical improvement was defined as dysphagia score ≤1.

Results: The study sample included 42 (56%) male patients and the mean age was 57±16 years. Dysphagia scale at baseline was 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 (13.5%), radiotherapy–10 (13.3%) and others–9 (12%). The location of the oesophageal stricture 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-Gilllard dilators–35 (46.7%) TTS-balloons–24 (32%) or both–16 (21.3%). The mean diameter of dilation achieved was 15.7±2.2 and a dilation diameter of ≥15 mm was achieved in 36 (76.4%) patients. Local injection of corticosteroids 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 = 0.002), higher 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 corticoid injection (OR 9.76, 95%CI 0.035–0.46, p = 0.02) 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 dilatations.

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
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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 endoscopy (NME) specialties.

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, formative 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. Numbers of gastroscopy and conventional colonoscopy awarded have been in steady state since 2013, whilst numbers for sigmoidoscopy and full colonoscopy continue to increase. Trainees awarded certification comprised mainly of GI (53.2%), GS (28.5%) and NME (15.5%) specialties. With the exception of FS, most certifications were awarded to GI trainees (Figure 2). Median procedural numbers (p <0.001) and formative DOPS count (p <0.001) pre-certification varied for each modality in the order of NME > GI > GS. Caecal intubation rates (CIR) at full certification were similar between GI (95.6%) and GS (95.6%, p = 0.81), but lower in NME (93.6%, p =0.02 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 trainee KPIs. Further studies are required to study the impact of recent changes to certification, and if variations in KPIs exist following certification.

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

P1481 EFFICIENCY AND SAFETY OF ENDOSCOPIC PAPILLECTOMY FOR TREATMENT OF DUODENAL PAPILLA TUMORS
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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 gastroduodenoucscopy 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. Statistical analysis: the original data (totally 40 cases) received endoscopic papillectomy. The procedure was completed with gastroscope in 32 cases and duodenoscope in 8 case. 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.
Pacemakers 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 pancreatic-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>
</thead>
<tbody>
<tr>
<td>Age (years, mean ± SD)</td>
<td>55.1 ± 10.0</td>
<td></td>
</tr>
<tr>
<td>Endoscope type</td>
<td>Gastroscope Duodensoscope</td>
<td>32 8</td>
</tr>
<tr>
<td>Resection method</td>
<td>EMR EPMR ESD</td>
<td>21 172</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>Tumor sizes (cm)</td>
<td>Longer diameter, Shorter diameter</td>
<td>2.02 ± 0.88, 1.50 ± 0.69</td>
</tr>
<tr>
<td>Bilary 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>
<td></td>
</tr>
<tr>
<td>Follow-up time (months, mean ± SD)</td>
<td>36.6 ± 28</td>
<td></td>
</tr>
<tr>
<td>Adverse events</td>
<td>Intraoperative bleeding</td>
<td>5% (2)</td>
</tr>
<tr>
<td></td>
<td>Postoperative bleeding</td>
<td>12.5% (5)</td>
</tr>
<tr>
<td></td>
<td>Perforation</td>
<td>2.5% (1)</td>
</tr>
<tr>
<td></td>
<td>Cholangitis</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pancreatitis, Mild, Moderate, Severe</td>
<td>20% (8), 7.5% (3), 10% (4), 2.5% (1)</td>
</tr>
<tr>
<td></td>
<td>Recurrence</td>
<td>16.2% (6)</td>
</tr>
<tr>
<td></td>
<td>Surgery</td>
<td>1.7% (3)</td>
</tr>
<tr>
<td></td>
<td>Mortality</td>
<td>1.7% (3)</td>
</tr>
<tr>
<td>EMR, endoscopic mucosal resection; EPMR, endoscopic piecemeal mucosal resection; ESD, endoscopic submucosal dissection; LGD, low-grade dysplasia; HGD, high-grade dysplasia; Tis, intraepithelial carcinoma; Tim, intramuscular carcinoma; Tsm, carcinoma with duodenal submucosal invasion.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Endoscopic papillary is proved to be efficient in treating papilla tumors 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


**P1482** CHANGES IN SCORING OF DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS) FORMS IN ENDOSCOPY TRAINING AND THEIR IMPACT ON COMPETENCE ASSESSMENT

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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 supervision-based scale that has been shown to be more reliable, with 4 ratings from maximal supervision, up to competent without supervision. We aimed to assess whether changes to the rating scale had affected distribution of scores and hence demonstrate validity.

Aims & Methods: We used the UK trainee endoscopy database (JETS) to collect DOPS scores for gastroscopy (n = 1934), sigmoidoscopy (n = 517), colonoscopy (n = 2296) and polypectomy (n = 370) in the 6-months before July 2016 (old DOPS) and those trainees at early stages of training procedures (n = 100). To allow analysis, the new DOPS rating scale was aligned 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. Results: For polypectomy (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 = 0.04), but not for colonoscopy (new 11.9% vs. old 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.

**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

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Introduction: Endoscopic resection of duodenal adenomatosa 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 adenomatosa (Spigelman 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 on the successful implantation of a mini-vacuum sponge with extended length of the suction tube and reduced in volume compared to a standard esophagal vacuum sponge.3

Aims & Methods: From September 9th, 2013 to March 20th, 2017 endoscopic resection of wide-spread duodenal or papillary adenomatoida 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 adenomatosis were included (2x papilla, 3x D2/D3 extrapapillary adenomata; 3x tubular; 3x HGIN, 2x LGIN). The macroscopic mean maximum diameter and perpendicularly 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 mini-vacuum sponge (ActiVAC 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 (m = 10 days, 4–14 days). An endoscopic/radiologic vacuum sponge exchange was performed every 3–5 days. In 4 cases additional atraumatic over-the-scope-clips (OTSC, Ovesco Tuebingen) were placed during the procedure and in 5/5 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 adenomatoida in D2/D3 is feasible and was safe in our collective using the application of a duodenal mini-vacuum solution 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, honorarium for lectures Boston Scientific Europe and US: research support, honorarium for lectures ERBE Elektromedizin: research support

All other 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
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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 (Choonlibrary, EMBASE, MEDLINE) from 1966 till September 2016 was searched. A systema-

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 polyps. Age over 70 years (OR, 1.48; 95% CI, 1.44–4.14) and metabolic syndrome (OR, 1.59, 95% CI, 0.87–3.00) were independent predictors for adenosomatous 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 adeno-

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

References

P1487 COMPARISON BETWEEN AN ASYMMETRIC (SMALL DOSE IN THE MORNING) AND A SYMMETRIC SPLIT-DOSE REGIMEN OF POLYETHYLENE GLYCOL PLUS BISACODYL FOR BOWEL PREPARATION FOR SCREENING COLONOSCOPY: A RANDOMIZED NON-INFERIORITY TRIAL
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Introduction: Bowel cleansing has a critical role to increase the quality and effec-

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, bow-

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

References

P1488 SINGLE BALLOON OVERTUBE-GUIDED COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A NEW APPROACH TO MANAGEMENT OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION
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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.

References

P1489 SEDATION IN COLORECTAL ESD: A SYSTEMATIC REVIEW OF WESTERN CLINICAL PRACTICE

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Introduction: Endoscopic Submucosal Dissection (ESD) for colorectal lesions is a highly skilled technique which over the last few years has been adopted by Western institutions. Management of colorectal neoplasia. There is no consensus in the literature regarding the technique of anaesthesia/sedation method for ESD. We aim to describe current sedation practices used in ESD in Western Hospitals.

Aims & Methods: A systematic literature search was performed to identify all articles describing colorectal ESD procedure performed in Europe, America and Australia. Electronic databases including PubMed, the Cochrane library and articles describing colorectal ESD procedure performed in Europe, America and Australia were searched. Original articles or abstracts for congress in English were included. The first author was sent the author of the identified articles in order to obtain additional information regarding sedation practice, if this was not explicitly detailed in the original articles. All articles were examined independently for eligibility by two reviewers (S.B. and M.S.). Any Disagreements were resolved by consulting a third reviewer (A.P.).

Results: This review resulted in 18 eligible original articles, of which (5/18) 27.8% were prospective studies, (7/18) 38.9% retrospective series and (6/18) 33.3% were abstracts presented at congresses. The mean number of ESD cases described was 35.7 cases per institution. Most of the institutions (16/18) 94.4% described the sedation strategy used in colorectal ESD in Western world is heterogeneous. Most institutions opted for deep sedation administered by anaesthesiologists within the endoscopy room. By and large, patients are admitted post procedure for observation. Greater sharing of experience is required to better understand the optimal method of sedation for this technique within the context of western practice.

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

References
Haute Autorite de Sante - Quand faut-il faire une colonoscopie de controle apres une polypectomie?

P1490 COMPUTER-ASSISTED POLYP MEASUREMENT OF 78 POLYPS DURING LIVE COLONOSCOPY (CAPME): A PROSPECTIVE STUDY

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Introduction: Colonic polyp size measurement is an important outcome in current endoscopic practice. Polyp size estimation is mandatory to determine the surveillance 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 most important 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 Pascal University (BP), 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- forth movement towards the polyp to obtain a photograph 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 endoscos- pists. 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 concordance 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 ERM was 0.972 (95% CI 0.963; P < 0.001). 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: Using a balloon overtube 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.

References

P1491 USING THE MULTI-ASSISTANT RATING SCALE (MARS) FOR ENDOSCOPIC NON-TECHNICAL SKILLS PERFORMANCE: AUGMENTS USE OF STANDARD KEY PERFORMANCE MEASURES IN INDEPENDENT COLONOSCOPISTS

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Introduction: Endoscopic Non-Technical Skills (ENTS) are an essential component of high-quality endoscopy giving information about performance in a team context however these are not routinely assessed as part of the key performance indicators (KPIs) for independently practising colonoscopists. We have developed a validated 360-degree assessment tool based on assistant ratings for ENTS (MARS) and with acceptable inter-rater agreement providing a more comprehensive view of the ENTS domain. We compared measured performance in these areas against existing key performance indicators which measure aspects of insertion and lesion detection skills.

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—Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) and Decision-making (D&M). 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.

### 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–May 2017). An overall positive correlation was identified between ENTS domains and CIR (COMM 0.58; SITA 0.66; LEAD 0.66; D&M 0.75) and PDR (COMM 0.49; SITA 0.55; LEAD 0.50; D&M 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 3 (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. 6% 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 management has higher costs and worse clinical outcomes. Recent technological developments have resulted in more accurate technologies for polyp detection and removal. One such technology is the EMI-137 imaging agent (Edinburgh Molecular Imaging (EMI)) which has demonstrated potential to enhance the sensitivity of colonoscopy.

### Aims & Methods:

We aimed to evaluate the potential cost-effectiveness of EMI-137 compared to standard WL colonoscopy in patients at high risk of colorectal cancer. A de novo economic model for patients participating in the UK National Bowel Cancer Screen Programme. The 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/III 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 Screen 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 CEO at Edinburgh Molecular Imaging
I. Wilson: I am the CEO at Edinburgh Molecular Imaging
All other authors have declared no conflicts of interest.

### Reference:


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### Table 1: Baseline characteristics, bowel cleansing and endoscopic findings.

<table>
<thead>
<tr>
<th>PATIENTS N = 136 (n)</th>
<th>Standard management (n = 70)</th>
<th>Educational booklet (n = 66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years) (median)</td>
<td>66.2 (36.8–78.4)</td>
<td>63.3 (30.7–78.3)</td>
</tr>
<tr>
<td>Alcohol consumption (g/day)</td>
<td>51.46%</td>
<td>51.52%</td>
</tr>
<tr>
<td>BMI (Kg/m²) (median)</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>Hypertension (136)</td>
<td>33 (47.14%)</td>
<td>33 (50.9%)</td>
</tr>
<tr>
<td>Smoking habit (136)</td>
<td>19 (27.14%)</td>
<td>15 (22.73%)</td>
</tr>
<tr>
<td>Alcoholism (135)</td>
<td>8 (15.19%)</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 (7.14%)</td>
<td>9 (13.64%)</td>
</tr>
</tbody>
</table>

(continued)
Table 1 Continued

<table>
<thead>
<tr>
<th>PATIENTS N = 136 (n)</th>
<th>Standard management (n=70)</th>
<th>Educational booklet (n=66)</th>
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</thead>
<tbody>
<tr>
<td>Chronic Obstructive Pulmonary Disease (135)</td>
<td>6 (8.70%)</td>
<td>5 (7.14%)</td>
<td>0.81</td>
</tr>
<tr>
<td>Obstructive Sleep Apnea Syndrome (136)</td>
<td>6 (8.57%)</td>
<td>3 (4.55%)</td>
<td>0.34</td>
</tr>
<tr>
<td>Cirrhosis (136)</td>
<td>2 (2.86%)</td>
<td>3 (4.55%)</td>
<td>0.95</td>
</tr>
<tr>
<td>Stroke (135)</td>
<td>8 (11.59%)</td>
<td>8 (12.12%)</td>
<td>0.93</td>
</tr>
<tr>
<td>Mild dementia (136)</td>
<td>3 (4.29%)</td>
<td>1 (1.52%)</td>
<td>0.34</td>
</tr>
<tr>
<td>Stroke (135)</td>
<td>8 (11.59%)</td>
<td>8 (12.12%)</td>
<td>0.93</td>
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<tr>
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<td>6 (8.70%)</td>
<td>5 (7.14%)</td>
<td>0.81</td>
</tr>
<tr>
<td>Appendectomy (136)</td>
<td>18 (25.71%)</td>
<td>4 (6.06%)</td>
<td></td>
</tr>
<tr>
<td>Colonrectal cancer</td>
<td>8 (11.43%)</td>
<td>8 (12.12%)</td>
<td>0.90</td>
</tr>
<tr>
<td>BBPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBPS Right Colon*</td>
<td>2(2–3)</td>
<td>2(2–3)</td>
<td>0.22</td>
</tr>
<tr>
<td>BBPS Mild Colon*</td>
<td>2(2–3)</td>
<td>2(2–3)</td>
<td>0.10</td>
</tr>
<tr>
<td>BBPS Left Colon*</td>
<td>2(2–3)</td>
<td>2(2–3)</td>
<td>0.37</td>
</tr>
<tr>
<td>Cecal intubation rates</td>
<td>67 (95.71%)</td>
<td>62 (93.94%)</td>
<td>0.49</td>
</tr>
<tr>
<td>Other surgery (136)</td>
<td>21 (30%)</td>
<td>19 (28.79%)</td>
<td>0.88</td>
</tr>
<tr>
<td>Hysterectomy (136)</td>
<td>8 (11.43%)</td>
<td>4 (6.06%)</td>
<td>0.27</td>
</tr>
<tr>
<td>Colonrectal cancer</td>
<td>8 (11.43%)</td>
<td>8 (12.12%)</td>
<td>0.90</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. Heart disease 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

PI1494 STUDY OF ULCERATIVE COLITIS COMPPLICATED BY PRIMARY SCLEROSING CHOLANGITIS
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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 PSC 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 colitis associated with PSC. We retrospectively examined the clinical features, including the clinical course and colonoscopic findings, of 25 colitis patients with PSC attending our hospital between 2000 and 2016.

Results: The male-female ratio was 12.13 and the age at diagnosis of PSC 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, 14 patients (67%) developed UC, and the latter was diagnosed by screening. There were 12 patients with UC (52%) and 11 patients with nonspecific colitis (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 patients with pancolitis and also involved the terminal ileum in 9 patients (48%). The Mayo score for colonic 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 enterocolitis received oral ursodeoxycholic acid (UDCA), including 13 patients with UDCA only (52%), 2 patients with combination of salazosulfapyridine (SASP) (8%) and UDCA in combination with 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 UDCA dose was 100 mg in 2 patients (8%), 300 mg in 15 (60%), and 600 mg in 9 (32%).

Conclusion: In colitis patients with PSC, there was no clear association between colonoscopic 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.

References

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Introduction: Endoscopic non-technical skills (ENTS), comprising of communication and teamwork, situation awareness, leadership and judgement and decision making, are recognised indicators of quality endoscopy and patient safety. Since July 2016, electronic assessment forms (DOPS) for UK trainee endoscopists have been updated to include DOPS 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 (pro-procedural, procedural, post-procedural and ENTS) 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 ENTS 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 specialities 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 < 0.001), surgical trainees (OR 1.21, p = 0.014), trainees performing polypectomy (OR 2.02, p < 0.001), and higher DOPS count (OR 1.03 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>Modality</th>
<th>Communication and Teamwork</th>
<th>Situational Awareness</th>
<th>Leadership</th>
<th>Judgement and Decision Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonoscopy</td>
<td>77%</td>
<td>75%</td>
<td>70%</td>
<td>68%</td>
</tr>
<tr>
<td>Dilatation</td>
<td>78%</td>
<td>75%</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>76%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>Gastrointestinal bleed</td>
<td>85%</td>
<td>83%</td>
<td>78%</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 and reliability. ENTS is an assessable domain within endoscopy training, with scores that correlate with other procedure-related skills, demonstrating construct validity and reliability. ENTS is an assessable domain within endoscopy training, with scores that correlate with other procedure-related skills, demonstrating construct validity and reliability.
P1496 MAKING COLONOSCOPISTS MORE AWARE OF THEIR ENDOSCOPIC NON-TECHNICAL SKILLS: IMPROVING FEEDBACK FORMATS DERIVED FROM THE MULTI-ASSISTANT RATING SCALE (MARS) TOOL

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Introduction: The development of Endoscopic Non-Technical Skills (ENTS) is associated with performance and high quality endoscopic 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 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 provision and scrutiny of ENTS domains of 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 feedback reports summarised the MARS 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.

P1497 OUTCOMES OF ENDOSCOPIC RESECTION OF COMPLEX COLORECTAL LESIONS REFERRED TO A TERTIARY INSTITUTION AFTER FAILED ATTEMPTS AT RESECTION OR EXTENSIVE SAMPLING

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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 these failed attempts and the effect 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.

Method: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2cm 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 failed 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.

Results: 437 lesions in 433 patients were assessed. Using EMR 9n = 340 and ESD and Hybrid ESD (n = 97). The mean lesion size was 5.5 cm (+/−3.0 cm). 225 (51%) lesions had been subjected to failed attempts at resection or heavy manipulation prior to referral. In 97 lesions (22%), an average of 1.5 range 1-5) previous attempts at resection had been made. In 43 attempts at transanal surgical resection in 25 patients. A further 128 lesions (29%) had been extensively sampled or tattooed Mean lesion size was 55.6 mm (+/−30.7 mm).

Initial endoscopic resection was deemed successful in 98% of cases after previous failed attempts, 97% of cases with prior heavy manipulation and 97% of other cases (p = 0.86). In b lace resection was possible in fewer patients with previous attempts at resection (14%, 31% and 42% respectively, p < 0.001). Complications regardless of failure were associated with failed attempts at resection and minimal sampling (14% versus 5% and 3%, p < 0.001). Recurrence rates were 24.1%, 14.6% and 12.2% respectively (p = 0.07). 95% of patients without invasive cancer who had prior failed attempts at resection or heavy manipulation were free from recurrence.

Conclusion: Failed prior attempts at resection or heavy manipulation of lesions reduces the chance of achieving en b lace resection and increases the risk of complications and recurrence. Nevertheless, specialist management in a dedicated tertiary unit results in safe and successful organ preserving 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.

P1498 NB1 VERSUS BLE WHICH MODALITY IS BETTER FOR OBSERVATION OF MUCOSAL BLOOD FLOW IN THE SMALL AND LARGE BOWEL USING NB1 (NARROW BAND IMAGING) OR BLE (BLUE LASER IMAGING)?

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Introduction: In recent years, significant advances and innovations have been made in gastrointestinal endoscopy 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 made a contribution to improving the diagnosis of lesions in the stomach, intestines, 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 the blue laser imaging (BLI) by Fujifilm Co., Ltd. These systems are applied to magnifying endoscopy in clinical practice. Studies have examined the use of NBI and BLI 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 with narrow band light by evaluating the usefulness 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-L100PZ, 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 with 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.

Results: 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

Example Feedback table - Situational Awareness Domain for Endoscopist 9

| SITA 1 | Pre-assessment of patient risks | GREEN |
| SITA 2 | Recognises problems in a timely fashion | GREEN |
| SITA 3 | Aware of working environment, minimises disruptions | RED |
| SITA 4 | Effectively troubleshoots technical problems that arise | BLUE |
| SITA 5 | Recognises and assesses pathological findings effectively | AMBER |
| SITA 6 | Reacts flexibly and effectively to unexpected or adverse circumstances | AMBER |
| SITA 7 | Aware of patient safety parameters during procedure, responds well | AMBER |
| SITA 8 | Considers other opinions and guidance when faced with an unexpected event | AMBER |
| SITA 9 | Predicts well the likely outcome of a situation and plans for this eventuality | AMBER |
| SITA 10 | Constantly checks patient aiming to minimise procedural discomfort | AMBER |
and O2 have relatively dark xenon light sources and maximum optical magnification of 200x in the small and large bowel. Our results show that magnifying observation with BLI is superior to Colonoscope: visualization of mucosal blood flow in the small and large bowel among the different endoscopic devices.

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
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Introduction: The aim of the present study is to better define the clinical characteristics at diagnosis and during follow-up of MCRA affected patients. Familial adenomatous polyposis (FAP) or MUTYH germline mutation. At present its clinical features, management and outcomes are not well studied. However, these patients should undergo a closer surveillance than those with sporadic adenomas.

Table 1:
| Proximal colonic pathology during colonoscopy | Table 1: Proximal colonic pathology during colonoscopy
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximal colonic pathology during colonoscopy</td>
<td>Table 1: Proximal colonic pathology during colonoscopy</td>
</tr>
</tbody>
</table>

References

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


Bowel Scope screening between July 2013 - July 2016 at St Mark's Bowel Cancer Screening Centre was performed. Epidemiological, procedural and polyp data were 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 as per the BCS protocol. 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. Presence of distal adenoma was an indication for colonoscopy after a screening flexible sigmoidoscopy. Outcomes of advanced adenoma in the distal colon were as follows: 14% 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 in the proximal colon. Presence of 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:
<table>
<thead>
<tr>
<th>Proximal colonic pathology during colonoscopy</th>
</tr>
</thead>
</table>

(continued)
All other authors have declared no conflicts of interest.

of optical diagnosis. Findings could be used as a guide to plan the certification process for implementation training appears important to maintain the performance. Our preliminary findings plateau by the 58th polyp observation. In-vivo feedback and continued standards 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.

Conclusion: 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.

Table 1: Trainees optical diagnostic performance

<table>
<thead>
<tr>
<th>Indication</th>
<th>Number of patients</th>
<th>Proximal advanced adenoma</th>
<th>Proximal SSA/P</th>
<th>Proximal advanced adenoma</th>
<th>Proximal SSA/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma &gt; 1 cm</td>
<td>153</td>
<td>14.4%</td>
<td>8.5%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Villous features</td>
<td>189</td>
<td>14.3%</td>
<td>3.2%</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>High-grade dysplasia</td>
<td>36.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (&gt; 1 cm non adenomatous polyp, &gt; 20 hyperplastic polyps, &gt; 3 adenomas)</td>
<td>169</td>
<td>5.3%</td>
<td>5.8%</td>
<td>1.6%</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Continued

<table>
<thead>
<tr>
<th>Indication</th>
<th>Number of patients</th>
<th>Proximal advanced adenoma</th>
<th>Proximal SSA/P</th>
<th>Proximal advanced adenoma</th>
<th>Proximal SSA/P</th>
</tr>
</thead>
</table>

Positive Predictive Value 89% 94% 88% 94% Negative Predictive Value 92% 92% 91% 93% 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.

P1502 LEARNING CURVE FOR OPTICAL DIAGNOSIS OF COLORECTAL POLYPS USING CUMULATIVE SUM ANALYSIS

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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. 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.

Table1: Trainees optical diagnostic performance

<table>
<thead>
<tr>
<th>Trainee</th>
<th>Trainee 2</th>
<th>Trainee 3</th>
<th>Trainee 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>95%</td>
<td>96%</td>
<td>94%</td>
</tr>
<tr>
<td>Specificity</td>
<td>91%</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>Positive Predictive Value</td>
<td>89%</td>
<td>94%</td>
<td>88%</td>
</tr>
<tr>
<td>Negative Predictive Value</td>
<td>92%</td>
<td>92%</td>
<td>91%</td>
</tr>
</tbody>
</table>

Conclusions: 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: All authors have declared no conflicts of interest.

P1504 COLONIC ESD BY UTILIZING SHORT DOUBLE BALLOON ENDOSCOPE – HOW TO TREAT DIFFICULT CASES IN COLONIC ESD

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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 found it difficult to detach the colon tumor, ESD operators in Japan 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 EC450BI5, EN530BI and EI580BT (Fujifilm 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
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Contact E-mail Address: germanadinucci1@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 an accurate evaluation of the hidden areas of the colon.
Aims & Methods: We aimed to evaluate whether monitoring of WT alone or in combination with the use of FUSE 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 WT 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 0.41 ± 1.24 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 IMPROVEMENT AGENCY
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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 greatly depending on the bowel preparation quality, and patient co-morbid conditions.
Aims & Methods: Aim is to determine the presumed miss rate for adenomas and sessile serrated adenomas/polyps (SSA/P) 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 6 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 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 (37.3%) 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 were 37.8% (469/1241), 22.1% (176/798), 41.7% (20/48) and 15.2% (36/236) respectively. More adenomas were missed in the proximal colon when compared to distal colit (26.64% vs. 18.04%, p = 0.01). Table 1 illustrates the distribution of missed adenomas in each segment of the colon. Adenoma miss rates per size as follows: < 5 mm, 6-9mm and > 10 mm were 24.27 and 8% respectively. Higher number of polyps (> 3 mm) 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>Hecraphic 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.

P1507 IMPACT OF PERIODONTAL DISEASE ON PREVALENCE OF COLORECTAL NEOPLASIA IN PATIENTS UNDERGOING ROUTINE SCREENING COLONOSCOPY
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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 assessing periodontal disease according to periodontitis-risk classes (PRC: 0-healthy gingiva, PRC 1 - tatar 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 periodontitis-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.
P1508 OUTCOMES OF ENDOSCOPIC RESECTIONS OF LARGE NON-POLYPOID LESIONS IN INFLAMMATORY BOWEL DISEASE: A SINGLE UNITED KINGDOM CENTRE EXPERIENCE

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Introduction: Patients with colitis carry an increased risk for the development of dysplasia compared to those without1. The SCENIC consensus statement recommends endoscopic resection of all visible dysplasia2. 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 47.3±4.2 mm (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 pitvascular 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 ESD resulted in intense fibrosis. Macrosopic evidence of complete resection was achieved in all remaining cases. Endoscopic diagnosis of pre-cancerous lesions of less than 1000 μm submucosal invasion was confirmed histopathologically in 5 of the resected lesions. Complete excision was confirmed in all en bloc resections. A single case of small perforation and another with delayed minor bleeding were both managed endoscopically. Mortality/hospital admission within 30 days post resection was 0%. Median follow up was 28 months (12–35) with no recurrence. Alternative site dysplasia was detected in 2 patients. All lesions were sub 20 mm and resected endoscopically. Two patients were referred for colectomy due to a concomitant diagnosis of neuroendocrine tumour and the second with alternate site advanced dysplasia.

Table 1: Baseline characteristics.

<table>
<thead>
<tr>
<th>Patient Demographics</th>
<th>Age at time of resection (mean, SD, range) (years)</th>
<th>Gender (n (%))</th>
<th>Clinical Data</th>
<th>Disease extent</th>
<th>Sclerotic Flexure (n (%))</th>
<th>Pan-colon/Extensive (n (%))</th>
<th>Primary Sclerosing Cholangitis</th>
<th>IBD Medication</th>
<th>5-ASA* (n (%))</th>
<th>Azathioprine (n (%))</th>
<th>Biologics (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57,31±/−12.7, 30–81</td>
<td>Male (n (%))</td>
<td>10 (77)</td>
<td>3 (23)</td>
<td>2 (23)</td>
<td>10 (77)</td>
<td>3</td>
<td></td>
<td>11 (84)</td>
<td>2 (15)</td>
<td>1 (7)</td>
</tr>
</tbody>
</table>

ASA Physical Status Classification (continued)
**P1510 OUTCOMES FOLLOWING UNDERWATER ENDOSCOPIC MUCOSAL RESECTION OF >10MM COLORECTAL POLYPS: A PROSPECTIVE DUAL-CENTRE STUDY**

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**Introduction:** Underwater endoscopic mucosal resection (UEMR) is an alternative to traditional EMR for the resection of colonic polyps. With this technique, water insufflation is used in place of air or CO2, and submucosal lifting is usually not required, as water-immerses submucosa cushions itself from the muscularis propia. Theoretically, this reduces the risk of diathermy-induced injury, and allows for more complete resection margins.1,2

**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 3-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 history. Univariate analyses were performed using Pearson’s chi² 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, 50.6%) 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 (3.1%) and non-dysplastic sessile serrated adenoma (2.1%). 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 = 0.099). The 30-day complication rate was 4.1% (n = 4), comprising: bleeding (n = 2, average diameters: 35 mm) and delayed rebleeding (n = 2; average diameter: 57.5 mm), with haemos-tasis 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% (9.54) at 4 months and 15.99 (22.0%) 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 previous polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.04), but not polyp size, site, morphology or dysplasia status, use of submucosal lift, APC-, patient age, or study centre.

**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 referral centre. 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**

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**P1511 WATER-AIDED COLONOSCOPY - RESEARCH FOCUS IN THE PAST DECADE AND CURRENT CLINICAL PRACTICE**

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**Introduction:** Water-aided techniques have forged a paradigm shift in endoscopic diagnosis and therapy. The inauguration (10/22/2014) of the International WATERS with memberships worldwide attested to participants’ commitment to advance clinical, educational and research missions. To aid in planning of future work in each of these areas, a descriptive study of water-aided colonoscopy was performed.

**Aims & Methods:** The aims of this study were two-folds. Study 1: To assess the feasibility of WATERS in the past decade’s study. To obtain a cross-sectional snapshot of current clinical practice. Study 1: Studies registered at Clinicaltrials.gov were searched for using the search term “water colonoscopy”. Study 2: Members of International WATERS voluntarily participated in a survey after inserting the proportion of patients with different models of sedation, respondents selected yes (1) or no (0) responses to each of 16 questions related to their practice of water-aided colonoscopy.

**Results:** Study 1: In the past decade, 48 trials of water-aided colonoscopy were registered at Clinicaltrials.gov. They aimed at evaluation of insertion pain in unsedated, minimally sedated, or on demand sedation patients; assessment of efficacy in difficult colonoscopy; study of the impact on adenoma detection; and underwater mucosal resection or polypectomy. Study 2: Questionnaire responses are summarized in Table 1. Respondents: n = 23. Water-aided colonoscopy is used in patients sedated with propofol, minimal sedation on demand sedation (3–16%), but more commonly in patients with moderate or no sedation (30–34%). During insertion 95.5% use infusion of water and only 36.4% leave the air/CO2 pump on. 42.9% and 33.3% record volumes infused and suctioned upon arrival to the cecum. 52.4% remove almost all infused water during insertion. 71.4% and 59.1% performed polypectomy (<20 mm and >20 mm, respectively) underwater during withdrawal.

**Table 1A:** % of respondent’s patients

<table>
<thead>
<tr>
<th>Mean SD</th>
<th>Sedated with propofol</th>
<th>Receiving minimal sedation</th>
<th>Are unsedated</th>
<th>Receive on demand sedation</th>
<th>Receive moderate sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
<td>30</td>
<td>11</td>
<td>19</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>35</td>
<td>3</td>
<td>5</td>
<td>30</td>
</tr>
</tbody>
</table>

**Table 1B:** Proportion of respondents using the following approaches (%)

<table>
<thead>
<tr>
<th>Mean</th>
<th>Infuse water during insertion</th>
<th>Withdrawal during insertion</th>
<th>Leave air/CO2 pump on during insertion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95.5</td>
<td>36.4</td>
<td>36.4</td>
</tr>
<tr>
<td></td>
<td>90.0</td>
<td>71.4</td>
<td>71.4</td>
</tr>
</tbody>
</table>

**Conclusion:** The variable modes of application amongst respondents who profess to use water-aided colonoscopy reflect the versatility and strength of the paradigm-changing approach, which is easily adaptable to meet the diverse needs of individual colonoscopists. Standardization based on results of randomized controlled trials appears to be prudent to permit further assessment of water-aided colonoscopy in clinical, educational and research settings.

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

**References**
2. Puerta de Hierro, Madrid/Spain
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**Introduction:** Endoscopic submucosal dissection (ESD) is a suitable technique used for the endoscopic management of selected early gastrointestinal neoplasms (EGN).

**Aims & Methods:** This is a prospective study of patients with EGN eligible for ESD in tertiary hospitals. The main goal was to evaluate initial therapeutic results and learning curve of ESD. Initial Technical success rates, procedure speed, en-bloc & R0 resection, R0, speed and complications rates were prospectively evaluated. The results of the learning curve were analysed by chronological order of blocks of 50 cases. Perforation was established as any disruption of the muscular layer, regardless of size or identification of peritoneal fat. Time of procedure was considered from initial submucosal injection to final detachment of the specimen.

**Results:** ESD was attempted in 183 lesions from January 2012 to April 2017. Majority of procedures were performed at Puerta de Hierro University Hospital (160/87.4%). Mean age was 67 (SD 10.6) years, with male proportion 55.2%. Most common location was colorectal (77.8%), followed by gastric (12.8%) and esophageal (9.4%). Success was observed in 96.2% of patients with en-bloc and R0 resection of 93.9% and 92.3% respectively. Mean lesion size was 46.5 mm (range 8–130) with a mean speed of 9.01 min/cm2 (range 1–209). Perforation was
the main complication (48 (26.2%) events), requiring surgery in 5 (10.4%) cases. Perforation was statistically related significantly to location (p = 0.05) and LST morphology (p = 0.05). Most frequent location of perforation was transverse colon (OR 88.3; SE 137), followed by descending colon (OR 13.5; SE 19.4) and splenic flexure (OR 6.3, SE 11.8). Perforation was more common in LST-NG lesions vs LST-G (OR 14.1; SE = 19.3 vs 11.6 SE 15.0). Perforation rates were not statistically associated with the presence of severe submucosal fibrosis compared to absence of fibrosis (0.8 SE 0.6 vs 1 SE 1 p = 0.9). Post-ESD complications were observed in 15 (8.2%) patients (delayed perforation(7), bleeding(4), electrocutaneous ulceration(1), severe esophageal stricturing(1), haemoperitoniun(1) and splenic rupture(1)). Six cases (40%) were managed with surgery. Results from the learning curve progression according to consecutive chronologically blocked groups of 50 cases (33 last bloc) are summarized in table I. Initial success increased from 94% to 100%; speed of ESD decreased after the first 50 cases (15.5 cm²/min), up to 6.7 and 6.5 cm²/min in the last 2 blocs. A high perforation rate in the first period (32%) was reduced to 18–30.3% the following periods. Endoscopic treatment was successful in most cases of perforation (89.6%). Surgery was required for severe complications, incomplete ESD and/or perforation (n, %) (16 cases, 8.7%).

Conclusion: On clinical ESD, high rates of success and en-bloc and R0 resection can be achieved along the learning curve. Perforation is the most common complication and is still a challenge for Western countries. However, increasing experience reflects a high success in endoscopic management of perforation.

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 ADENOMA: THE EXPERIENCE OF A UK TERTIARY REFERRAL CENTRE
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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 of 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 colorectal ultrason in selected cases. A lesion specific approach was adopted to technique, with expert 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 technique 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 which were considered significant. 4 patients were successfully performed as day case procedures. 97% of patients without invasive cancer were free from recurrence and had avoided surgery at last follow-up.

Conclusion: Colorectal ESD can be used as part of a standard lesion specific approach at a western referral centre to deliver safe and effective organ conserving treatment to patients with large challenging lesions. Knowledge regarding 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.

P1514 RISK OF STENOSIS AND OUTCOMES FOLLOWING ENDOSCOPIC RESECTION OF LARGE COLORECTAL LESIONS INVOLVING MORE THAN 75% OF THE LUMINAL CIRCUMFERENCE
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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. Resection technique included EMR, ESD and hybrid techniques involving ESD. Patients were grouped according to circumferential extent of the mucosal defect after resection. Surveillance colonoscopy was performed at 3 and 12 months. Clinicopathological characteristics and outcomes were compared between groups.

Results: 435 colorectal lesions ≥2 cm were resected using EMR (n = 342), ESD (n = 45) or hybrid techniques (n = 48). Circumferential extent of the resulting mucosal defect was ≥75% in 41 patients. 8 lesions were fully circumferential: 1 caecal lesion and the rest in the recto-sigmoid and rectum. 3 of these circumferential lesions contained deep invasive adenocarcinoma and 1 benign lesion ultimately required surgery. The 41 lesions with a mucosal defect ≥75% of the circumference had a mean size of 100.5 mm vs 49.0 mm for other lesions (p < 0.001). These patients had significantly more complications (16.7% vs 4.7%, p < 0.001), including a higher rate of perforation (8.3% vs 2.3%, p = 0.02), although none required surgery, and a significantly higher rate of recurrence (44.8% vs 9.2%, p < 0.001). 76% of patients without cancer were free from recurrence and had avoided surgery at last follow-up compared to 97% of patients with mucosal defects <75% (p < 0.001). Stenosis occurred in 7 patients: 4 lesions extensively involving the rectum and recto-sigmoid and 2 lesions involving the sigmoid colon extending to the rectosigmoid. 1 of these involved a mucosal defect of only 50% of the circumference and 3 were fully circumferential. 1 patient had a symptomatic anorectal stenosis requiring dilatation under anaesthesia, 1 patient was asymptomatic but underwent early dilatation after the first surveillance endoscopy at 3 months. The remaining patient was asymptomatic and managed expectantly. In all these latter cases spontaneous improvement in the stricture was noted at the subsequent surveillance endoscopy.

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.

P1515 RISK OF HIGH-GRADE DYSPLASIA AND SUBMUCOSAL INVASION IN DIFFERENT MORPHOLOGICAL SUB-TYPES OF LARGE COLORECTAL NEOPLASTIC LESIONS RESECTED AT A UK TERTIARY REFERRAL UNIT
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Abstract: P1512

N = 183
1–50 51–100 101–150 151–183 Total (n/%)

Colorectal location (n,%)

40/50 (80%) 42/50(84%)

34/50(68%) 25/33(75.7%)

141/183(77%)

34/50(68%) 42/50(84%)

50/50(100%) 33/33(100%)

176/183(96.2%)

47/50 (94%)

50/50(100%)

33/33(100%)

172/183(93.9%)

45/50 (90%) 42/50(84%)

48/50(96%) 31/33 (94%)

169/183(92.3%)

6.7(5.5)

6.7(5.5)

9.0(19.1)

2.1(4.5)

9.0(19.1)

48/183(26.2%)

5/183(10.4%)

2.1(4.5)
Introduction: Although it is well recognised that the risk of invasive carcinoma in adenomatous 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. LST NH (n = 374) was significantly associated with a higher incidence of invasive adenocarcinoma (4.0%) compared with LST NG (n = 283) (0.7%) (p < 0.001).

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

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.

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 COLORECTAL OBSTRUCTION

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Introduction: Self-expandable metallic stent (SEMS) is widely used to treat malignant obstruction. Although the procedure is particularly complex, most of whom have already had extensive prior manipulation or attempts at resection. Familiarity with a range of selection techniques and appropriate equipment is essential to successfully treat recurrent lesions in this group with endoscopic resection, which can be achieved in the majority of patients without significant complication.

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

Results: A total of 1059 patients were screened for enrollment; 749 total colorectal stenoses were studied: 383 men (51.1%) and 366 women (48.9%). Colonic preparation was good (Boston score > 6) in 49.4% of patients. Colorectal stenosis was normal in 434 cases (57.9%). Colonic polyps were detected in 197 patients (26.3%). The mean number of polyps detected per colon was (Mean 9 ± 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 colonoscopies and G2 included 150 colonoscopies. 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: 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.
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

P1520 A META-ANALYSIS: CHROMOENDOSCOPY OR WHITE LIGHT ENDOSCOPY FOR NEOPLASIA DETECTION IN LYNCH SYNDROME

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Introduction: Lynch syndrome (LS) is an autosomal-dominant disease, with increased risk of colorectal cancer (CRC), hence annual surveillance colonoscopy is recommended. do not recommend one over the other.

Aims & Methods: We aimed to compare the diagnostic yield (DY) of different endoscopic modalities for detection of colorectal neoplasia in patients with LS by performing a meta-analysis of existing literature. We searched Pubmed for prospective studies. For each modality, we performed comparative total per-adenoma analysis and sub-analyses for flat lesions and location (right/left colon).

Meta-analysis was performed using pooled rate ratios (RR) with fixed effects model for low heterogeneous data. The subgroup

Results: Five studies compared white light endoscopy (WLE) to chroendoendoscopy. In four studies compared WLE to chroendoscopy directly (one study used a "back-to-back" design but lesions were resected only after chroendoscopy and the other study compared two different sets of patients). Chroendoscopy (n = 75) identified more adenomas in the right colon than WLE (n = 73 patients) RR 3.27 (95%CI 1.83–5.87). Overall detection of adenomas or flat lesions was not statistically different between the two methods.

Conclusion: Chromoendoscopy is superior to WLE for detection of adenomas in Lynch syndrome, especially flat lesions and adenomas in the right colon.

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

References
References


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P1522 QUALITY IN BOWEL CLEANSING, PERFORMANCE MEASURES AND PATIENT SATISFACTION USING DIFFERENT PURGATIVES IN SCREENING COLONOSCOPY


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Introduction: Quality of bowel preparation and adenoma detection rate (ADR) are routinely assessed in screening colonoscopy. However, data on patient experience are scarce.

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 CitroFleet® (CF, n = 261), Picroprep® (PP, n = 2678), Klean-Prep® (KP, n = 804) and Moviprep® (MP, n = 1252), PC and CF were grouped into one (LV) group. Age and gender adjusted success rates and ADR per purgative were 97.0% and 23.3% for LV, 97.5% and 22.7% for KP and 93.5% and 26.0% for MP. Women had higher success rates than men (p = 0.075) and success rate decreased with patients' age (p = 0.008). The compliance regarding consumption of the entire volume was best with LV (89.2%, KP 87.6%, MP 87.3%), which had a significant effect on success rates and ADR per purgative (p < 0.0001) while there was no statistical significance among the average values from participants with good bowel preparation quality (47.40% (SD = 0.80%) in hospitals vs. 49.35% (SD = 0.67%) in private practices). Adequate rate in screening colonoscopy was 96.22% (SD = 0.591), unsatisfactory (p = 0.080) and villous component (p = 0.011) of lesion type. Likert scale achievement was 3.06 vs. 3.68% (SD 1.15, p = 0.011) and G-type morphology (p = 0.001) was more 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.

P1524 DIFFERENCES IN QUALITY OF BOWEL PREPARATION AT SCREENING COLONOSCOPIES IN PRIVATE PRACTICES AND HOSPITALS


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Introduction: Bowel preparation influences the adenoma detection rate and is therefore an important quality parameter in screening colonoscopy. According to actual ESGE guidelines “Performance measures for lower gastrointestinal endoscopy: a European Society of Gastrointestinal Endoscopy (ESGE) Quality 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.

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 following categories: excellent, good, fair, poor, poor only in the right colon and unsatisfactory.

Results: From the 125,127 screening colonoscopies included in this study, 72.93% were performed in private practices (50.66% female, mean age 60.7) and 27.07% in hospitals (49.35% female, mean age 60.35). Significant difference was found between the average values of screening colonoscopies with excellent bowel preparation (38.00% (SD = 0.36) in private practices vs. 27.92% (SD = 0.21) in hospitals, p = 0.002) and there was no statistical significance between private practices and hospitals (27.89% (SD = 0.28) vs. 27.92% (SD = 0.27)) and poor only in the right colon (0.69 (SD = 1.74) vs. 0.80% (SD = 1.15, p = 0.7721). The mean ADR did not show any statistical difference between private practices and hospitals (23.98% (SD = 10.89%) vs. 25.80% (SD = 12.80%), p = 0.7652).

Conclusion: More excellent bowel preparation was found in private practices while the screening colonoscopies in hospitals showed a higher rate of fair and unsatisfactory bowel preparation.

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

P1525 RISK FACTORS FOR RESIDUAL NEOPLASIA AFTER ENDOSCOPIC MUCOSAL RESECTION OF LATERALLY SPREADING TUMORS

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Introduction: Laterally spreading tumors (LSTs) are important precursors of colorectal carcinoma. They are usually removed by endoscopic mucosal resection (EMR). However, local residual neoplasia (LRN) may occur during follow-up. The aim of the study was to evaluate the occurrence of LRN and the risk factors for its emergence.

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 occurrence of an increased risk of residual neoplasia for LST ≥ 20 mm (p = 0.006), villous adenomas (p = 0.001), 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 colonic 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.
P1525 ENDOSCOPIC SURVEILLANCE AFTER SURGERY ON FAMILIAL ADENOMATOUS POLYPOSIS PATIENTS: IT IS EFFECTIVE BUT INTERVALS CAN BE WIDENED

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Introduction: Familial adenomatous polyposis (FAP) is an autosomal dominant inherited condition characterized 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 performed in 17 patients (56.7%), 12% of 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

P1527 BOWEL PREPARATION FOR FLEXIBLE SIGMOIDOSCOPY: COMPARISON OF POLYETHYLENE GLYCOL ELECTROLYTE SOLUTION (PEG-ES) AND PHOSPHATE ENEMA IN 4,949 PATIENTS AT TWO UK HOSPITALS

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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.1,2,3

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 bowel preparation by the endoscopist performing the procedure. A chi-squared test was used to calculate p-value.

Results: In total 6196 patients underwent flexible sigmoidoscopy during the study period (males 2885 (46.5%); mean age 62.80 years, range 16–101 years). 1247 (20.13%) patients were excluded from further analysis for the following reasons: Na+ ≥ 150 mmol/L (n=451), no documentation of the quality of 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 (66.49%), mean age 60.97 years, range 18–95 years) and 584 (57.50%) (males 1269 (64.59%), mean age 63.98 years, range 17–101 years) had phosphate enema. The results are summarised in the table below.

<table>
<thead>
<tr>
<th>Type of bowel preparation</th>
<th>Excellent</th>
<th>Adequate</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEG(ES) (n=2103)</td>
<td>1126 (53.54%)</td>
<td>770 (36.61%)</td>
<td>196 (8.84%)</td>
</tr>
<tr>
<td>Phosphate enema (n=2846)</td>
<td>624 (21.93%)</td>
<td>1297 (45.57%)</td>
<td>925 (32.50%)</td>
</tr>
</tbody>
</table>

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 preferred by our hospital, if there is no contraindication for this.

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

References

P1528 MANAGEMENT OF RESECTION OF LARGE COLORECTAL LESIONS IN A REAL-LIFE SETTING: THE SCALP STUDY

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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 centers. However, 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: 4152 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 37.4%; underwire EMR in 1.2% and endoscopic submucosal dissection in 6.2% of the lesions. Patients with LCLs, 19.4% were on ATT (62.5% aspirin, 12.2% thienopyridines). 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 polyp 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
complications, delayed bleeding occurred in 4.5% of the subjects, whereas per-
formation 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 endoscopic 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?
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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 adenomas 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. Forty-seven 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 mucosa 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 resection 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. Hemiclip insertion was needed in 5 cases and epinephrine injection in 1 case. The bleeding stopped spontaneously in 2 patients. 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
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Introduction: The choice of polyepctomy 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 polyepctomy and endoscopic mucosal resection (EMR).

Aims & Methods: We aimed to evaluate the recent years evolution of the adherence to the recommendations of colorectal polyepctomy and EMR at a tertiary center. We conducted a unicentric analysis of polyepctomy 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 if 4-9 mm, or hot snare if 10-19 mm and EMR if ≥20 mm. Polyepctomy 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 polyepctomy and EMR, comprising 696 patients (64.5% 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. 95.8% 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 recommended excision techniques 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 polyepctomy 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 polyepctomies performed ade-
quately 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
that precludes conducting a mucosal incision far from tumor margins. A careful endoscopic biopsy is mandatory to detect residual neoplasia.

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

P1532 SELF-EXPANDABLE METALLIC STENT IN THE TREATMENT OF OCCLUSIVE COLORECTAL CANCER AS PALLIATIVE TREATMENT
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Introduction: Colorectal cancer (CRC) is one of the most common malignancies in the western world, associated 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. All 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: SMES is an effective and safe palliative option for unresectable tumors, although the use of chemotherapy after placement of prostheses may have an influence on the appearance of complications. Malignant colon occlusive 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

Elective Colonic EMR for Advanced Mucosal Neoplasia – A Multi-centre Study

P1535 THE INFLUENCE OF THE REAL FOLLOW-UP TIMES DURING A COLORECTAL CANCER SCREENING PROGRAM IN DAILY PRACTICE
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Introduction: European colorectal screening guidelines have modified the follow-up interval times based on baseline colonoscopy findings in recent years. In addition, the waiting list and individual conditions may modify the real follow-up times and this could impact in advanced adenoma detection rate in follow-up and patients outcome.

Aims & Methods: The aim of the present study was to comparatively analyse the risk of advanced lesions (advanced adenoma, invasive cancer) in high-risk patients included in a colorectal cancer screening program with different real follow-up times. One-thousand one-hundred and sixty-six patients (mean age: 60.66 ± 8.69 years, 69.1% men) who underwent a baseline colonoscopy with ≥3 adenomas and/or ≥10 mm between 2007-2012 were included. A Kaplan-Meier regression and a comparative subgroup analysis by Long-Rank test were carried out to determine the difference in the outcomes between patients of the same risk.

Results: The real follow-up times in ≥3 adenomas (n = 853, 73.16%) and ≥ lade- nomas ≥10 mm (n = 779, 66.81%) were 38.54 ± 11.57 and 38.66 ± 11.68 months. The risk of advanced lesions were 0.26%, 1.46%, 2.83%, 9.09% and 10.38% (p = 0.001) but none of the other variables had a statistically significant influence on early death (up to 6 months).

Conclusion: The risk of advanced lesions in high-risk patients increased significantly at 36-60 months after baseline colonoscopy, being more important in ≥3 adenomas subgroup. There were no differences for 1-3 years interval.

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

References
Introduction: S. Chaussade

COLORECTAL LESIONS?
HYBRID DISSECTION: WHICH TECHNIQUE TO FAVOR IN LARGE

with early CRC. Our results indicate that colorectal ESD is a safe and effective

Conclusion: We herein present our findings on performing ESD on 29 patients with early CRC. Our results indicate that colorectal ESD is a safe and effective treatment in meticulously chosen patients even with malignant lesions. Further studies with larger groups are needed.

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

PI153 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VS HYBRID DISSECTION (HD) WHICH TECHNIQUE TO FAVOR IN LARGE COLORECTAL LESIONS?
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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 (R)-resection rates. In this context, 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 impact of complications derived from hybrid technique compared to classical endoscopic submuscular dissection.

Aims & Methods: Our study was carried out from January 2013 to June 2016 in our gastroenterology department. The 40 lesions removed by hybrid technique were compared with lesions removed by endoscopic submucosal dissection (ESD). Hybrid dissection was 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 28.6%, respectively). The size of 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 lesion 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).

In the hybrid dissection group, the rate of perforation was lower than in the ESD group (4% versus 15%, 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 in 12.5% of cases for 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 (4% versus 15%, p<0.001).

In case of complication, 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 hospitalisation time.

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

PI157 TRENDS IN STATISTICS REGARDING EFFECTIVE ELCR PROCEDURES IN THE VENETO REGION: A RETROSPECTIVE STUDY BASED ON ADMINISTRATIVE DATABASES
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Introduction: Since its introduction in 1968, Endoscopic retrograde cholangio-

Aim: 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 status; 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 presented between sex ratios were considered; the average age, which was equal to 68±3±14.2 (range 6–98 yrs), was higher in the females (69.±14.9 vs. 67.5±13.5); significant deviations during the period examined were not noted. A total of 212 complications (6.8%) were registered: these included acute pancreatitis (4.5%), cholangitis (1.3%), sepsis (0.4%), acute cholecystitis (0.3%), cardiopulmonary complications (0.2%), perforations and hemorrhage (0.2%). The complications that presented, which were significantly higher in the female sex (7.3% vs. 6.2%; p<0.05), besides a greater average hospital stay in those suffering from complications (10.±13 vs. 4.2±13 days, respectively), the worst hospital stay was connected to those patients post-procedure status; the total complications 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 identify any significant differences. Mortality rate associated to the procedure used to diagnose and to treat conditions associated to the pancreaticobiliary 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: The aim of our study was to evaluate the effect of these factors on the frequency of PE. We retrospectively analyzed all ERCP performed over a 12 months period [January 2015 - December 2015] and carried out at the gastroenterology unit of our hospital. All patients were evaluated prospectively for the frequency of PE based on the consensus criteria. The patients with obesity (Body mass index BMI ≥ 30 kg/m²), dyslipidemia (triglyceride >2 g/L or LDL-cholesterol >1.6 g/L) and DM (history of DM or fasting glucose level

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Introduction: Hepatic hydatid disease (HHD) is a major endemic health problem in certain areas of the world such as Tunisia. Intrahepatic rupture of a hepatic hydatid cyst is a common complication ranging between 3 and 17%. Furthermore, biliary leakage is the most frequent postoperative complication following surgery for hydatid cysts of liver. Both conditions require per endoscopic biliary drainage.

Aims & Methods: The aim of this study was to assess the results of ERCP in patients with 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 (86.5%) were performed in patients with HHD who had undergone previous surgery. The indications of the ERCP were persistent external biliary fistula 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%. In the 58 patients who had undergone previous surgery, ES was then performed in all cases defects of varying size and shapes (52.5%), leakage of contrast medium into the 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 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 lateral stenoses (5.3%). 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 occlusion balloon and/or Dormia basket. Nevertheless, two patients required biliary stenting due to the bile duct injuries and two others required nasobiliary drainage. One patient presented post ERCP pancreatitis (1.5%).

Conclusion: ERCP is a safe and effective way to manage biliary complications of HHD. In most patients, ES is the most efficient treatment of postoperative biliary external biliary fistulas, jaundice and accompanying cholangitis. In some cases, biliary stenting or nasobiliary drainage may be required.

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

References:

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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 fragmentation on the sharp metallic bevel. We have described the method of using a microcatheter for EUS-guided rendezvous, which allows easier handling and exchange of the guidewire, while avoiding both the risk of fragmentation and the need of injection of contrast to achieve a complete ductogram.

Aims & Methods: We aimed to evaluate the early experience of the microcatheter method in EUS-guided rendezvous procedures in the biliary and pancreatic tracts. During EUS-guided biliary or pancreatic rendezvous, initial puncture of the duct of interest was attempted with a 19G needle without stilet
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 by the needle bevel, we performed a microcatheter technique. After removing the needle, leaving the guidewire in situ, a 3F, 150 cm long microcatheter 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 chronic pancreatitis, 2 pancreas divisum and 1 pancreatic cancer) and biliary rendezvous in the other 4 (3 biliary stenosis and 1 ampulloma). 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 hepaticojejunostomy 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

P1542 ERCP AND PTCD IN BILIARY TRACT COMPLICATIONS AFTER LIVER TRANSPLANTATION: PREDICTORS OF LONG-TERM OUTCOME
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Introduction: Biliary tract complications (BTC) are the leading problem in patients after orthotopic liver transplantation (LT). The present study analysed the results and predictors of treatment outcomes in patients with biliary stenoses undergoing endoscopic retrograde cholangiopancreatography (ERCP) and/or percutaneous transhepatic cholangiography (PTCD) at the University Medical Center Hamburg-Eppendorf.

Aims & Methods: All adult patients who received ERCP or PTCD for BTC after LT between 2009 and 2015 were retrospectively analysed. Remission of BTC was defined as no need of intervention for at least 12 months. To identify predictors of endoscopic treatment outcome in patients with biliary stenoses, a multivariate logistic regression analysis was performed after univariate variable selection. Laboratory parameters that were significant in the multivariate analysis, were dichotomised stepwise according to the most informative cut-off predicting outcome. Furthermore, endoscopic techniques were analysed in both the ERCP- and PTCD-subgroup.

Results: Of 144 patients with BTC after LT, 116 were diagnosed with biliary stenoses. Among these, 86 received ERCP, 17 PTCD and 13 both techniques. Long-term remission was achieved in 55 patients (47% overall; 53% in ERCP sub-group). Technical failure occurred in 1 patient with biliary stenosis in whom a EUS-guided hepaticojejunostomy was performed in the same procedure and in 1 patient with chronic pancreatitis with symptomatic pancreatic duct stenosis. 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 hepaticojejunostomy 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

P1543 RESULTS OF THE FRENCH NATIONAL OBSERVATIONAL STUDY CONCERNING THE PRACTICE OF PROBE-BASED CONFOCAL ENDOMICROSCOPY (CELLVIZION®)
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Introduction: Confocal endomicroscopy is an endoscopic imaging technique permitting the microscopic analysis of the digestive mucosa in real time (esophagus, stomach, duodenum, colon, biliary tract and pancreas) due to injection of fluorescein which is an intravenous contraste. The aim of this national observational study under the guidance of SFED is to evaluate the practice of confocal endomicroscopy in France, specifically its indication, histologic correlation, therapeutic benefits depending on the operator and complications.

Aims & Methods: We executed a multicentric observational prospective study from September 2013 to February 2015. Collection of data was based on a standardised collection sheet. All operators were trained on performing confocal endomicroscopy. The intravenous injection of fluorescein was given either in bolus or in a perfusion method at a dilution of 1 or 10% and was used, demographic, clinical, endoscopic and endomicroscopic data were collected. For each act the correlation between the confocal endomicroscopy and histology and the outcome of the ECM on the operator were reported.

Results: In total 399 procedures of confocal endomicroscopy were done on 399 patients (median age was 39 ± 14.5 years, males were 52% and these were performed in 12 centers. The main indications were: diagnosis and monitoring of Barrett esophagus 28% (111/399), surveillance of gastritis 4% (16/399), characterization of coloectal polyp and searching for dysplasia in IBD patients 17% (68/399), undetermined biliary stenosis 11% (42/399), pancreatic cysts 30% (123/399) and other rare cases (lymph nodes characterization, lupus, Crohn's disease, control post mucosectomy of gastric and duodenal polyps) 10% (39/399). The quality of imaging was good in 83% of cases (331/399), average in 16% (64/399) and poor in 1% (6/399). The correlation with histology was measured by using Cohen's kappa coefficient. The results were respectively k = 0.9, 0.78, 0.82, 0.7, 0.94, 0.93 for Barrett's esophagus, gastritis, IBD, colorectal polyps, undetermined biliary stenosis and pancreatic cysts. The outcome of the procedure according to the operator was beneficial for three main indications: Barrett's esophagus (especially for targeting biopsy), pancreatic cysts (100% of cases), and undetermined biliary stenosis (90% of cases and especially for real time therapeutic decision). One major side effect was seen during the study, which was an anaphylactic shock after a bolus injection of 2.5cc of fluorescein in a 69y old patient who didn't have any previous history of allergies. This patient was hospitalized for surveillance for three days.

Conclusion: In conclusion, confocal endomicroscopy is an in vivo microscopic technique that is easily performed along the digestive tube with a good histologic correlation especially for Barrett's esophagus, undetermined biliary stenosis and pancreatic cysts. Its importance in the management of patients remains to be clarified with the advent of new endoscopic magnification techniques.

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

Reference

P1544 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN PATIENTS WITH SURGICALLY MODIFIED GASTRO-ENTERIC-BILIARY ANATOMY: RESULTS FROM A TERTIARY CENTER
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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) represents a crucial procedure in the management of bilioenteric pathology. However, its performance in patients with surgically modified gastro-enteric-biliary anatomy (SMGA) is a challenging issue.

Aims & Methods: We aimed to evaluate the efficacy of this advanced endoscopic technique in patients with SMGA. This was a retrospective observational cohort study of all patients with surgical modification of biliary/pancreatic access undergone ERCP, between 01/2002 and 02/2017. Demographic variables, indications, the breakdown of surgical procedures and technical success rate were evaluated as well as potential predictive factors of therapeutic efficacy rate. Compared patients with successful technique(G1) and therapeutic failure by ERCP
Aims & Methods:
Prior studies have reported that the majority of CBD stones expanding therapeutic intervention of SOC. The universal usage will allow benchmarking at individual, institutional and national level and will help in quality improvement. Efficacy, safety and impact on different pancreaticobiliary disorders will be also measurable.

Disclosure of Interest: All authors have declared no conflicts of interest.
anastomosis, and (3) the therapeutic success rate. We used a 2.2 mm DBE with a 2.4 mm overtube of operating channel (EN-450 T5, or EN5080F Fujinon inc Saitama Japan).

Results: A total of 12 patients (sex ratio1/1) with a mean age of 65 [47–82] underwent 14 DBE-ERCP. 7 patients had Roux-en-Y gastro-jejunostomy with a biliary-jejunostomy and 4 patients 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-ERCP 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-ERCP 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.

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

Reference

P1559 NEEDLE-KNIFE SPHINCTEROTOMY (NKS) VERSUS TRANSPANCREATIC SPHINCTEROTOMY (TPS) FOR DIFFICULT BILIARY CANNULATION: A SYSTEMATIC REVIEW AND META-ANALYSIS
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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 approach for difficult cases is transpancreatic sphincterotomy. Both situations are well known as Post-ERCP 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 efficacy 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 Manthel-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 1.01–8.85, p = 0.05). Complications and risk of pancreatitis was similar in both group (OR 0.74 95%CI 0.51–1.00 p = 0.13; OR 1.09 95%CI 0.68–1.75 p = 0.71). 

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

P1550 TRANSPANCREATIC SPHINCTEROTOMY: A VALUABLE TECHNIQUE FOR GAINING BILE ACCESS
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Introduction: Transpancreatic Sphincterotomy (TPS) involves wire-guided cannulation of the main pancreatic duct (MPD) followed by standard pull-type sphincterotomy cutting towards the main channel. Typically a MPD stent insertion should follow TPS to prevent post-ERCP pancreatitis (PEP). ESGE [1] recommends that in patients with a small papilla that is difficult to cannulate, TPS should be considered if the guidewire-guided MPD cannulation fails. A previous study had suggested that TPS might be as effective as double guide wire (DGW) technique in achieving biliary cannulation in difficult cases and has a lower pancreatitis rate. [1]

Aims & Methods: The aim of this study was to review the practice, complications and outcomes of TPS in University Hospital of North Tees (district general hospital in the north-east of UK). All ERCP procedures between January 2014 and October 2016 were reviewed. Endoscopy reports, blood results and discharge letters were used for data collection.

Results: 1365 ERCP procedures were performed in the study period. Overall CBD cannulation rate was 91.3%. 105/1365 (7.7%) wire guided TPS procedures were performed. Mean age in the TPS group was 67 (range: 44–80) years. 61 (67.9%) were male and 44 (32.1%) were female. 31 (29.5%) TPS procedures were performed for difficult biliary cannulation. Our study is the second largest cohort in the literature and the largest cohort in the UK. We would suggest early adoption of TPS if wire access to the pancreatic duct is achieved, this will likely reduce complication rate as a result of less engagement with the papilla and overall reduced time at CBD cannulation.

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

Reference
was performed using SPSS version 20.0. A P-value of less than 0.05 was considered statistically significant.

Results: We included 1976 patients who presented choledocholithiasis and underwent different endoscopic extraction techniques. Mean diameter of stone(s) extracted using only the basket (Group A) was 6.8 mm with a mean CBD diameter of 11.8 mm (mean stone diameter) compared to 11.8 mm (mean stone diameter) with 14.3 mm (mean CBD diameter) for patients who underwent surgery before surgery (P < 0.001). Only 3.2% of cases had to be referred to surgery. Stones removed using only a retrieval balloon (Group B) were 7.6 mm with a mean CBD diameter of 13.3 mm. By associating the basket with a retrieval balloon (Group 4) we obtained a 100% success rate of endoscopic removal for a mean stone diameter of 9.6 mm with a mean CBD diameter of 12.9 mm. We also analyzed the percentage of patients who underwent endoscopic extraction by using a retrieval balloon combined with balloon dilator. In Group 4 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 CBD 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 with lithotriptor or a combination of basket with retrieval balloon alone or 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.

Reference

P1552 DICLOFENAC AND INDOMETHACIN IN THE PREVENTION OF POST-ERCP PANCREATITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF PROSPECTIVE CONTROLLED TRIALS

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Introduction: Diclofenac and indomethacin are the most studied drugs for preventing post-ERCP pancreatitis (PEP), but their use is controversial.

Aims & Methods: Our aim was to evaluate all studies published in full text and studied efficacy of diclofenac or indomethacin prophylactic with placebo or non-treatment for the prevention of PEP in adult patients undergoing ERCP. Systematic search of databases (PubMed, Scopus, Web of Science, Cochrane Library) was performed from inception to 30 June 2016.

Results: Our meta-analysis of 4741 patients from 17 trials showed that diclofenac or indomethacin significantly decreased the risk ratio (RR) of PEP to 0.60 (95% confidence interval:0.46–0.78, P = 0.0001), number needed to treat (NNT) was 20, and the reduction of RR of moderate to severe PEP was 0.64 (95% CI 0.43–0.97, P = 0.0339). The efficacy of indomethacin compared to diclofenac was similar (P = 0.98). The efficacy of indomethacin or diclofenac did not differ according to timing (P = 0.99) or between patients with average-risk and high-risk of PEP (P = 0.027). The effect of rectal administration of indomethacin or diclofenac was not significant (P = 0.1507), but rectal route was very effective (P = 0.0005) with a NNT of 19. The administration of indomethacin or diclofenac was avoided in patients with renal failure. Substantial adverse events were not detected.

Conclusion: The use of rectally administered inexpensive and safe diclofenac or indomethacin before or closely after ERCP is recommended in every patient (without renal failure) undergoing ERCP.

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

References


P1553 RECTAL DICLOFENAC AND PANCREATITIS AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

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Introduction: Rectal diclofenac or indomethacin reduces the risk of pancreatitis after endoscopic retrograde cholangiopancreatography (ERCP). Most studies of its efficacy included high-risk cohorts and excluded low-risk patients. We investigate the potential of rectal diclofenac to prevent post-ERCP pancreatitis (PEP) in a variety of patients.

Aims & Methods: A cohort of 1534 ERCPs performed at the Hospital Clinico de Valladolid between 2009 and July 2016 was collected. The median age of the patients was 75 years old (between 12 and 102 years). 54% were male and 45.9% female. There were 93 procedures in which cannulation of the desired pathway was not achieved but the papilla had been manipulated so they are patients who have been included in the study. In May 2012, with a few exceptions, patients received diclofenac before their procedure. 730 patients did not receive Diclofenac. PEP was defined by consensus criteria.

Results: The two groups were similar in age, sex, suspicion of Oddi sphincter dysfunction, recurrent acute pancreatitis, chronic pancreatitis, cannulation time, use of pre-cut, previous PEP, dilution without sphincterotomy. There were differences in the number of sphincterotomies in which it was greater in the Diclofenac group (p=0.004). There was also a greater number of Wirsung cannulations in the group treated with Diclofenac (p=0.004). There were a total of 47 PEP (3.1%), being 78.3% mild acute pancreatitis.

Takan as a whole the patients had no difference in the number of PEP between the two groups, since in those treated with Diclofenac there was 3.4% and in the non-treated patients 2.8%.

When taking only patients with de novo sphincterotomy, there was no difference between the number of PEP between the two groups being 4.4% in those treated with Diclofenac versus 4% in the untreated patients. In those patients who were cannulated Wirsung, an incidence of PEP of 8.2% was observed in the group treated with Diclofenac, compared to 6% in the untreated group (p=0.06). There were no differences between those treated with Wirsung’s prosthesis and those not treated in both groups. There was no PEP in patients treated with pancreatic prosthesis.

There was a higher incidence of PEP in women in both groups and a trend towards greater number of PEP among those treated with Diclofenac, although without statistical significance. There was also a greater number of PEP in patients under 40 years of age treated with Diclofenac compared to those not treated with 14.3% versus 7.1% (p=0.024).

No differences were found between the groups treated and not treated with Diclofenac when crossing with sphincter dysfunction of Oddi, previous PEP, number and sizes of choledocholithiasis and sizes with the appearance of PEP.

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D1 and E1 in the post-ERCP pancreatitis. Dig Dis Sci 2014
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
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Introduction: The confocal laser endomicroscopy (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 cholangiopscopy. 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 Cellvisio (Mauna Kea Technologies, France) were obtained through the SpyGlass DS (Boston Scientific Corporation, USA). Learning sets were constructed by using 49 images of normal area and 25 images of cancer lesion. The test sets of the pCLE images were constructed by 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 85.4% vs. 84.1%, p = 1.000 and diagnostic accuracy (72.0% vs. 74.4%), p = 0.860.

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 PERFORMANCES IN PANCREATIC SOLID LESIONS
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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 a cytopathologist. Patients who referred to EUS-TS for pancreatitic mass 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 29.4 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.

P1560 EUS-GUIDED GALLBLADDER DRAINAGE FOR ACUTE CHOLECYSTITIS WITH A SILICONE-COVERED NITINOL SHORT FLARED ENDS STENT: A CASE SERIES
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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 unfit 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 unfit for surgery. Sixteen consecutive patients (9 males; Mean age: 84 years) with diagnosis acute cholecystitis according to Tokyo guidelines criteria, not suitable for surgical approach, were conservatively treated and drained with EUS-guided short flared stents positioning. The procedure was performed in 2 tertiary endoscopy units by 4 experienced endoscopists. Both techniques were performed yearly, by 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 directly into the gallbladder. After each attempt, the fully covered metallic stent, 12-16 mm of diameter and 20-30 mm of length with bilateral anchor flanges (NAGI-stent) was advanced on the wire by using the fluoroscopy guide. Technical success, clinical success, adverse events, and long-term outcome were assessed.

Results: Technical success was achieved in all cases, clinical success was observed in 15 (94%) patients, whilst in 1 case the procedure failed due to stones impaction into the stent but it resolved subsequently with a new stent positioning. Symptoms relief occurred in all patients, 1 day after the procedure in 12 (75%) cases and 2 days later in remaining 4 (25%) patients. A bleeding episode occurred in 2 (12.5%) patients, in one case such complication was intra-procedural and it was successfully stopped during the same endoscopic session, in the other case it was a delayed adverse events requiring arterial embolization but the patient 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 at 7 months and one for cholangiocarcinoma after 5 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 a feasible and successful option 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.

P1561 EFFICIENCY COMPARISON BETWEEN 22 G VERSUS 25 G NEEDLES DURING ENDOCOSCOPIC ULTRASOUND FINE NEEDLE ASPIRATION FOR SOLID PANCREATIC MASSES: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ON RCTS
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Introduction: Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) is considered the gold standard method for assessing 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.

Results: 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 0.0%), and for the 22G needle was 91% (CI, 85–94%; I² 19.9%). The specificity of the 25G needle was 96% (CI, 94–98%; I² 0.0%) and for the 22G needle was 91% (CI, 87–94%). The positive likelihood ratio of the 25G needle was 4.57 (CI, 2.08–10.03, I² 0.0%), and for the 22G needle was 4.26 (CI, 0.43–41.88, I² 94.7%). The test post-od the probability of the 25G needle in the study population was 95% and for the 22G needle was 50%. The area under the ROC 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: Baseline 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

P1563 TECHNICAL FEASIBILITY STUDY OF EUS-GUIDED HYDROGEL MICROPARTICLE INJECTION INTO THE PANCREATIC HEAD-DUODENAL WALL INTERFACE IN A CADAVERIC MODEL

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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 interface between the head of the pancreas and the duodenal wall to increase the peri-pancreatic space for the course of radiotherapy.

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. Baseline CT was performed on three unfixed cadaveric specimens. Using a linear EUS scope, the interface between the duodenal wall and the head of the pancreas was identified in a cadaveric model. A 17G EUS-FNA 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 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 visualized during EUS with hyperechoic echogenicity and on post-procedure CT images without any artifacts in all cases.

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.

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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 interface between the head of the pancreas and the duodenal wall to increase the peri-pancreatic space for the course of radiotherapy.

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. Baseline CT was performed on three unfixed cadaveric specimens. Using a linear EUS scope, the interface between the duodenal wall and the head of the pancreas was identified in a cadaveric model. A 17G EUS-FNA 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 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 visualized during EUS with hyperechoic echogenicity and on post-procedure CT images without any artifacts in all cases.

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.
P1564 EX-VIVO RADIOFREQUENCY ABLATION OF PORCINE LIVER: A PRELIMINARY STUDY OF EFFICACY OF A NEW SYSTEM
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Introduction: There are few published studies about the use of a novel radio-frequency (RF) system (EUSRA RF needle; VIVA RF generator; STARmed Co, Ltd; Koyang, Korea), 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 under EUS, we performed ex-vivo tests 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 radiofrequency 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 tissue charring), an isolating plate and a pedal to deliver RFA. Liver samples were treated at different 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 macroscopically: the size (millimeters) of the global treated area and the size of the coagulative necrosis. Histopathologically, blinded about ablation powers and times applied, we produced the report of the histological examination (millimeters of coagulative necrosis and surrounding zone).

Results: The lower ablation power (10 W) produced the maximum macroscopic ablation effect, RFA ablation time at 10 W showed a good linear correlation with the pathologist didn’t see any difference in size of coagulative necrosis among the different injured zones by thermal effect: a central small and well-demarcated coagulative necrotic area around the needle insertion point (A zone) with a maximum diameter of 4 millimeters and a surrounded larger area of “diaphanization” (B zone), showing mild signs of cellular alterations (cytoplasmic hypochromia) 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 (R²=0.24).

Conclusion: With this new system is feasible and effective to produce very small areas of coagulative necrosis (millimeters) well-demarcated in respect to the surrounding parenchyma and could be useful, in the future, to treat, with multiple 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 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

P1565 THROMBOEMBOLIC DISEASE DIAGNOSED BY ENDOSCOPIC ULTRASOUND IN PANCREATIC CANCER: A CASE SERIES
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Introduction: Malignant associated thromboembolic disease (TED) has a complex multifactorial pathogenesis. Tumor cell activators platelets and express procoagulant factors including tissue factor and thrombin; in addition, normal host tissues express procoagulant activity in response to the tumor. Thrombotic risk varies substantially according to cancer location and pancreatic cancer is one of the leading causes. The clinical spectrum includes migratory superficial thrombophlebitis, arterial thrombosis, deep venous thrombosis, portal vein thrombosis and disseminated intravascular coagulation. We report here to assess the role of endoscopic ultrasound (EUS) diagnosing TED in pancreatic cancer patients.

Aims & Methods: We performed a retrospective review of all EUS cases for pancreatic cancer in two centers and assessed all TED diagnoses.

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 (EUS identified arterial mural nodule (PE) and 1 inferior vena cava thrombus (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 Location</th>
<th>Cytology</th>
<th>Confirm?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Head</td>
<td>Adenocarcinoma</td>
<td>Yes</td>
</tr>
<tr>
<td>Female</td>
<td>Tail</td>
<td>Adenocarcinoma</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 mediastinum 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

P1566 THE ROLE OF EARLY ENDOSCOPIC ULTRASOUND FOLLOWING TRANSABDOMINAL ULTRASOUND IN PATIENTS WITH SUSPECTED BILIARY COLIC
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Introduction: Cholelithiasis is the most common cause of biliary pain, leading to cholecystitis and gallstone pancreatitis. Patients affected by cholecystolithiasis presents an incidence of cholelithiasis ranging from 8% to 20%. When the suspicion of cholecystolithiasis is confirmed, stones should be removed by ERCP, but this operative measurement is associated with high rates of adverse events such as ERCP pancreatitis, bleeding or perforation. A correct diagnosis of cholelithiasis, 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 US, performed an EUS within 48 hours since admission. Data are presented as proportions with 95%CI and mean±standard deviation (SD). A 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-diagnostic accuracy).

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%). Furthermore, US documented bile duct (CBD) stones in 58 (65%) patients, CBD sludge in 4 (5%) subjects, whereas no cholecystolithiasis 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 3.7 (95% CI: 2.6–5.5).

Conclusion: US performed in the emergency room has a low diagnostic performance compared to EUS, but remains a first-step-approach in patients with right upper quadrant pain and/or in epigastric region, associated with an elevation in liver enzyme. Based on the results of our study, EUS performed within 48 hours from the admission allows an immediate correct endoscopic treatment with significant spare of unnecessary operative procedures, reducing possible related complications and costs.

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

References

P1567 BILIOPANCREATIC RADIOFREQUENCY ABLATION: COMPARISON OF THE THREE CURRENTLY AVAILABLE DEVICES IN A PIG MODEL

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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 (endoHBP), on the liver and pancreatic parenchyma using an RFA catheter through an echoendoscope and biopsy needle (EUS RFA) and using a needle- shaped submucosal RFA (USRFA) through an echoendoscope. Tissue ablation time and power were allowed to vary. The animals were sacrificed 2 minutes after the procedure. Histopathological assessment of the maximal depth of thermal lesions was performed on three representative slices for each RFA implantation.

Results: In the common bile duct, the depth of ablation ranged from 215 ± 47 (Power = 8 W, Time = 90 s) to 330 ± 43 μm (Power = 10 W, Time = 30 s), suggesting that power is the most important parameter in this location. Conversely, depth of ablation in the liver parenchyma using the endoHBP probe ranged from 947 ± 237 μm (Power = 10 W, Time = 30 s) to 1960 ± 20 μm (Power = 10 W, Time = 180 s), suggesting that time is the most important parameter for RFA in the liver. The EUS RFA probe in the liver parenchyma showed a tissue necrosis increasing with the power setting used, ranging from 1981 ± 451 μm (Power = 8 W, Time = 120 s) to 2457 ± 1047 μm (Power = 12 W, Time = 120 s). This was not observed in the pancreatic parenchyma, tissue damage ranged from 3108 ± 373 (Power = 8 W, Time = 120 s) to 2305 ± 78 μm (Power = 12 W, Time = 120 s). The EUSRFA ablation of the liver parenchyma resulted in tissue damage from 1573 ± 245 μm (Power = 30 W, Time = 11 s) to 1545 ± 120 μm (Power = 70 W, Time = 9 s). In the pancreas, ablation depth ranged from 3616 ± 475 μm (Power = 30 W, Time = 15 s) to 3805 ± 446 μm (Power = 70 W, Time = 15 s).

Conclusion: Power and time of ablation have different effects on the extent of tissue necrosis in the common bile duct, the hepatic and pancreatic parenchyma, depending on the type of catheter used to perform RFA. As indications for human trials tend to expand specific ablation protocols should be developed for each tumor location and device.

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

P1568 ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS FACILITATES BILIARY CANNULATION IN CASE OF INACCESSIBLE INTRA-DIVERTICULAR PAPILLA

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Introduction: Endoscopic ultrasound (EUS)-guided rendezvous techniques facilitate common bile duct (CBD) access during subsequent endoscopic retrograde cholangio-pancreatography (ERCP) in a single session. Cases of initial ERCP 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 ERCP, due to inaccessible intra-diverticular papilla. Consecutive patients with distal CBD obstruction, in whom selective biliary cannulation at ERCP 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 sphincterotome was inserted through the papilla alongside or over the wire, to allow further manipulations.

Results: 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 ERCP 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 ERCP, in the same session, was achieved in 2/3 (66.6%) cases of malignant obstruction and in 13/15 (86.6%) cases of lithiasis. Retrograde biliary cannulation during ERCP was performed over the wire in 12/15 (80%) cases and alongside the wire in 12/15 (80%) cases. The mean procedural time was 80 minutes (range 55–115). A case of inadvertent CBD wall penetration by the sphincterotome, with contrast extravasation, occurred during an over-the-wire cannulation. No major complications, i.e perforation (extra-luminal air or bile leakage), bleeding and pancreatitis occurred. Three cases of amylasemia and transient fever were noted.

Conclusion: EUS-guided rendezvous is an effective salvage technique for failed CBD cannulation via standard ERCP, in cases of inaccessible papilla due to large ampullary diverticula. Along the guide-wire biliary cannulation may prevent inadvertent CBD wall trauma, compared to the over-the-wire approach.

Disclosure of Interest: All authors have declared no conflicts of interest.
P5170 EARLY CAPSULE ENDOSCOPY PROVIDES BETTER BLEEDING LOCALIZATION VALUE IN PATIENTS PRESENTING WITH NON-HEMATEMESIS GASTROINTESTINAL BLEEDING WHEN COMPARED TO CLINICAL SYMPTOMS ALONE

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Introduction: Traditionally, clinical symptoms such as melena were used as strong predictors for an upper GI bleeding source with primary evaluation with an EGD (esophagogastroduodenoscopy). Little consideration was given to the small bowel. It has been known for decades that melena can originate from the nose to the right colon and hematochezia can originate from the proximal gut to the rectum. Thus, current endoscopic approaches have limited localization value and diagnostic yields. We hypothesize capsule endoscopy (CCE) provides better localization of bleeding when compared to clinical symptoms alone.

Aims & Methods: Study design was a prospective single-center randomized trial comparing the efficacy of localizing the source of bleed in early CCE 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 NHGB (melena, hematochezia/anemia, or guaiac-positive stools/anemia). Exclusion criteria included presence of pacemaker, dementia, non-English speaking, hemodynamically significant bleeding. Patients were randomized 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: Patient enrolled, 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 bleed (either upper GI or colon) in 57.6% (n = 20) of patients at the time of the first diagnostic procedure compared to 48.4% (n = 16) in the SOC group (p = 0.02). 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, when melena was the only clinical symptom in the SOC (n = 26) group, 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 symptoms suspicious for lesions located in the esophagus (3.5%), 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. When bleeding was associated with SB MRI evidence of obstruction, 31% had CE diagnostic yield of 100% (n = 9) and only 2 patients had SB MRI with SB inflammation on CE (n = 2). However, when bleeding was associated with SB MRI evidence of active SB inflammation, only 1 had lesions seen on CE. The other 3 patients had insignificant or normal CE findings. Of the 10 patients with SB thickening and/or inflammation seen on MRI, 6 had corresponding CE findings; in particular, there were 2 cases with strictures on CE and 4 cases with mucosal inflammatory changes. 64 patients had normal SB MRI and 35 (54.7%) did have a normal CE. 18/64 (28.1%) patients had mucosal inflammatory changes on CE; 2 of them had strictures which were eventually traversed by the capsule. 10 patients had other non-inflammatory findings on CE. Of 18 patients with normal SB MRI, 9 had a raised FC (>150 μg/g), 5 had borderline FC levels (50–100 μg/g). None of the patients in this group had normal FC levels; the mean FC was 637.5 ± 844.4 μg/g. In the group of patients with both normal SB MRI and CE, 16/35 had raised FC. 7 patients had borderline FC levels. The overall mean FC for the 26 patients was 261.9 μg/g and the mean FC between patients with SB inflammation seen on CE and patients with normal SB MRI and CE was significantly different (p = 0.04).

Conclusion: A significant proportion (28.1%) of patients with normal SB MRI to investigate possible SB inflammation had CE findings showing SB inflammation, including 2 patients with strictures. However, no retention occurred in this group. Raised FC was significantly associated with CE findings despite normal SB MRI.

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

References

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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
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 6 pre-selected SBCE studies consecutively. These studies were presented in a random order. All readings took place using the single view mode, 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 influenced accuracy of SBCE interpretation and how many cases can be read before accuracy declines.

Results: In keeping with existing literature, high intra-observer variability amongst the participants was observed, with experienced readers reaching kappa values of 0.51 with the gold standard and 0.08 amongst novices. At 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. There was no significant change in accuracy with progressive capsule read when the group was analyzed 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 in accuracy at the time points, with a trend towards improvement, perhaps indicating skills acquisition during the study.

Conclusion: The accuracy of SBCE reading declines after one study reporting in a given period of time by expert SBCE readers. The optimal time interval 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

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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 examination post IC.

Aims & Methods: We aimed to determine the feasibility of same-day CCE post incomplete colonoscopy (IC). A prospective pilot study was performed with no 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 the time of IV metoclopramide was given to overcome the antinomity effects of fentanyl given during routine colonoscopy. Standard booster protocol for CCE was administered. Patient demographics, procedure indication, sedation studies can be read in one session. This study was performed in a given period of time by expert SBCE readers.

Results: At date, 40 same-day CCE have been completed. The mean age was 57 yrs.(22–83 yrs.) and 65% (n = 13), Iron deficiency anaemia 30% (n = 12), Inflammatory Bowel Disease Asessment 15% (n = 6), PR bleeding 5% (n = 2), abnormal pain 5% (n = 2), positive family history of CRC 5% (n = 2) and abnormal imaging 2% (n = 1). OC were incomplete due to excessive looping (40%) (n = 10), patient intolerance 30% (n = 12) and severe diverticular disease 30% (n = 12). The mean sedation used during OC was 5 mg midazolam (range 3–10 mg) and 75 mg of fentanyl (range 50–100 mcg). In all 84% (n = 34) of CCE were complete, however full colonic views were obtained in 94% (n = 37).

Mean colonic passage time was 222 minutes and overall image quality was deemed to be excellent in 16% (n = 6), good in 31% (n = 12), adequate in 44% (n = 18) and poor in 9% (n = 4) of participants. Overall findings were normal 25% (n = 10), polyps 38% (n = 15), inflammation 22% (n = 9), diverticular disease 25% (n = 10), and hypoplasia 3% (n = 1). Amongst the patients who had polyps, 8 required polypectomies and the remaining 7 were put on a surveillance programme. Based on the CCE findings, 4 of the IBD patients required treatment escalation. In terms of adverse events one patient reported abdominal pain during the procedure and one patient retained the capsule due to an inflammatory stricture.

Conclusion: CCE would appear to be feasible in the majority of patients and significantly detects colonic pathology.

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

Reference

P1575 DEDICATED DIFFUSION WEIGHTED MR IMAGING FOR STAGING PERITONEAL METASTASES IN COLORECTAL CANCER: AN ACCURATE PREOPERATIVE SELECTION TOOL FOR CYTOREDUCTION SURGERY (CRS/HIPEC) CANDIDATES

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Introduction: Peritoneal carcinomatosis (PC) is a well-known mechanism of spread for cancer; it is the second-most frequent cause of death in colorectal cancer patients. However, the prognosis of PC patients has dramatically improved in recent years. Now, PCS can be treated with cyto-reductive surgery and hyperthermic intraperitoneal chemotherapy (CRS- HIPEC). 5-year survival rates of up to 50% are reported after CRS-HIPEC. Despite this survival gain, CRS-HIPEC has a considerable morbidity rate of 25%–30% and severe complications in 21%2. Obvious benefits are patients with a limited life expectancy to avoid pointless and costly aggressive surgical procedures. Hence, recognizing patients with a maximum risk-to-benefit ratio for the procedure is imperative. To select patients who could benefit from CRS-HIPEC the Peritoneal Cancer Index (PCI) is used. The PCI combines the location/size of peritoneal tumours found at surgery in 13 abdominal regions. Each of the 13 regions is scored for implant size on a scale of 0–3 (= no visible tumor for implants; 1 = implants ≤0.50 cm; 2 = ≤0.50–5.0 cm; 3 = ≥5 cm). The PCI is the sum of the lesion scores from all 13 areas, and thus can vary between 0–39. The PCI is widely validated and is a quantitative prognostic indicator for long-term outcome. However, with this surgical staging procedure it is not always feasible to inspect all relevant abdominal regions. The aim of this study was to determine whether the PCI can be used to preoperatively select patients who would benefit from CRS-HIPEC.

Results: In keeping with existing literature, high intra-observer variability amongst the participants was observed, with experienced readers reaching kappa values of 0.51 with the gold standard and 0.08 amongst novices.

Aims & Methods: Therefore, the aim of this study was to estimate the PCI preoperatively with diffusion weighted MRI (DW-MRI) and compare this with the PCI found at surgery to assess whether DW-MRI can be used to select CRS- HIPEC candidates. In this ongoing project, a large ongoing study twenty-four consecutively included patients (April 2016–April 2017) with histologically proven peritoneal carcinomatosis from colorectal origin were included. Patients were scheduled for exploratory laparoscopy and/or CRS-HIPEC and underwent preoperative dedicated DW-MRI (scanning time: 30 min).

Two independent readers prospectively determined the PCI on DW-MRI. Patients were categorized as low-risk (PCI 0–21) versus high-risk (PCI 22–39); in our center considered operable versus non-operable. Reference standard was PCI at CRS surgery. Furthermore the ICC between the readers evaluating the same data was measured. In this study an ICC of ≥0.70 is the accepted level of agreement.

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

Reference

P1576 HISTOLOGICAL PREDICTION OF COLONIC POLYS BY COMPUTER VISION, PRELIMINARY RESULTS

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Introduction: During colonoscopy, clinicians perform visual inspection of the polyps to predict histology. Kudo’s pit pattern classification is one of the most commonly used for optical diagnosis. These surface patterns present a contrast with respect to their neighboring regions and they can be considered as bright regions in the image that can attract the attention of computational methods.

Aims & Methods: We aimed to assess the accuracy of a new computational system based on the segmentation and characterization of bright regions as
cases to obtain an automatic histological classification of colonic polyps. Our automatic classification system is based on the segmentation of 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 tubular shapes of the same area. We tested our method in high definition (HD) white light polyp images which were obtained with a colonoscope Olympus CIF-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.

**Results:** 51 polyp images were analyzed: 38 (74.5%) adenoma and 13 (25.5%) non-adenoma. Mean size of polyps was 14 ± 13 (range 1–40) and had the following morphology based on Paris classification: 5 (9.8%) 0-Ip, 27 (52.9%) 0-IIa and 19 (37.3%) 0-IIa. Mean Tub values were different for adenoma compared to Non-adenoma (19.5 ± 6.5 vs 14.1 ± 6.3; p = 0.013). An optimal threshold value of Tub = 13.14 to separate adenoma vs. non-adenoma was selected from the operating point of the ROC curve. With this value, our method was able to provide an accurate histological diagnosis in 44 out of 51 images (86%) (table) with a Sensitivity, Specificity, PPV and NPV for the diagnosis of adenoma of 95%, 61%, 88% and 80%, respectively. On the other hand, processing of a single HD image took 2.7 seconds making feasible its use in the endoscopy room.

**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**

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**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 and its sensitivity for detecting polyps more than 1 cm has been reported to be greater than 90%. However, the detectability of LST in CTC has not been reported. CTC images were 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 10 mm detected by CTC. We considered the pseudo-negative lesions misdiagnosed with CTC interpretation (PNL) by radiologist or 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-Is (10 cases, 12 lesions) and 0-IIa (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-Is (5 cases, 6 lesions) and 0-IIa (11 cases, 13 lesions), respectively. True PNL/PNL ratio was 0-Ip 12.5%, 0-Is 50% and 0-IIa 68.5%, respectively. There was no PNL at 0-Iic, Type I, II and III on this study. Most of all true PNL were so called flat lesion not only 0-IIa 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 more than 4 Ip.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
thickess of wall thickness for fibrosis was >6.3 mm (specificity 100% and sen-
sitivity 69.23% with AUC 0.89). The cut-off of ADC value for fibrosis was

\(1.1 \times 10^{-3} \text{ mm}^2 \text{s}^{-1}\) with a sensitivity of 71.79% and specificity of 94.44%
(AUC = 0.83).

Conclusion: The DWI sequence with ADC value can identify fibrosis in intestinal

Aims & Methods: We have synthesised analogues of EMI-137 where the fluoro-
escent reporter was replaced by a radionuclide chelating moiety for PET imaging.

Results: We have identified a number of promising applications within Digestive
Onco11; 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 cost and is not always available. Fixation by clipping or sutures has similar

placement and have 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 stent migration. We pull strips of dental floss into the stent mesh and use 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 carbo13;

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 insu14; 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 length 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.

P1580 MOLECULAR IMAGING OF C-MET IN THE CLINICAL MANAGEMENT OF GASTROINTESTINAL CANCERS

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Introduction: The primary indication for c-Met targeted optical imaging agent EMI-137 is enhanced endoscopic 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 fluoro-
escent reporter was replaced by a radionuclide chelating moiety for PET imaging.

Results: We have identified a number of promising applications within Digestive
Onco11; 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 cost and is not always available. Fixation by clipping or sutures has similar

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of symptomatic strictures at Robert-Bosch-Hospital Stuttgart from 2008–2017, disease (CD) is well established; however, long-term outcome is unknown. Endoscopic treatment of enteric strictures in patients with Crohn’s
Introduction:

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2. Moyes LH, Mackay CK, Forshaw MJ. The use of self-expanding plastic stents to dilate oesophageal strictures: a comparison 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 (standardized 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.

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 dilation 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 the heterogeneity. There were 45 articles found in Embase, 55 in PubMed, and 6 in the Cochrane database. Altogether 11 articles were suitable for analyses, after exclusion of duplicate articles, case reports, results from non-human and pediatric studies. These studies involved 373 patients in total. The periodic dilation index showed a significant difference compared to the dilation alone group (95% CI: −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 (standardized mean difference: 0.274, 95% CI: −1.822; 1.165, p-value: 0.510).

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

References

Result: There was an improvement in the dysphagia symptom with corticosteroid injection as well. We recommend the use of intralesional steroid injection in the treatment of benign esophageal strictures.

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Disclosure of Interest: All authors have declared no conflicts of interest.
Results: Between 01.01.2012 and 01.04.2016, 152 stents were inserted in 125 patients with palliative oncologic esophageal 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, 30 (24%) 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 (34.2%) were documented to have on going 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 2 (1.3%); dysfunction of the anti-reflux valve in 3 (2.0%); and food bolus obstructions in 10 (6.6%). Stent occlusion occurred in 21 (13.6%) cases and stent disintegration 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 bronchi. 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 “stenet 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.

References


P1587 LONG-TERM RESULTS: WHEN RE-STENOSIS COMES AFTER ESOPHAGEAL STENTING?

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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-stenosis 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-stenosis after stenting by tumor growth. We performed a retrospective analysis of patients with advanced esophageal cancer who was under- went stenting as definitive treatment. A series of 165 patients were included in the study. The median follow up time was 5 years in 41.6% of patients. We installed 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 patent. The median stent length was 4 cm. For the stent was placed 2 cm distal and 2 cm proximal of the stricture. 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 the proximal tumor spread (83.3%) was noted in cases of localization in the lower part of the esophagus or cardia. Period of re-stenosis was from 2 to 12 months, an average of 5.7 months. The period of re-stenosis 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-stenosis by tumor overgrowth. Period of re-stenosis was an average of 5.7 months. The direction of spread tumor after stenting and the time of dysphagia recurrence correspond to 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.
available in many centers and have revolutionized the management of iatrogenic bile duct and vascular 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 post-cholecystectomy complications were referred to interventional radiology unit in our university hospital. They were 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 = 2), bleeding 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 calibre catheters over 6 months followed by manometry studies before catheter withdrawal (n = 6), biliary stenting with plastic stent (n = 2). Insertion of pigtail catheter (n = 15), preoperative progressive pulmonary-peritoneum for their adhesiolysis effect to manage post-operative huge incisional hernias before their surgical repair (n = 1), and selective embolization of bleeding hepatic arterial pseudo-aneurysm (n = 1) using tissue adhesive (n-Buty 2 Cyanoacrylate).

**Results:** All percutaneous procedures were technically successful. No recorded complications. No major complications or death in this cohort of patients. No recorded bleeding related hepatic artery pseudo-aneurysm (n = 3), no pneumo-peritoneum for their adhesiolysis effect to manage post-operative huge incisional hernias (n = 2). Manometric studies before catheter withdrawal (n = 3), hospital acquired infection (n = 2), Insertion of pigtail catheter (n = 5), preoperative progressive pulmonary-peritoneum for their adhesiolysis effect to manage post-operative huge incisional hernias (n = 1), selective embolization of bleeding hepatic arterial pseudo-aneurysm (n = 1) using tissue adhesive (n-Buty 2 Cyanoacrylate).

**Conclusion:** Minimally 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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**References**

P1594 PROGNOSTIC SIGNIFICANCE OF CARDIORESPIRATORY FITNESS, BODY COMPOSITION ANALYSIS, AND SYSTEMIC INFLAMMATORY RESPONSE IN UPPER GASTROINTESTINAL CANCER

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Introduction: 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) and subjectively by assessing potentially curvilinear surgery in the patients with 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 measurement of systemic inflammatory response [SIR, including FBC, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50kHz and 100kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd, Essex, UK), and Cardio Pulmonary Exercise (CPEX) 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 25 patients. Postoperative morbidity and mortality occurred in 75 (8.6%) patients, and GC versus OC had a significantly higher incidence of postoperative complications (P=0.002). On univariable analysis, MSS ≥3 was associated with anaerobic threshold (p=0.011), CRP (p=0.001), mGPS (p=0.011), intra-cellular water (ICW, p=0.041), and extracellular water content (p=0.015). Multivariable binary logistic regression revealed ICCW content [ICW vs. UQ CD ≥ 3, 5 vs. 3%, OR 1.22 (95% CI 1.06–1.41) p=0.006] and CRP [ICW vs. UQ CD ≥ 3, 7 vs. 37%, OR 1.03 (99-106) p=0.076] to be independently associated with MSS.

Conclusion: Seven-fold variation in morbidity severity was observed after OG cancer surgery and SIR were the only significant prognostic indicators.

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

P1595 COPING AND QUALITY OF LIFE AFTER ESOPHAGECTOMY FOR CANCER

E. Pinto1, F. Cavallin2, L.M. Saadeh1, R. Alfieri2, C. Caberlotto2, M. P1595 COPING AND QUALITY OF LIFE AFTER ESOPHAGECTOMY FOR CANCER

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Introduction: 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.

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Conclusion: Seven-fold variation in morbidity severity was observed after OG cancer surgery and SIR were the only significant prognostic indicators.

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

Results: Thirty-two patients completed the questionnaires after surgery. Mean COPE-NVI scales were: SS =22.3 (SD 9.5), AS =23.2 (SD 4.8), PA =30.8 (SD 7.9), PO =22.5 (SD 8.8), TO =22.1 (SD 6.0).

Comparison of manual counting to the computed methods showed mostly excellent accuracy of the obtained results using intraclass correlation with reliability analysis (ICC) and coefficient B with linear regression (B):

mCRC OvCa HCC PCa
ZC ICC = 0.926, B = 0.968 ICC = 0.897, B = 0.968 ICC = 0.869, B = 0.621 ICC = 0.601, B = 1.200
ISCC = 0.973, B = 0.851 ICC = 0.992, B = 0.503 ICC = 0.990, B = 1.060 ICC = 0.934, B = 0.914
IA/ICC = 0.986, B = 0.945 ICC = 0.990, B = 0.660 ICC = 0.955, B = 0.723 ICC = 0.932, B = 0.327

Results: Quantification results from 2 blinded observers for reliable detection of hot spots were 0.949 in mCRC, 0.843 in OvCa, 0.805 in HCC and 0.957 in PCa. The ICC for the ratio of CD8/CD3 in 1 hot spot compared to the average from 3 hot spots was consistent in all groups. The absolute cell count in 1 vs 3 hot spots (CD3+/CD8+) showed a percentage agreement ≥ 0.750 in all groups yielding consistencies. The results were consistent in all groups. IAC reached excellent reliability in frozen sections and HCC but not in PCa (Table). High infiltration of CD3+ lymphocytes correlated significantly with improved DFS in HCC (p =0.016) and PCa (p =0.001) as well as improved OS in PCa (p =0.046). High infiltration of CD8+ lymphocytes correlated significantly with improved DFS in HCC (p =0.028) and OS in PCa (p =0.006).

Conclusion: In this study we introduced a systematic way to count tumor stroma cells in frozen and paraffin sections. Some rules should be observed: First, subjective selection of hot spots by 1 observer is acceptable. Second, if a ratio is to be determined, quantification of 1 hot spot is sufficient. If the absolute cell count is to be determined, quantification of 3 hot spots is recommended. Third,
P1598 LIVER RESECTION IN OBESE PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction: Liver disease has 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 safety and the benefit of laparoscopic partial hepatectomy and left lateral segmentectomy in the obese patients.

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 steatosis were significantly more 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. 14.4%). No significant difference was found in relapse-free survival rate, or overall survival 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. 397.3 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.

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

References

P1599 TIMING OF ELECTIVE CHolecystectomy AFTER ACUTE CHolecystitis - A POPULATION-BASED STUDY

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Introduction: Acute cholecystitis is treated as acute cholecystitis is standard of care. However, many patients are still treated conservatively and undergo elective cholecystectomy 2-12 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 perform a delayed surgery in case of a secondary diagnosis of acute cholecystitis. All patients treated for acute cholecystitis in Sweden during the years of 2005 and 2013 were identified through the Swedish Inpatient Register. This cohort was cross-linked with the Swedish register for gallstone surgery. Comparison on surgical outcome was retrieved with definition of a new annulament of endotherapy dedicated to such complications. In cases of post laparoscopic sleeve gastrectomy leaks, a shift is ongoing between closure or diversion methods (Ovesco, clips, covered self expandable metal stents (SEMS)) and internal drainage (double pig tail stents). Two large studies have just reported a high efficiency and a low complication rate with internal drainage with double pig tail stents for post sleeve gastrectomy leaks. No data are available for such an endoscopic internal drainage in fistulas of the upper digestive tract not linked to bariatric surgery. Here we report the results of a pilot bi-centre retrospective study.

Aims & Methods: A retrospective study of all upper digestive tract leaks not linked to bariatric surgery and treated by double pig-tail stent (DPTS) in two

P1600 MIXED REALITY SURGERY USING CT-BASED PATIENT-SPECIFIC IMMERSIVE 3D Holograms ENHANCED SPATIAL AWARENESS IN HEPATO-PANCREATO-BILIARY AND GASTROINTESTINAL SURGERY

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Introduction: We developed a CT-based patient-specific holographic surgical simulation navigation system of immersive mixed reality (MR).

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 grass three-dimensionally during actual surgical navigation. Pre- and intra-operative imaging with better visualisation of the surgical anatomy and spatial awareness with visualisation of surgical instruments in relation to anatomical landmarks.

Conclusion: We report illustrative benefits of the immersive MR in surgical planning, simulation, education, and image-guided navigation. These could overcome the limitations of the conventional image-guided surgery.

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

Reference

P1602 EFFICACY OF DOUBLE PIGTAIL STENT FOR POST OESO-GASTRIC SURGICAL LEAKS NON-LINKED TO BARIATRIC SURGERY: A PILOT BI-CENTRE RETROSPECTIVE STUDY


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Introduction: Post-surgical leaks are the first complication after non-bariatric oeso-gastric surgery in terms of frequency and morbidity. Anastomotic fistula changes the prognostic of the operated patient increasing the length of stay, increasing costs, increasing mortality and increasing risks of oncological recurrence. Surgery is still a possibility of treatment in particular in case of severe sepsis but the role of endotherapy involved with definition of a new annulament of endotherapy dedicated to such complications. In cases of post laparoscopic sleeve gastrectomy leaks, a shift is ongoing between closure or diversion methods (Ovesco, clips, covered self expandable metal stents (SEMS)) and internal drainage (double pig tail stents). Two large studies have just reported a high efficiency and a low complication rate with internal drainage with double pig tail stents for post sleeve gastrectomy leaks. No data are available for such an endoscopic internal drainage in fistulas of the upper digestive tract not linked to bariatric surgery. Here we report the results of a pilot bi-centre retrospective study.

Aims & Methods: A retrospective study of all upper digestive tract leaks not linked to bariatric surgery and treated by double pig-tail stent (DPTS) in two
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 this 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 pathology: 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 68 years (range: 23–86)) was after start the develop of abdominal compartment syndrome (ACS, IAP more than 25 Hgmm). Decompressive laparotomy was performed in one case with satisfactory result. In general, mortality in study group was 18.4% (9 cases). In control group we fixedated 9 cases of ACS (23.7%), including 3 cases of light ACS (intraabdominal pressure (IAP) – 12–15 mmHg), 2 cases of moderate ACS (IAP 16–20 mmHg), and 3 cases of severe ACS (IAP 21–25 mmHg). Decompressive laparotomy was performed in one case with severe ACS (IAP more than 25 Hgmm). Decompressive laparotomy was performed in three cases, satisfactory result was achieved in one 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 desease, not only for rAAA, but this point requires further investigations.

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

References

P1604 ENDOSCOPIC PERORAL DRAINAGE (EPOD) OF PERITONEAL COLLECTIONS AND ABSCESSES SECONDARY TO BARIATRIC SURGERY LEAKS: THE PARADIGM SHIFT OF SEEING PERITONEUM AS AN ORGAN AMENABLE FOR FLEXIBLE PERITONEAL INTERVENTIONS
A.J. Baptista1, A. Salinas1, M.A. Guzman1, A. Gelrud2, D. Ramirez1, W. Garcia1, A. Oropeza1, H. Rass1, J.F. Pin˜eru´a Gonsa´ lvez1

Aims & Methods: The aim of this study is to evaluate utility and safety of EPOD to treat peritoneal collections and abscesses secondary to BS leaks. Methods: This retrospective study included 65 consecutive patients from 2007 to 2015 at a single center (40 Sleeve gastrectomy, 25 gastric bypass) after 5 to 21 days from...
surgery. Patients presented heart rate over 120 bpm. Images from CT showed left subphrenic, peri-gastric or free abdominal collections. An Upper GI endoscopy revealed a failing to reverse a diverting ileostomy.

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Results: Eight patients underwent surgical correction of ileostomy leak. At endoscopy, the ileostomy was closed by performing a mucosectomy with endoscopic forceps. Five patients had no signs of peritonitis and were discharged within the first 24 hours. Two patients developed abdominal infection and underwent surgery. One patient required a percutaneous drainage procedure due to an abdominal abscess.

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

P1605 CLINICAL ASSESSMENT OF THE FAILING TO REVERSE A DIVERTING ILEOSTOMY

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Results: Eight patients underwent surgical correction of ileostomy leak. At endoscopy, the ileostomy was closed by performing a mucosectomy with endoscopic forceps. Five patients had no signs of peritonitis and were discharged within the first 24 hours. Two patients developed abdominal infection and underwent surgery. One patient required a percutaneous drainage procedure due to an abdominal abscess.

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

P1606 BODY COMPOSITION AS A PREDICTOR OF MORBIDITY AND MORTALITY FOLLOWING BILIPANCREATIC CANCER SURGERY

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Introduction: The impact of body composition on the outcomes following pancreaticoduodenectomy is still unclear.

Aims & Methods: The aim of this study was to analyze the association between body composition parameters and postoperative complications and 90-day mortality in patients undergoing bilipancreatic 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 mass, abdominal 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 third lumbar vertebra.

Postoperative complications were recorded according to Clavien-Dindo classification and categorized as minor (grade I-II) and major (grade IIIb).

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 70.8 ± 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 skeletal muscle area index was a protective factor (OR 0.89, 95% CI 0.79–0.99, P = 0.05) and longer 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 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 visceral fat index (OR 1.05, 95% CI 1.00–1.10, 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 lower muscle radiation attenuation, are associated with worse clinical outcomes following bilipancreatic cancer surgery.

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

P1607 GASTROSCHISIS: A 16-YEAR STUDY

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Introduction: Gastroschisis is a ventral body wall defect through 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 was to evaluate defect’s incidence, management and outcome of patients with gastroschisis in our institution.

Results: During the period 2000–2016 the overall incidence of gastroschisis in our NICU was 1.25/10,000 births (95% CI 1.13–1.37). The defect was diagnosed in 140 cases (7.83%). In 124 cases (8.86%) the abdomen was closed prenatally. In 7 cases (0.3%) the diagnosis was made after birth (due to failure of skin closure). The average birth weight was 3.5 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 cardiac anomalies, 3 cases with major anomalies of abdominal wall and 5 cases with cardiac defects. Surgical techniques performed for abdominal defect closure were: primary closure in 35 cases (25%), staged closure in 12 cases (8.57%), complex technique in 44 cases (31.4%) and manual reduction in 49 cases (35%). The average period of surgical pause was 12.9 days and the mean length of stay in NICU was 30.4 days. Patients were 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 and 20 neonates (14.3%) 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 (especially small area of abdominal wall).

Conclusion: The management of neonates with gastroschisis 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 gastroschisis in our Unit and as consequence, the outcome of patients with gastroschisis has dramatically improved during the studied period.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 2017 09:00-14:00
IBD III – ASSESSING THE EFFECT OF ETHNICITY ON URINARY METABOLIC PROFILES IN INFLAMMATORY BOWEL DISEASE
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Abstract: P1608

Assessing the effect of ethnicity on urinary metabolic profiles in inflammatory bowel disease

Introduction: Urinary metabolic profiling has been shown to distinguish patients with inflammatory bowel disease (IBD) from healthy controls (HC), and also separate ulcerative colitis (UC) from Crohn’s disease (CD) in Caucasian (Cau) cohorts (1). Diet and lifestyle also have an effect on metabolic profiles (2), and clinical phenotype varies between Caucasians and South Asians (SA)(3), however discriminative metabolites have not been studied in different ethnic populations. The aim of this study was to compare the urinary metabolic profiles of IBD patients and healthy controls from Caucasian and South Asian backgrounds.

Methods: Samples from 405 IBD patients (283 Caucasian and 122 South Asian) and 137 healthy controls (98 Caucasian and 48 South Asian) were analysed by H1NMR spectroscopy. Clinical and dietary data were collected. Orthogonal partial least squares discriminant analysis (OPLSDA) was performed to examine whether there were differences in metabolic data between Cau and SA. R2 (variance), Q2 (quality assessment) and p values (validity) for each model were described.

Results: The phenotype of South Asian Crohn’s disease was not significantly different to Caucasian Crohn’s disease in this cohort. In the South Asian UC group there was more pancolitis (p = 0.051) and less proctitis (p = 0.008). There were more vegetarians in the South Asian group. OPLSDA was able to separate patients with IBD from healthy controls, and also UC from Crohn’s disease, in the Caucasian cohort, but this separation could not be replicated in South Asians (negative Q2 values).

Conclusion: The separation between Caucasian and South Asian healthy controls may reflect differing lifestyles including diet. Caucasian IBD patients could be separated from healthy controls, and Crohn’s disease from UC, replicating previous studies. South Asian IBD patients could not be separated from healthy controls which may be due to lower numbers of South Asian patients in this study, and specifically less Crohn’s disease patients where stronger discriminating models have been shown in Crohn’s disease in previous studies. In Crohn’s disease, Caucasians and South Asians could be separated, but Caucasian and South Asian patients 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
antibiotics (including sulfasalazine), probiotics or fiber supplements were required. A 7-day run-in, subjects were fed study meals high (11 g oligo-saccharides, 2 g resistant starch) or low (<1 g) in fermentable fiber over a 12-h period before ingesting the pH-motility capsule, subjects then crossed over to the other diet 3 days after passage of the capsule. Endpoints were diet-associated differences in overall, caecal and distal colonic pH, and colonic transit time (CTT), taken as time between the ileo-caecal junction and capsule exit. Caecal pH was defined as the minimum pH following passage through the ileo-caecal junction whereas maximum pH was arbitrarily used as distal colonic pH.

Results: 15 UC patients (aged 24–72 y; 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 fermentable fiber intake reduced caecal 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 caecal 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 heterogeneous responses to a high fermentable fiber diet. 64% patients had slower 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></th>
<th>Overall mean pH (95% CI)</th>
<th>Mean caecal pH (95% CI)</th>
<th>Mean distal colonic pH (95% CI)</th>
<th>Median [IQR] 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 (6.2–6.6)</td>
<td>5.6 (5.3–5.9)</td>
<td>7.9 (7.6–8.2)</td>
<td>17 [9–23]</td>
</tr>
<tr>
<td>High fiber</td>
<td>6.3 (6.0–6.5)</td>
<td>5.2 (4.9–5.5)</td>
<td>8.1 (7.8–8.4)</td>
<td>21 [16–39]</td>
</tr>
<tr>
<td>p-value</td>
<td>0.20</td>
<td>0.01</td>
<td>0.09</td>
<td>0.13</td>
</tr>
<tr>
<td>Healthy n = 9</td>
<td>Low fiber</td>
<td>6.9 (6.5–7.2)</td>
<td>5.5 (5.2–5.8)</td>
<td>8.2 (8.0–8.5)</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 (7.4–8.0)</td>
<td>18 [15–32]</td>
</tr>
<tr>
<td>p-value*</td>
<td>0.02</td>
<td>0.15</td>
<td>0.04</td>
<td>0.58*</td>
</tr>
</tbody>
</table>

*paired t-test or *Mann-Whitney test

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.

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Introduction: Microbial dysbiosis has 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 operational taxonomic units (OTUs) were calculated with QIIME software. Bacterial communities were subjected to 16S rDNA sequencing. The V4 hypervariable regions of 16S rDNA were sequenced by the Illumina MiSeq2500 platform. Quality control and operational taxonomic units (OTUs) were calculated with QIIME software.

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

Reference:

Disclosure of Interest: 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)-1β, TIMP-1, and TNF was assessed by real-time quantitative PCR. Western blot analysis was performed with antibodies against ferritin, p-NFκB-p65, HIF-1α, p-mTOR, p62 and LC3. 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 p-mTOR and blocked autophagy. Iron overload led 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 sequestered into ferritin or transported out of the enterocyte into the circulation by ferroportin (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 hepcidin, which regulates and is regulated by systemic iron levels. Hepcidin expression is induced by cytokines and results in anemia of inflammation.

Introduction: Environmental hypoxia has been established to influence the development 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 sequestered into ferritin or transported out of the enterocyte into the circulation by ferroportin (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 hepcidin, which regulates and is regulated by systemic iron levels. Hepcidin expression is induced by cytokines and results in anemia of inflammation.

Results: Hypoxia induced the mRNA expression of TNF and IL-1β concomitantly with the iron transporters DMT-1 and FPN. Moreover, we found that the abundance of 8 genera in CD and 23 genera in UC, particularly the Escherichia genus, were significantly different when comparing with controls. We next surveyed the taxonomies composition distribution between different phases of disease, detecting that the abundance of the Bacteroidetes was significantly decreased in active CD group compared with inactive CD group. However, the Proteobacteria was only nominally increased in active CD relative to inactive CD, which did not hold significance after correction. Furthermore, the relative abundance of the Bacteroidetes, especially the

Bacteroides, was negatively correlated with the calculated Crohn’s disease activity index (CDAI), indicating that the Bacteroides could be related with the disease activity.

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

Reference:
Introduction: In both forms of inflammatory bowel disease (IBD), Crohn’s disease (CD) and ulcerative colitis (UC), inflammation of the gut wall is associated with extracellular tissue acidification. Low extracellular pH stimulates the family of proctosensing G-protein coupled receptors (GPCRs); ovarian cancer G-protein coupled receptor 1 (GPR1), T-cell death-associated gene 8 (TDA8) or G-protein and 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), TDA8 has been identified as an IBD-risk gene. The mechanism behind the interaction between treatment groups (5-ASA, Azathioprine and Steroids) and disease activity; 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 TDA8 is unclear.

Aims & Methods: In this study we aim 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 showed similar samples taken from 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 in IBD compared to non-IBD patients. 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).

Conclusions: 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 among the pH-sensing receptors involved in IBD.

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

References:


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 Bacteroidetes which are consistent with the UC dysbiosis described in the literature. Functional analysis of this unique microbial profile through metagenomic and metabolomic techniques may explain the different disease behaviour in the SA group.
P1615 SUPPRESSION OF PHOSPHOLIPASE A2 OF INTESTINAL MICROBIOTA AMELIORATES MUCOSAL INFLAMMATION IN A GENETIC MOUSE MODEL OF ULCERATIVE COLITIS

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Introduction: Bacterial phospholipase A2 activity has been implicated in the pathogenesis of IBD. We evaluated whether the inhibition of the bacterial ectolphospholipase A2, which is likely responsible for the liberation of tissue deactivating pro-inflammatory phospholipids, might have an impact on experimental colitis.

Methods: We compared two groups of 10 female C57Bl/6 mice each, with either wild-type (WT) or STAT6 (-/-) mice, receiving a high phospholipid diet (HFD). On day 21 of age, the WT mice were treated with the bacterial phospholipase A2 inhibitor UDCA-LPE and the STAT6 (-/-) mice with saline. In order to inhibit bacterial colonization, each group of mice was treated with 1 mg of 10% Vancomycin i.p. twice a day. Body weight, stool consistency, stool calprotectin and stool macroscopic morphology were evaluated until day 7. The mice were sacrificed on day 7, and their colons were analyzed histologically

Results: Stool calprotectin levels were significantly reduced in the UDCA-LPE treated WT mice compared to saline treated WT mice. Histological analysis revealed reduced inflammatory changes in the UDCA-LPE treated WT mice compared to the saline treated WT mice. The bacterial ectolphospholipase A2 activity helps to improve mucosal inflammation in a genetic mouse model of UC.

Aims & Methods: Our results confirm the findings that the inhibition of cyclooxygenase activity reduces mucosal inflammation in a genetic mouse model of UC. It is assumed that the inhibition of bacterial phospholipase A2 activity reduces mucosal inflammation in a genetic mouse model of UC.

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

P1617 B2-STRUCTURING AND B3-PENETRATING PHENOTYPE IN CROHN’S DISEASE: CHANGING DIRECTION OF MACROPHAGES POPULATION AND WNT SIGNALING

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Introduction: Macrophages contribute to fibrosis through the release of different mediators and the pattern of secretion may vary according to their phenotype. Recent evidences have 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 presenting an strictureting (B2) or a penetrating (B3) behavior and described using qPCR variations in the levels of macrophage markers (CD68, CD163, Arginase). The expression of macrophage markers (CD206, CD68, iNOS, Arginase), Wnt ligands (Wnt1, Wnt2, Wnt3, Wnt4, Wnt5a, Wnt5b, Wnt6, Wnt7a, Wnt8a, Wnt9b, Wnt10b, Wnt16 and DKK1) and DKK1 (inhibitor of Wnt signaling) was analyzed by RT qPCR.

Results: B2-patients seem to present a higher infiltration of macrophages since increased expression of markers classically used to detect pro-inflammatory (CD68) and regulatory/pro-resolving/pro-fibrotic phenotypes (CD206, ARG1) 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 (Wnt3), reduced (Wnt2B) or unchanged expression in the absence of significant variations in the levels of macrophage markers (Table). Table. Relative Gene 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 + Kewman-Keuls test. (*P<0.05 vs control, **P<0.05 vs WT).

Conclusion: Crohn’s disease patients presenting a strictureting (B2) or a penetrating (B3) behavior undergoing surgical resection differ in the pattern of macrophage infiltration and Wnt signaling.

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

P1616 THE IMPACT OF THE RS8005161 POLYMORPHISM ON G PROTEIN-COUPLED RECEPTOR GPR65 (TDAG8) PH-ASSOCIATED SIGNALING IN INTESTINAL INFLAMMATION

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Introduction: Inflammatory bowel diseases (IBDs), Crohn’s disease (CD) and ulcerative colitis (UC), are typically associated with a decrease in local pH. This decline is likely due to decreased luminal pH (as measured in acidified stools) and increased uptake of luminal phospholipids. These two factors are known to be critical for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucosal layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity of the mucus layer which facilitates bacterial invasion. Concomitantly to phosphatidylcholine-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.

Methods: PLA2 activity was inhibited by PLA2 (rs8005161) activity in isolated macrophages from UC patients while PLA2 activity improved mucosal inflammation in a genetic mouse model of UC. It is assumed that the remaining mucus PC shield is better preserved when luminal PLA2 is suppressed.

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

P1618 CD16 POSITIVE CELLS EXPRESS TGFβ AND MEDIATES MURINE INTESTINAL FIBROSIS

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Introduction: M2 macrophages play a key role in injury repair and fibrosis. We have previously reported that STAT6 deficient murine macrophages mediate mucosal repair after TNBS-induced acute colitis in and that, in a chronic model, STAT6 deficient animals accumulate macrophages expressing the CD6 marker that promote intestinal fibrosis.

Aims & Methods: We aim to analyze whether the expression of the pro-fibrotic mediator TGFβ 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 (10 ng/ml) or vehicle and the mRNA expression of CD16 and TGFβ was analyzed 72h later by qPCR. IL-4 or STAT6 (-/-) mice were weekly administered with TNBS (0.5, 0.5, 0.75, 0.75, 1, and 1 mg, intrarectally) or saline and were sacrificed 7 weeks after the first TNBS administration. The mRNA expression of CD16, TGFβ, Vimentin, Coll1a1, e-SMAD, MMP2 and TIMP1 was evaluated in murine intestinal mucosa by qPCR. In all cases results were expressed as fold induction vs vehicle and the correlation between different measurements was analyzed using Pearson’s correlation coefficient (r).

Results: A positive and significant correlation between CD16 mRNA and TGFβ mRNA was observed in isolated macrophages from WT mice (r = 0.637, P = 0.03) and STAT6 (-/-) mice (r = 0.677, P = 0.002) receiving different treatments. In the mucosa of WT and STAT6 mice the expression of TGFβ showed a positive correlation with increased pH shifts and decreased with CD16 mRNA (r = -0.60, P < 0.001), and with the expression of several fibrotic markers (vimentin: r = 0.653, P < 0.0001; Coll1α: r = 0.5101, P = 0.0003; e-SMAD: r = 0.4126, P = 0.0048; MMP2: r = 0.5729, P < 0.0001; and TIMP1: r = 0.3958, P = 0.0071).

Conclusion: The expression of TGFβ is associated with CD16 positive cells and is involved in murine intestinal fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1619 GS-21, A7 NICOTINIC ACETYLCHOLINE RECEPTOR AGONIST, ATTENUATE DSS-INDUCED COLITIS BY IMPROVING INTESTINAL MUCOSAL BARRIER FUNCTION

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Introduction: The intestinal inflammation is reduced by electrical stimulation of the different vagus nerves. Cholinergic neural output may be a target to minimize tissue damage in autoimmune disease. Cholinergic neural output may modulate innate immune responses through stimulation of α7 nicotinic acetylcholine receptors (α7nAChR). GS-21, a selective α7nAChR agonist, has previously demonstrated to inhibit the inflammation associated with rheumatoid arthritis (RA). In this study we investigate whether GS-21 protects against DSS-induced colitis and its potential mechanism.

Aims & Methods: Male BALB/c mice (8–10 weeks old, n = 32) were randomly divided into 4 groups: normal control group, DSS-induced group, GS-21 treatment control group (DSS-induced mice treated with GS-21), α-BGT group (DSS-induced mice treated with α-BGT and GS-21) (n = 8, each group). DSS group was given final concentration of 3.5% DSS drinking water, the treatment group was treated with GS-21 (20 mg/kg intraperitoneal injection per day, α-BGT group was pre-treated with α-BGT (0.1 mg/kg/day, intraperitoneal injection) for 30 min prior to GS-21 injection, and the control group received saline. Caco2 cells were randomly divided into 4 groups: normal control group, TNF-α-induced group, GS-21 treatment control group, α-BGT group. TNF-α group of Caco2 cells were exposed to 25 ng/ml TNF-α, GS-21 group were given 100 ng/ml GS-21 for 30 min prior to TNF-α; α-BGT group pre-treated with α-BGT (50 ng/ml) for 30 min prior to GS-21 injection. BAY 11-2058 (NF-κB inhibitor) group were given 50 ng/ml BAY-11-2058 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 fluorescent 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 GS-21 (9.1 ± 0.74 cm vs 6.85 ± 0.53 cm, P < 0.01). HA1 score decreased (1.25 ± 1.32 vs 10.5 ± 6.24 P < 0.05). The α7nAChR antagonist α-BGT can eliminate those protective effects (Figure 1).

2. The intestinal permeability improved after administration of GS-21 compared with DSS-induced mice (49.52 ± 28.59 μg/ml vs 157.40 ± 32.40 μg/ml P < 0.05), whereas α-BGT can block the effect (115.50 ± 10 μg/ml vs 49.52 ± 28.59 μg/ml P < 0.05) (Figure 2). The expressions and distribution of tight junction protein in DSS-induced mice were enhanced after treatment with GS-21 (p < 0.05) (Figure 4.5). GS-21 attenuated the NF-κB activation (p < 0.05) (Figure 3). α-BGT induced protein expression reversed the inhibitory effect of GS-21 (p < 0.05) (Figure 6). GS-21 improves the distribution of tight junction proteins in the intestinal epithelial cells induced by TNF-α (Figure 7). GS-21 reduces nuclear translocation of NF-κB in Caco2 cells induced by TNF-α (Figure 8).

Conclusions: These results provide proof of mechanism for the protective effects of GS-21 in mice and human Caco2 cells. The potential target for GS-21 is the tight junction protein.

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

Reference


P1621 ANAEMIA PREVALENCE AND TREATMENT APPROACH FOR INFLAMMATORY BOWEL DISEASE

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Introduction: For inflammatory bowel disease (IBD), anaemia is the most frequent extra intestinal manifestation of the disease. We aimed to determine the prevalence of anaemia in IBD patients 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): 208). According to WHO criteria, anaemia occurs when haemoglobin value is below 13 g/dL in men and 12 g/dL in women. For inflammatory bowel disease (IBD), anaemia is the most frequent extra intestinal manifestation of the disease (p < 0.001). CD involvement were as follows: 54.5% in ileal involvement, 37.1% in colonic involvement and 28.5% in ileocolonic involvement. Furthermore, 27.5% of UC patients had proctitis (E1) involvement while 41% of them had involvement in left colon (E2) and 31.5% had pancolitis involve. There was no significant relation between anemia frequency and duration of disease (p = 0.216). We specified the following types of anaemia: IDA only 32.9% (77), ACD only 7.6% (13), IDA and ACD combination 6.8% (16), anaemia stemming from B12/folic acid deficiency 6.4% (*), multiple anaemia 17.8% (**), anaemia with no etiology 30.7% (72). 50% of patients with anaemia received treatment; 23% of IBD patients had oral iron intake and 41% of them had parenteral iron treatment while 55% of patients who were suffering from megaloblastic anaemia got B12/folic acid treatment.

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%) then in UC cases (41%) (p < 0.001). CD involvement were as follows: 54.5% in ileal involvement, 60.4% in colonic involvement and 58.5% in ileocolonic involvement. Furthermore, 27.5% of UC patients had proctitis (E1) involvement while 41% of them had involvement in left colon (E2) and 31.5% had pancolitis involve. There was no significant relation between anemia frequency and duration of disease (p = 0.216). We specified the following types of anaemia: IDA only 32.9% (77), ACD only 7.6% (13), IDA and ACD combination 6.8% (16), anaemia stemming from B12/folic acid deficiency 6.4% (*), multiple anaemia 17.8% (**), anaemia with no etiology 30.7% (72). 50% of patients with anaemia received treatment; 23% of IBD patients had oral iron intake and 41% of them had parenteral iron treatment while 55% of patients who were suffering from megaloblastic anaemia got B12/folic acid treatment.

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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%) then in UC cases (41%) (p < 0.001). CD involvement were as follows: 54.5% in ileal involvement, 60.4% in colonic involvement and 58.5% in ileocolonic involvement. Furthermore, 27.5% of UC patients had proctitis (E1) involvement while 41% of them had involvement in left colon (E2) and 31.5% had pancolitis involve. There was no significant relation between anemia frequency and duration of disease (p = 0.216). We specified the following types of anaemia: IDA only 32.9% (77), ACD only 7.6% (13), IDA and ACD combination 6.8% (16), anaemia stemming from B12/folic acid deficiency 6.4% (*), multiple anaemia 17.8% (**), anaemia with no etiology 30.7% (72). 50% of patients with anaemia received treatment; 23% of IBD patients had oral iron intake and 41% of them had parenteral iron treatment while 55% of patients who were suffering from megaloblastic anaemia got B12/folic acid treatment.
Conclusion: We found out that almost half of all IBD patients (50.3%), whom we followed up, had anaemia, the most frequent reason of which was IBD. 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.

P1622 SUCCINATE RECEPTOR (SUCNR1) MEDIATES INFLAMMATION IN A MURINE MODEL OF COLITIS
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Introduction: IBD is a chronic disorder of the gastrointestinal tract characterized by disruption of epithelial barrier function and gut inflammation. Evidence supports a role relevant of succinate, an intermediate of the tricarboxylic acid cycle, in inflammation and the succinate receptor, SUCNR1, has been recently been related with rheumatoid arthritis1.

Aims & Methods: To analyze the role of SUCNR1 in a murine model of colitis induced by TNBS. WT or SUCNR1−/− mice received TNBS (3.5 mg/20g mice, intrarectally) or vehicle (EtOH 40%) and were weighed daily (results are expressed as percentage vs the weight at day 0) and mice were sacrificed 2 and 4 days after TNBS administration. Colon length and mucosal histology were evaluated. In addition, succinate and succinate metabolites urine concentrations were also used to characterize the subpopulations of T cells (CD4+CD45RBhi vs CD4+CD45RBlow) two days after TNBS treatment.

Results: Treatment of mice with TNBS induced a loss of body weight that peaked 2 days after treatment. Subsequently, mice began to recover and, 4 days after treatment, body weight reached similar values to those of control animals. In TNBS-treated SUCNR1−/− mice compared with TNBS-treated WT mice: a) the loss of body weight was significantly (P < 0.05) attenuated (96.99 ± 0.7% vs 91.78 ± 1.1%); b) the reduction in colon length was prevented (6.6 ± 0.2 vs 5.2 ± 0.4 cm). The score was significantly reduced (3.5 ± 0.2 vs 4.8 ± 0.5) two days after TNBS treatment. d) the increase in the expression of pro-inflammatory molecules was significantly prevented (P < 0.05) (table 1) while no significant differences were detected in the expression of COX-2 (Table 2) (1) while no significant differences were detected in the expression of COX-2 (Table 2).

Table1: mRNA expression of different molecules detected in the colon of TNBS-treated mice. Results are expressed as fold induction vs the value obtained in WT mice.

<table>
<thead>
<tr>
<th>Genes</th>
<th>mRNA expression</th>
<th>WT</th>
<th>KO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arg1</td>
<td>6.86 ± 0.6</td>
<td>1.6 ± 0.6</td>
<td>1.1 ± 0.2</td>
</tr>
<tr>
<td>COX-2</td>
<td>2.6 ± 0.6</td>
<td>1.7 ± 0.2</td>
<td>0.7 ± 0.1</td>
</tr>
<tr>
<td>TNFα</td>
<td>4.2 ± 1.0</td>
<td>1.3 ± 0.3</td>
<td>1.2 ± 0.2</td>
</tr>
</tbody>
</table>

Conclusion: Activation of the succinate receptor SUCNR1 mediates murine colitis. These findings highlight the biological significance of SUCNR1 and open the door to novel approaches for IBD treatment.

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

References

P1623 ZIP7 INDUCES DISRUPTION OF THE INTESTINAL BARRIER THROUGH ACTIVATION OF ENDOPLASMIC RETICULUM STRESS IN INFAMMATORY BOWEL DISEASE
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Introduction: Inflammatory bowel disease (IBD) is a chronic intestinal inflammato-
ry disease with a tendency to recurrence, and intestinal barrier disorder plays a key role in its development. The deficiency of zinc is a clinical manifestation and crohn's disease. The transport system of IEC6, Zinc Transporter Member 7 (ZIP7) is a gate keeper protein in the intracellular release of zinc in cells. Recent studies revealed that ZIP7 helps to maintain the intestinal mucosal integrity. In addition, ZIP7 can regulate endoplasmic reticulum stress.

Aims & Methods: Our aim was to investigate the role of ZIP7 in IBD initiation and progression. We investigated the expression of ZIP7 in the intestinal mucosa of IBD patients and in interleukin-10-gene-deficient (Il10−/−) mice, and assessed the relation between ZIP7 and disease activity. ZIP7 upregulated/downregulated lentivirus was used to infect IEC6 and HIEC cells, then we evaluated the expres-
sion of inflammatory factors, mucosal tight junction proteins (Occludin and ZO-
1), and proteins related with endoplasmic reticulum stress (IRE1, XBPI,-traf2, ask1 and p-JNK). In addition, we used siRNA to silence IRE1 and SP600125 to inhibit the JNK pathway respectively, then evaluated the effect of endoplasmic reticulum stress on mucosal tight junction proteins.

Results: We found that ZIP7 was downregulated both in the intestinal mucosa of IBD patients and in Il10−/− mice, which was associated with disease activity. In IEC6 and HIEC cells, the expression of mucosal tight junction proteins was consistent with the level of ZIP7, but the expression of inflammatory factors and endoplasmic reticulum stress associated proteins were on the contrary. After the silence of IRE1 and the inhibition of JNK pathway, the expression of mucosal tight junction proteins was partly resumed in ZIP7 downregulated cells.

Conclusion: ZIP7 induces disruption of the intestinal barrier, which was associ-
ated with activation of endoplasmic reticulum stress in IBD. It is expected to provide a novel mechanism of IBD and provide a new target for the treatment of IBD.

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
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Introduction: Enteric glial cells (EGC) are located in a defined area around the enteric neural ganglia of patients affected by Crohn's disease is predictive of disease recurrence after post-operative resection. As cells of the enteric nervous system could be implicated in the formation of these myenteric and submucosal plexus in chronic inflammatory digestive diseases, inter-relationship between T cells and enteric glial cells (EGC) was investigated.

Aims & Methods: To analyse the interactions between immune and enteric neural cells, EGC isolated from the myenteric plexus of the rat digestive tract were co-
cultured with CFSE-labeled T cells. Impact of T cell activation on neuro-immune interactions was investigated by treating T cells with anti-CD3/anti-CD28 antibodies.

To determine whether inflammatory conditions favored the contacts between glial and immune cells, EGC were treated with LPS or TNF/IL1 prior their exposition to T cells. After 2 hours, non-adherent cells were removed and the T cells interacting with EGC (S100+) were counted. Immunocytochemistry were also used to characterize the subpopulations of T cells (CD4+, CD8+) that contact glial cells.

Results: Analyses reveal that non-activated T lymphocytes are capable of inter-
acting with EGC. They also show that activation of T cells with anti-CD3/anti-
CD28 antibodies increases the number of T lymphocytes interacting with EGC. Interestingly, an increased number of EGC-T cell interactions was observed after pretreatment of EGC with inflammatory stimuli. This phenomenon was also noted with activated T cells. Characterization of T cells show that both CD4 and CD8 cells are capable of contact with EGC.

Conclusion: Our present data reveal that EGC interact with T cell. These con-
tacts are favored by T cell activation but also by EGC exposure to inflammatory cytokines. Further experimental studies are required to characterize these neuro-
immune interactions but they suggest that EGC-T cell contact play a crucial role in case of inflammatory bowel diseases. This work is supported by the Association Francais Aapetil.

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

P1625 ENTERIC GLIAL CELLS REACTION TO INFLAMMATION IS LOST IN CROHN’S DISEASE
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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 Th2 (TNFalpha, IL1beta, 1 to 100ng/ 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 T1 treatment when compared with untreated or LPS treated EGC. LPS or TI treatment had no significant effects on IEB permeability.

Conclusion: Our present data reveal that EGC interact with T cell. These con-
tacts are favored by T cell activation but also by EGC exposure to inflammatory cytokines. Further experimental studies are required to characterize these neuro-
immune interactions but they suggest that EGC-T cell contact play a crucial role in case of inflammatory bowel diseases. This work is supported by the Association Francais Aapetil.

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

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.

P1626 PROSTACYCLIN REVERSES COLITIS THROUGH THE DOWN REGULATION OF INTESTINAL EPITHELIAL PERMEABILITY

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Introduction: In 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. The present study concerns the control of IEB permeability by PGI2 and its involvement in the development of colitis.

Aims & Methods: Production of PGI2 from control or IBD biopsies was established using high sensitivity liquid chromatography tandem mass spectrometry. Consequences of flolan 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 (sulfonic acid flux). Molecular mechanisms involved were assessed by quantification of junctional and pro-proliferative or pro-apoptotic protein expression (western blot and immunostaining). Eventually PGI2 impact on reversing IEB breakdown was assessed in vitro measuring permeability of mice or human mucosal explants treated with staurosporine apoptosis inducer, or permeability of IBD biopsies both treated or not with flolan.

Results: Biopsies from IBD patients had lower PGI2 production compared to both treated or not with flolan. 3 is normalized by flolan.

Conclusion: This study not only presents a role of PGI2 in controlling 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.

P1627 7A-HYDROXY-4-CHOLESTEN-3-ONE FOR DIAGNOSIS AND MANAGEMENT OF BILE ACID MALABSORPTION: FIRST YEAR CLINICAL EXPERIENCE

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Introduction: 7a-hydroxy-4-cholesten-3-one (7HCO) is a reliable method to diagnose bile acid malabsorption (BAM). Since 7HCO is an intermediate metabolite in the bile acid synthesis, increased levels reflect bile acid production, which is the case in BAM.

Aims & Methods: We evaluate retrospectively, prospectively collected clinical data during the first year after implementation of a new test using ultrahigh performance liquid chromatography coupled to mass spectrometry to measure 7HCO (see reference). In adult patients with clinical suspicion of BAM, unexplained diarrhea and a subgroup with obesity 7HCO was measured. Levels <30 ng/ml are considered as normal values. The decision to treat with cholestyramine was at the discretion of the treating physicians.

Results: We performed 126 7HCO analysis in 112 patients (62% female, mean age 51+/-16 years) with a mean level of 84+/- 91 ng/ml. Cholestyramin treatment was more likely initiated in patients with Crohn’s disease (RR 1.8; 95%CI 0.9-3.7) or after ileocecal resection (RR 3.1; 95%CI 1.7-5.7). Diarrhea improved in 60% of patients with a 7HCO level above 40 ng/ml. Thresholds of 60 or 100 ng/ml do not improve prediction of response to cholestyramin treatment.

7HCO measurement in subgroups

<table>
<thead>
<tr>
<th>Subgroups</th>
<th>Number</th>
<th>Mean [ng/ml]</th>
<th>SD</th>
<th>Range#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>79</td>
<td>94*</td>
<td>96</td>
<td>&lt;5 – &gt; 300</td>
</tr>
<tr>
<td>No diarrhea</td>
<td>33</td>
<td>59*</td>
<td>71</td>
<td>&lt;5 – &gt; 300</td>
</tr>
<tr>
<td>Cholestyramin treated</td>
<td>27</td>
<td>1678</td>
<td>105</td>
<td>11 – &gt; 300</td>
</tr>
<tr>
<td>Cholestyramin untreated</td>
<td>85</td>
<td>575</td>
<td>67</td>
<td>&lt;5 – &gt; 300</td>
</tr>
<tr>
<td>Crohn’s disease (CD)</td>
<td>18</td>
<td>182</td>
<td>105</td>
<td>13 – &gt; 300</td>
</tr>
<tr>
<td>Ileocecal resection (IR)</td>
<td>26</td>
<td>197</td>
<td>105</td>
<td>28 – &gt; 300</td>
</tr>
<tr>
<td>CD + IR</td>
<td>13</td>
<td>214</td>
<td>95</td>
<td>41 – &gt; 300</td>
</tr>
<tr>
<td>Obese (mean BMI 39.1 kg/m2)</td>
<td>21</td>
<td>62</td>
<td>49</td>
<td>6-244</td>
</tr>
</tbody>
</table>

Conclusion: A 7HCO measurement above 40 ng/ml seems to be associated with a good response to cholestyramine treatment, which suggests clinical bile acid malabsorption. However, most patients have higher levels, particularly in Crohn’s disease after ileocecal resection. These preliminary results warranted confirmation on a larger scale.

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

Reference


P1628 THE ROLE OF SEVERAL CYTOKINES IN THE PATHOGENESIS OF AUTOIMMUNE INFLAMMATION IN PATIENTS WITH ULCERATIVE COLITIS

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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 inflammation 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, 10 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 using 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;18.86]; p = 0.00007, p = 0.00029 respectively). The same trend was observed regarding IL-21, 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], however differences were not statistically significant (p = 0.172, respectively). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune inflammation in UC.

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

Aims & Methods: The role of several cytokines in the pathogenesis of autoimmune inflammation in patients with ulcerative colitis.
P1629 ANP32E IS INVOLVED IN THE STEROID-REFRACTORY ULCEARTIVE COLITIS (UC) IN HUMAN PATIENTS
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Introduction: The steroid-refractoriness is a common complication of ulcerative colitis (UC), which appears unpredictably. Several mechanism of action (MoA) has been implicated in corticosteroid failure. However, there are no conclusive studies on the molecular functions involved in UC steroid-refractoriness.
Aims & Methods: Therefore, we decided to know in depth the MoA related to the steroid-refractoriness of UC. So, we have analyzed unipredictable data of patients with UC treated with glucocorticoids. RNA from rectal biopsies was obtained before and on the 3rd day of glucocorticoid treatment. Then, whole-genome expression using microarrays (Illumina, USA) and profiles microRNA by sequencing (Illumina, USA) were analysed. After quality control, omics data were compared between phenotypes. The results of these comparisons were integrated into mathematical models generated by means of Systems Biology.
Results: These models reproduced the updated molecular interactions on glucocorticoids and UC, and integrating our experimental data, we identified a potential 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. NR3C1 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 member (in the H2-A group) of a cohort of the homologues 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 drug-refractory colitis.
Conclusion: In conclusion, this study has identified a new MoA related with UC steroid-refractoriness involving chromatin remodeling modifications.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1630 CO-HOUSING DSS TREATED MICE WITH HEALTHY MICE RESULTS IN FASTER NORMALIZATION OF THE INTESTINAL MICROBIOTA AND PROMOTES RECOVERY
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Introduction: The intestine is populated with myriads of bacteria, which form a complex ecosystem and have tremendous impact on our health. In inflammatory bowel disease (IBD), shifts in microbiota composition and a reduction in overall diversity have been described. There are attempts to therapeutically transfer the microbiota from healthy subjects to persons suffering from intestinal disease. In case of Clostridium difficile infections, this approach proves to be very efficient; the therapeutic value of focal microbial transfer (FMT) in IBD is being elucidated. In mouse models of intestinal inflammation, the effect of FMT has been studied poorly and if so, germ-free or antibiotic-treated animals have been used-models that poorly reflect the situation in human IBD patients. Here, we aimed to restore the composition of microbiota from healthy to diseased mice affects recovery from acute colitis.
Aims & Methods: Acute colitis was induced in 12–14 week old C57Bl6 mice by administration of 2% DSS in the drinking water for 7 days. Mice with colitis were co-housed with healthy mice after removal of DSS. Due to coprophagy, this results in fast transfer of the microbiota between co-housed mice. To analyse changes in the composition of microbiota over time, stool samples were taken every second day and sequenced for the V4 hyper-variable region in the bacterial 16S rDNA.
Results: As expected, DSS treatment resulted in severe weight loss, and even 7 days after withdrawal of DSS (day 15), histology confirmed severe colitis. Intestinal inflammation was accompanied by an overall reduction of microbial diversity (decreased Shannon index, p < 0.01), and a marked shift in the composition of the microbiota (increased abundance of Verrucomicrobia, Cyanobacteria and some families of Firmicutes [mainly Clostridiaceae], although overall abundance of Firmicutes was decreased [p < 0.01 for all]). However, on day 15, these changes were less pronounced, indicating a normalization of the microbiota composition upon recovery. DSS-treated mice which were co-housed with healthy littersmates after colitis induction, showed faster recovery (earlier weight gain, reduced histological scores, reduced levels of the infiltration marker monocyte chemotactic protein-1, less pronounced shortening of the colon, p < 0.01 for all) and an earlier normalization of the microbiota composition.
Conclusion: Our results indicate that co-housing of DSS-treated mice with healthy mice results in transfer of healthy microbiota to diseased mice, and promotes recovery from colitis. This indicates that introduction of a “healthy” microbiota might have beneficial effects during intestinal inflammation and opens the possibility to systematically study the effect of genetic alterations in donor and/or recipient on the outcome of FMT.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1631 ILEAL SULFOMUCINS PREDICT CLINICAL RECURRENT AFTER ILEO-COLONIC RESECTION FOR CROHN’S DISEASE: A PROSPECTIVE STUDY AT 5 YEARS
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Introduction: In Crohn’s Disease (CD), colonic phenotype of the ileum has been reported in severe lesions, but not in CD ileum with no lesions or with early post-operative recurrence (1).
Aims & Methods: In a prospective study at 5 years, we aimed to address whether colonic phenotype of the ileum might represent a subclinical marker of clinical postoperative recurrence in CD. At this purpose, clinical recurrence was assessed yearly for 5 years in a cohort of CD patients with colonic phenotype of the ileum already defined at surgery, 6 and at 12 months after ileo-colic resection (1). A different group of CD patients with ileal colonic phenotype of the ileum already defined at surgery, and reported at 6 and 12 months after ileo-colic resection (1), was clinically followed up for additional 4 years. In the 5 years follow up, indication for treatments, haematochemical, radiological and/or endoscopic assessments was given according to current European guidelines (2). Haematochemical assessments included whole blood count, ESR, serum CRP evaluation yearly for 5 years, with possible additional assessments, according to clinical indications. Clinical recurrence (CDAI > 150) was assessed yearly for 5 years. Colonic phenotype of the ileum was already reported at surgery, at 6 and 12 mos, according to the expression of sulfomucins (colon mucin-type) and sialomucins (small intestine mucin-type) (1). In the present study, correlation between the percentage of expression of sulfomucins and clinical recurrence was evaluated yearly for 5 years. Statistical analysis: results expressed as median (range), correlations were assessed by the Spearman correlation test, differences between groups by the unpaired T test.
Results: After ileo-colic resection, clinical follow up at 5 years was completed by 17/19 (89.4%) CD patients enrolled (12 males, age 41 [17–73]). The percentage of expression of sulfomucins (colon phenotype) as assessed in the ileal surgical specimens was significantly correlated with the CDAI score at 4 years (r = 0.62; p = 0.007) and at 5 years (r = 0.6; p = 0.010). Differently, in the ileal biopsies at 6 months, no correlation of colonic phenotype of the ileum, evaluated by the expression of sulfomucins was significantly correlated with the CDAI score at 6 months (r = 0.68; p = 0.003). The percentage of expression of sulfomucins in the ileal biopsies at 12 months was significantly correlated with the CDAI score at 6 months (r = 0.57; p = 0.015) and at 2 years (r = 0.53; p = 0.022). The ileal expression of sulfomucins in the surgical specimens at surgery was higher in patients with vs without clinical postoperative recurrence at 2 years (40 [10–99] vs 5 [0–50]; p = 0.044). The expression of colon mucin-type in the ileal biopsies at 12 months was higher in patients with vs without clinical recurrence, both at 12 months (30 [1–40] versus 0 [0–35]; p = 0.02) and at 2 years (30 [0–40] versus 0 [0–35]; p = 0.029). No correlations were observed between the percentage of expression of sulfomucins at surgery, at 6 or at 12 months and the haematochemical parameters considered.
Conclusion: In CD, colonic phenotype of the ileum as assessed by the expression of ileal sulfomucins, may represent a predictive marker of clinical recurrence after ileo-colic resection for CD.
Disclosure of Interest: L. Biancone: The study was not supported by any grant nor funded and any of the below reported disclosures are related to the study. Lecture fees or Advisory Board: Zambon, MS&D, Takeda, Abbvie, Sofar, Ferring, Wassermann; F. Pallone: The study was not supported by any grant nor funded and any of the below reported disclosures are related to the study. lecture fees from Zambon, Takeda.
All other authors have declared no conflicts of interest.

References
A total of 132 patients with IBD were randomly assigned to single monotherapy and 20 received anti-TNF-alpha single agent therapy. Nineteen patients received combination therapy of immunosuppressant and antitNF-\(\alpha\) agents. No significant difference between the single vaccination group and booster group was observed (geometric mean titers: H1N1: \(p = 0.41\); H3N2: \(p = 0.79\); B/Phuket: \(p = 0.82\); B/Texas: \(p = 0.84\)). In patients treated with infiximab, seroprotection rate (SP\%) and seroconversion rate (SC\%) tended to be lower in Indians than in Caucasians and Pakistanis (\(p = 0.001\)). Data for disease phenotype was available for 160/219 patients with UC (24\% E1, 42\% E2 and 34\% E3). There was no significant difference in disease extent between ethnic groups.

Conclusion: The incidence rates for IBD in seven urban populations in England are similar to recent data from Western Europe (IBD 18.5/100,000, UC 9.8/100,000 CD 2.7/100,000 UC 1.01/100,000 IBDU). Collective crude incidence rates were 15.54/100,000 for IBD, 9.69/100,000 for UC, 4.80/100,000 for CD and 1.01/100,000 IBDU. (Table 1) Crude incidence rates varied between populations: lowest was 6.81/100,000 in Pennine, North Manchester and highest 26.11/100,000 in Leicester. Overall incidence of UC was higher than CD (9.69/100,000 vs 4.80/100,000) and was consistent for all populations except Pennine (3.31/100,000 for CD and 2.76/100,000 UC). Of the total number of IBD cases recruited 298/351 were coded as IBDU. Caucasian, Indian or Pakistani. IBD, UC and CD incidence was similar between Pakistani and Caucasian groups. UC incidence was significantly higher in the Indian population compared to Caucasians and Pakistanis (\(p < 0.001\)). Data for disease phenotype was available for 160/219 patients with UC (24\% E1, 42\% E2 and 34\% E3). There was no significant difference in disease extent between ethnic groups.

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

References

The most frequently observed IBD-related malignancy is CRC, biological therapy was ever given for 4/10 patients with IBD-related mortality. Earlier death than in the rest and in the non-IBD population. Septic complications were the leader causes of IBD-related mortality characterized by a significantly lower in case of IBD-related mortality compared to the general population.

The aim of our nationwide registry was to prospectively collect IBD-related mortalities and all types of malignancies diagnosed in the Hungarian IBD population. Data on all death and malignancies developed between 2015 and 2016 in IBD patients were recorded. All other authors have declared no conflicts of interest.

Results: Fifty-five newly diagnosed malignancies were reported (mean age: 49.3 years old, mean disease duration was 16.9 years; male/female ratio was 34:21). 30 CD patients, mean disease duration was 19.9 years, mean male/female ratio was 22:8) one of them had 1 pouch cancer previously colectomized because of sigmoid tumor, 4 skin, 3 lung, 2 breast, 2 cervix, 2 pancreases, 2 liver, 1 gallbladder, 1 prostate, 1 esophagus, 1 salivary gland, 1 thyroid, 1 central nervous system, 1 testis, 1 ovary, 1 bladder, 1 rectum, 1 retroperitoneal sarcoma, 1 renal, 1 prostate, 1 esophageal, 1 salivary gland, 1 thyroid, 1 central nervous system, 1 pancreas, 1 tonsil, 1 laryngeal cancer, 1 B-cell lymphoma and 1 retroperitoneal sarcoma.

The incidence and prevalence 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 infection were assessed by bivariate and multivariate analysis after logistic regression.

Clinical remission, whereas half of the patients with ESBL-E colonization (n = 2.84) (p = 0.0035, compared with men). Regarding medical history, HR HPV and HPV16 prevalence were significantly higher in Crohn’s disease patients (90%, p < 0.0051; 14%, p = 0.0072, compared to the rest of the study population). Eleven patients (50%) with perianal CD had an AC infection with any HPV. Multivariable analysis associated peri-anal female gender and history of sexually transmitted disease with the presence of 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. These findings strongly support prophylaxis with vaccination and adequate screening in our patients.

Conclusion: We demonstrated that CD patients harbor more frequent AC infection with HR HPV and that immunosuppressive treatment is an independent factor for HR HPV infection at this site. These findings strongly support prophylaxis with vaccination and adequate screening in our patients. All authors have declared no conflicts of interest.

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Introduction: Extended spectrum beta-lactamase producing Enterobacteria (ESBL-E) are the most frequently found multi-drug resistant bacteria colonizing the gut of inflammatory bowel disease (IBD) patients. Changes in the microbiome may act as a trigger in IBD inflammation process.

Aims & Methods: The aim of the study was to analyze whether gut colonization with ESBL-E produces a significant increase in clinically relevant disease activity activity increase in ulcerative colitis (UC) and in Crohn’s disease (CD). All 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 EUCAST guidelines. To clinically evaluate disease activity status, 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%) of the CD patients were colonized with ESBL-E. Statistically 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;
P1637 IS SMOKING CESSATION LINKED TO NEW ULTERCITIS COLITIS CASES? A RETROSPECTIVE COHORT-BASED HYPOTHESIS

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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), mucoviscous and intestinal microbes are potential mechanistic factors influenced by the nicotine and numerous other substances. It has been hypothesized 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 persists among them over 60 years old (52%).

Conclusion: The proportion of former smokers at diagnosis increases dramatically and significantly over years in UC patients compared to CD patients. A peak was reached over 50 years old suggesting an indirect impact of smoking on the second peak of diagnosis in ulcerative colitis.

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

Reference

P1638 THE IMPACT OF INFLAMMATORY BOWEL DISEASE ON DENTAL HEALTH IN CHILDREN AND YOUNG PEOPLE: A CROSS-SECTIONAL STUDY

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Introduction: Crohn's disease (CD) is a chronic inflammatory disease that can affect any section of the gastrointestinal tract. Malnutrition is a common sequela in these patients and many pathogenic mechanisms could be involved such as poor dietary intake, altered energy expenditure, nutrient malabsorption and/or losses.

Aims & Methods: This cross-sectional study aimed to evaluate the resting energy expenditure (REE) in CD patients, in accordance with clinical status of disease, compared to a control group.

Methods: All consecutive adult CD women were prospectively enrolled, while a group of healthy women, matched for age and weight, served as control group (C). All CD women were classified in clinically active disease (CD-A) and clinical remission (CD-R) according to Crohn's Disease Activity Index (CDAI) (> 150 and < 150, respectively). All subjects underwent REE measure by indirect calorimetry with a canopy system, while body composition variables, such as fat-free mass (FFM) and fat mass (FM), were assessed by bio-impedance analysis (BIA).

Results: Finally, forty-two women with CD, 23 with clinically active disease (CD-A; CDAI = 219 ± 53) and 19 in clinical remission (CD-R; CDAI = 83 ± 41) were recruited for the study, while 40 matched-healthy women were enrolled as control group (C). We found that body weight, FFM and phase angle (PA) differed among groups; but age, height and FM did not. Post-hoc analysis revealed that body weight was significantly lower for CD-A in comparison with C (CD-A: 61.7 ± 9.2 kg vs C: 64.5 ± 6.3 kg; p = 0.002); FFM was reduced in women with CD than C (CD-A: 39.6 ± 4.3 kg and CD-R: 39.5 ± 6.8 kg vs C: 44.4 ± 6.8 kg; p = 0.01); while PA was lower for CD-A compared to both CD-R and C (CD-A: 5.5 ± 0.6 vs CD-R: 6.0 ± 0.5 and C: 6.1 ± 0.5; p < 0.001). REE did not differ among groups; nevertheless when it was adjusted for FFM, we observed that REE/FFM increased for both CD-A and CD-R groups compared to C (CD-A: 35.9 ± 4.17 kcal/kg vs C: 35.1 ± 4.96 kcal/kg vs C: 30.2 ± 3.38 kcal/kg; p < 0.01).

Conclusion: These preliminary results show that REE, when adjusted for FFM, is increased in women with CD, unrelated to disease activity, compared to healthy subjects and this could negatively affect the energy balance and contribute to weight loss.

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

Reference
**P1640 MAGNETIC RESONANCE CHOLANGIOGRAPHY ABNORMALITIES IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**

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Introduction: Primary sclerosing cholangitis (PSC) is a rare and devastating complication of inflammatory bowel disease (IBD). There is no standard for the screening of primary sclerosing cholangitis (PSC) in patients with IBD. Magnetic resonance cholangiography (MRC) may replace liver biopsy in this clinical situation. The main objective of this prospective observational study was to assess the frequency of MRC-detected liver abnormalities, including PSC, in adult IBD patients with liver function abnormalities and to identify clinical and biological characteristics associated with these findings.

**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.

**Results:** 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 patients had infra-clinical PSC and 11.2% of cohort 1 had apparent abnormal PSC. A histological analysis of resection tissue (n = 35) revealed 38% with MRC abnormalities. MRC Total Normal Ductopenia Doubt PSC Others

| Cohort 1 | 206 | 150 (72.8%) | 28 (13.6%) | 9 (4.4%) | 23 (11.2%) |
| Cohort 2 | 28 | 27 (96.4%) | 1 (3.6%) | 0 | 0 |
| Cohort 3 | 187 | 116 (62.0%) | 0 | 13 (7.0%) | 58 (31.0%) |

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.

**P1641 TRUECOLOURS ULCERATIVE COLITIS (TCUC): WILL PATIENTS WITH UC COMPLETE DIGITAL QUESTIONNAIRES IN REAL-TIME?**

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Introduction: TCUC is a comprehensive real-time web-based programme for patients with UC. It monitors multiple parameters via electronic questionnaires: symptoms, quality of life (QoL), outcomes (eg emergency department visits) and demographics. Medications are entered and personalised treatment guidance is delivered, 28%). Of 66 patients, 29 (44%) were male, median age 40.7 yrs (IQR 17.0, range 18-65), median duration of disease 5.6 years (IQR 10.7, range 0–30), distribution of disease (E1 18%, E2 38%, PSC 11%, activity of disease at entry (remission 38%, mild 35%, moderate 26%, severe 1%), tertiary education 58%, biologic use 47%. Retention rate 57/66, (86%). Main reason for withdrawal (5/9, 55%) was the need for sigmoidoscopy and monthly blood tests during the trial.

**Table 1:** Adherence to Questionnaires

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Adherence over 6 months</th>
<th>First 3 months</th>
<th>Last 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily symptom (SCCAI) questionnaire</td>
<td>76%</td>
<td>81%</td>
<td>72%</td>
</tr>
<tr>
<td>Fortnightly QoL questionnaires (IBD-Control 8, CUCQ-8 and EQ-SD)</td>
<td>95%</td>
<td>96%</td>
<td>94%</td>
</tr>
<tr>
<td>Once only demographic and outcome questionnaires</td>
<td>100%</td>
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<td>100%</td>
</tr>
</tbody>
</table>

Conclusion: Patients with UC will collect digital data in real-time, with good adherence to symptom, QoL, outcome questionnaires and FCAL home testing. Usability was classified as ‘superior’ but further improvements are possible. Larger studies are required to determine cost effectiveness.

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**P1642 BODY COMPOSITION AS A PREDICTOR FACTOR OF DISEASE OUTCOME IN INFLAMMATORY BOWEL DISEASE–RESULTS OF 3-YEAR FOLLOW-UP**

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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 hospitalisation.

**Aims & Methods:** We followed 198 IBD outpatients (144 CD and 54 UC) for 3 years to indentify potential risk factors of unfavourable disease outcome. Baseline body composition were measured by bioelectrical impedance analysing (BIA) method to evaluate nutritional status. Penalized logistic regression was used for the multivariate modelling of the outcome, with two sets of - prespecified predictor variables age, sex, Cu/CD, BMI, FFMI.

**Results:** According to our results 19.2% of the patients (n = 38) were underweight (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 flare or its complication at least once during the follow-up time. The mean period of hospitalization was 19.14 ± 32.7 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: 1.55–2.10, 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 strictureing Crohn's disease

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Introduction: The majority of Crohn's disease (CD) patients 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 damage or uptake 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 strictureing disease managed based on the CEUS findings. CD patients with strictureing disease were recruited from two IBD centres between June 2015 and February 2017. Patients with penetrating disease complications were excluded. CEUS performed in out-patients. Patients with rapid uptake (within 20 second after injection) were indicated for therapy escalation, patients without uptake with obstructive symptoms were referred for surgery; patients with uptake and no obstructive symptoms remained at the stable medication. In patients with the minimal follow-up of one year clinical and endoscopic remission was evaluated.

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 to another biological; 10 pts had therapy step-up to antiTNF or immunosuppression). Remaining three 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 strictureing disease and were 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 this time period in therapy escalation and one 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 strictureing 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

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Introduction: Crohn's disease (CD) is a chronic inflammatory bowel disease whose diagnostic delay (DD) is highly variable. A delay in diagnosis of MC patients has multiple implications, affects the therapeutic approach and patient outcome. 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 residential area at the time of diagnosis in urban, rural or semi-urban, distance 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 0 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 emaciation (27%), presence of extra-digestive manifestations (25.91%) and Isolated lesions (L1) (34%) and penetrating phenotype (B3) (22.67%) were associated with anaplastic lesions (27.12%). Diagnostic delay (>7 months) was associated with anaplastic phenotype. The 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 weight loss and a localization of the disease limited to the bowel had the predicting phenotype of disease. No socioeconomic variables or reflective of access to care were found to influence.

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

Reference


P1646 Tuberculosis in inflammatory bowel disease under tumour necrosis factor alpha antagonist—the risk beyond screening

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Introduction: Tumour necrosis factor alpha antagonist (anti-TNFα) has revolutionized the treatment of the inflammatory bowel disease (IBD). Considering that it plays a central role in immune-mediated modulation, there are some concern about opportunistic infections such as tuberculosis, particularly latent infection reactivation. Due to global high incidence of tuberculosis and its commonly severity in immunocompromised patients (extrapulmonary and disseminated pattern), the exclusion of latent tuberculosis infection (LTBI) infection is currently part of the screening prior to starting biologic therapy. Despite negative screening, the risk of tuberculosis infection remains active during the immunomodulation therapy. However, only a few cases of life-threatening disseminated tuberculosis have been reported in immunocompromised patients probably related to the increased use of higher accuracy screening tests, such as interferon-gamma release assays (IGRA). Negative screening cases with IGRA are not described.
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 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: 4 TST and 2 IGRA) and one patient had positive TST screening, been treated with isoniazid before starting anti-TNFα therapy. During screening the three patients were under immune suppressive and one under corticosteroid therapy. In the IGRA negative screening patients, the diagnosis of tuberculosis occurred within the first 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 sensitivity and specificity screening method.

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 MEDICROHN STUDY
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Introduction: The MediCrohn 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 patients participated in the study and completed the HBI trough a mobile app (mean age: 36 ± 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
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<tr>
<td>Active</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Remission</td>
<td>0</td>
<td>97</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>109</td>
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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 MediCrohn 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.

P1648 HISTOLOGICAL ASSESSMENT OF REMISSION IN ULCERATIVE COLITIS: DISCREPANCIES BETWEEN DAILY PRACTICE AND EXPERT OPINION
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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-Botula Index (HGI)) and a global visual scale (GVS). We evaluated inter- and intrasubject variation and correlations between scores and initial histological assessment using Cronbach’s alpha and Spearman’s rho analysis.
Results: We included 270 biopsies from 89 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 between daily practice histological assessment and dedicated GI-pathologists is significant and this may have important implications for the selection process of a unified histological disease activity score in UC.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1649 EVALUATION OF MODIFIED MAYO ENDOSCOPIC SCORE AND DUBLIN ENDOSCOPIC SCORE TO CORRELATE ULCERATIVE COLITIS EXTENSION, IN THE PREDICTION OF RELAPSE

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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 (MMES)1 and Degree of Ulcerative Colitis Burden of Luminal Inflammation (DUBLIN)2. MMES and DUBLIN scores presented good correlation (r = 0.54; p = 0.03). 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 = 0.0001). There was no significant difference between both correlations and analytically 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 analysis, 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 (MES, p = 0.0001), 0.75 (MMES, p < 0.0001) and 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, being 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

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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 were included in three different centers. 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 indeterminate 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 (4/20.2%) 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 because of disease activity (n = 7), anti-TNF (n = 3) or anti-TNF de-escalation (n = 3). Surgery was indicated on 62 (62/199,31.1%) patients after MRE. After one year of follow-up, the medical decision was maintained on 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.

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

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Introduction: Crohn’s disease (CD) is a chronic progressive destructive disease, resulting in cumulative structural bowel damage, which may predict long-term disability. The Lémann Index (LI) has been developed to measure CD-related bowel damage, including bowel surgery, presence of stricture and penetrating lesions (Pariente and al, Gastroenterology 2015). The first Inflammatory Bowel Disease - Disability Index (IBD-DI) has recently been validated (Gower- Rousseau, Gut 2015).

Aims & Methods: The aim of the present study was (1) to identify factors associated with bowel damage and with disability in CD and (2) to evaluate the correlation between the LI and the IBD-DI. We performed a prospective study in the tertiary referral center of the Claude Huriez Hospital in Lille from September 2016 to November 2016, including all consecutive CD outpatients.

Bowel damage was assessed by the LI calculated according to the published LI protocol. Abdominal and pelvic Magnetic resonance imaging (MRI)s were reviewed and red by the same couple of one gastroenterologist and one radiologist. The IBD-DI was also calculated for all patients. Factors associated with LI and IBD-DI levels were identified by means of bivariate analyses of variance.

Results: 230 patients were prospectively and consentively included. Median age was 34.0 (interquartile range [IQR]: 26.0–46.0) and median disease duration was 10.0 (IQR: 5.0–17.0) years. 65 patients (50%) underwent at least one resection surgery. The median LI was 10.8 (IQR: 0.6–17.5). Disease duration (p < 0.0001), cumulative anal location (p < 0.0001) and CD activity (p < 0.0001) were associated with higher LI scores. Median IBD-DI was 25.0 (IQR: 14.7–41.1). Female gender (p = 0.02), CD activity (p < 0.0001) and current anoperinal lesions assessed by clinical examination and pelvic MRIs (p = 0.001) were associated with higher IBD-DI scores. The correlation coefficient between the LI and the IBD-DI was 0.12 (–0.05, 0.29; p = 0.154).

Conclusion: In a large cohort of CD patients from a tertiary referral CD center, disease duration, anal location and CD activity are associated with bowel damage assessed by the LI, while female gender, disease activity and current anoperinal lesions are associated with disability assessed by the IBD-DI. Correlation between the LI and the IBD-DI was low.

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

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P1652 COMPARISON OF CYTOKINOS RNA EXPRESSION IN INFLAMED AND NON-INFLAMED MUCHARA OF PATIENTS WITH INFLAMMATORY BOWEL DISEASE
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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, 10, 12, IL-23, TNFα, CCR1, CCR2, CCR5, CD206, 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 IBID centre of University Hospital Bratislava. We biopsied and froze non-inflamed and inflamed tissue samples obtained from inflamed mucosa from sigma (CD, UC) and terminal ileum (CD). mRNA was extracted from mucosal biopsy samples, isolated by a RLT buffer and reversely transcribed. We normalized the expression of the target genes to the expression of the house-keeping gene (GAPDH). Finally, we compared the expression of cytokines in inflamed and non-inflamed mucosa separately for CD and UC patients.
Results: In UC patients, we observed higher expression of IL-8 (p = 0.04), IL-23 (p = 0.019), IL-10 (p = 0.002), CCR1 (p = 0.007), CCR2 (p = 0.037), CCR5 (p ≤ 0.01), CD206 (p = 0.011), TNFα (p = 0.002) and IL-6 (p = 0.006) in the inflamed mucosa from sigma. In CD patients, we observed increased expression of IL-8 (p = 0.005) and IL-10 (p = 0.001) in the inflamed mucosa of a terminal ileum and decreased expression of CCL5. Also, in group of patients with CD we did not observe the difference of the expression of mRNA cytokines between the inflamed and non-inflamed mucosa of sigma.
Conclusion: There 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 NEUTROPHEILIC AND ENDOTHELIAL ACTIVITY MARKERS WITH THE DISEASE ACTIVITY IN INFLAMMATORY BOWEL DISEASE
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Introduction: Inflammatory Bowel Disease (IBD) is a chronic autoimmune condition affecting epithelial and endothelial cells of the gastrointestinal tract. In IBD patients, inflammation, neutrophilia and endothelial dysfunction are common. There are limited number of studies that evaluate the relationship of neutrophilic and endothelial markers with disease activity of IBD. We aimed to investigate the relationship of these markers with disease activity in patients with Crohn’s disease.
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 Hamidiye 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) (142.8 ± 67.8 ng/mL and 26.3 ± 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 (116.7 ± 31.7 ng/mL and 457.2 ± 114.1 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 groups (n = 52) (153.0 ± 28.9 ng/mL and 555.6 ± 136.3 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). Structuring and fistulizing CD groups had significantly higher endoglin levels compared to inflammatory CD (p < 0.001 and p = 0.001). NGAL levels were significantly increasing with the increasing disease extension 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: p = 0.002 p = 0.574, NGAL: p = 0.20, p = 0.171). Endoglin levels were more strongly correlated with the pathologic activity scores in both UC and CD groups compared to NGAL levels (Endoglin: r = 0.443, p < 0.001; r = 0.453, 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.
Disclosure of Interest: 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 < 1.5 × 10⁹/l, platelet count < 1.50 × 10⁹/l) and/or hepatotoxicity (alkaline phosphatase (AP), gamma-glutamyltransferase (γ-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 445/2402 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 leukenopia (leukocyte count < 3.0 × 10⁹/l) or mild hepatotoxicity (< 2 ULN), primarily in the first years of treatment. Dose adjustments were more often associated with moderate leukenopia (leukocyte count < 3.0) than with mild leukenopia (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 Abbvie, MSD and as a consultant for Shire and received funding from Janssen Biologics BV. All other authors have declared no conflicts of interest.
Ulcerative colitis (UC) generally involves the entire large intestine extending from the rectum to the ileocecal junction. However, some patients with moderate or severe UC lack any obvious rectal involvement (known as rectal-sparing (RS)-UC).

In a total of 18 patients, by evaluating 123 colonic segments, 1831 images taken by FICE were evaluated by seven endoscopists and statistical analysis was performed. Images taken by FICE separately, from each areas of normal colonic mucosa, showed that the best imaging channels are; 2, 6, 9 for normal mucosa; 3, 7, 9 for dysplasia, and their histopathological correlation, by using a virtual chromoendoscopy technique, FICE and to investigate the effectiveness of this technique.

Aims & Methods: The purpose of this study is; to evaluate the image patterns of dysplasia in ulcerative colitis, and their histopathological correlation, by using a virtual chromoendoscopy technique, FICE and to investigate the effectiveness of this technique. Eighteen follow-up patients of our inflammatory bowel disease polyclinic, with UC at least 8 years of disease history and who are in clinical remission, were included to this study. Screening colonoscopy was performed to the patients included in the study. Entire colon and especially dysplasia suspected areas visualised with standard endoscope first, and then with FICE; random and targeted biopsies were taken. Image patterns were compared with histopathology diagnosis. Normal, colitis and polyps images acquired by FICE, were evaluated by seven endoscopists and statistical analysis was performed.

Results: In a total of 18 patients, by evaluating 123 colonic segments, 1831 images were acquired and processed. In dysplasia, differences between patients with refractory UC with or without RS. Of the 437 inpatients with refractory UC who achieved remission between April 2001 and September 2016 (follow-up period: 915 ± 53 days, mean ± SD), 57 patients were classified as RS-UC and 340 patients without RS (standard [S]-UC group). Patients of the two groups were compared for gender, age at onset, site of involvement, disease duration, pretreatment clinical activity index (CAI, Lichtiger score), Hb, C-reactive protein (CRP), total dose of pre-, and UC symptoms at UC center, and stored at –80°C in a molecular biology laboratory. Data on dysbiosis, bacteria profiles, and FCal were available in 57 CD, 80 UC, 12 IBD-U patients and 100 symptomatic non-IBD patients, and 45 healthy controls. CRP was available for 52 CD, 74 UC, 10 IBD-U patients, and 88 symptomatic non-IBD patients. HBI was available for 50 CD patients, while SCCAI was available for 77 UC patients. Disease activity: No association was found between FCal and dysbiosis in UC patients (P = 0.08), CD patients (P = 0.22), and healthy controls (P = 0.57). However, an association was found between FCal and dysbiosis in symptomatic non-IBD patients (P = 0.04) and in IBD-U patients (P = 0.005). An association was found between CRP and dysbiosis in CD patients (P = 0.02), while not for UC and symptomatic non-IBD patients. No association was found between HBI and dysbiosis in CD patients (P = 0.23), and between SCCAI and dysbiosis in UC patients (P = 0.32). Microbiota: Increasing severity in UC and non-IBD patients, and in combination with elevated levels of FCal and/or FCR in UC patients. In the healthy controls, increasing dysbiosis severity yielded higher abundance of Proteobacteria.

Conclusion: In conclusion, a relationship between faecal dysbiosis in sub-groups of IBD patients also with high FCal. Accordingly, gut bacteria profiles and abundance may potentially be used to differentiate between severity in UC and CD patients, as a non-invasive tool to monitor disease activity in IBD.
P1660 SIMPLIFIED MR ENTEROCOLONOGRAPHY CAN BE USED ON ENDOSCOPIC FINDINGS FOR ACTIVITY ASSESSMENT OF CROHN’S DISEASE
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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, as it gives excellent information about the clinical utility 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 and undergone 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 0.90% 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 81.5% in the validation phase. The MREC classification showed good agreement.

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
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Introduction: Syndrome (MetS) is a combination of biological 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 during a 1-year period. MetS was diagnosed according to the “harmonized” criteria as the presence of >3 criteria among elevated waist circumference, blood pressure, blood glucose, serum triglycerides, or reduced HDL cholesterol. All subjects underwent colonoscopy; endoscopic disease activity was assessed according to SES-CD and Mayo endoscopic scores. CRP, faecal calprotectin (FC), hemoglobin and ferritin levels were also measured.

Results: We enrolled 145 consecutive IBD patients (53 Crohn’s disease and 92 ulcerative colitis; 58 M/87 F; mean age 51 ± 18 years) and 250 age- and sex-matched controls. Overall MetS prevalence was 37% in IBD and 21.6% in controls (p = 2.1, 95%CI:1.32–3.39). Prevalence according to sex or disease type did not show significant differences. At multivariate analysis, age and BMI > 25 were associated to an increased probability for a positive MetS status both in IBD (OR = 3.41, and OR = 6.01) and controls (respectively OR = 3.47 and OR = 3.74). In patients under 50 years, age (OR = 1.24), CRP (OR = 1.9) and FC (OR = 1.35) positivity were associated to MetS status, while a BMI > 25 increased risk at any age (<50ys OR = 3.8, >50ys OR = 1.56). Disease activity related to MetS status at any age. Interestingly, anti-TNFα treatment was protective in both groups, but reached statistical significance only in older subjects (>50ys OR = 0.08). Regarding individual MetS components, in the <50ys subgroup, age and CRP positivity associated with an impaired glycemic (respectively, OR = 1.15 and OR = 2.28) and lipidemic status (respectively, OR = 1.23 and OR = 2.3). In older patients, CRP positivity only associated to impaired HDL status (OR = 5.41). Importantly, anti-TNFα treatment favourably associated to HDL status (OR = 0.2).

Conclusion: MetS prevalence is increased in IBD compared to healthy controls at any age. Age, age with increased BMI and/or inflammatory markers are at higher risk for MetS, while anti-TNFα agents appear to be protective. The components associated to MetS are differently distributed according to age, with the inflammatory ones prevailing in subjects <50 years and metabolic disturbances in older patients. These results indicate that with an increased age, inflammatory disease-related treatment and/or atherogenic MetS components may reduce MetS occurrence and associated risks in subjects >50 years, in younger patients more effective inflammation control measures may prevent MetS and its related long-term neoplastic and cardiovascular complications.

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

P1662 C-REACTIVE PROTEIN/ALBUMIN RATIO IS A GOOD PREDICTOR OF RESPONSE TO INTRAVERSE CORTICOSTEROIDS IN ACUTE SEVERE ULCERATIVE COLITIS
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Introduction: Patients with acute severe ulcerative colitis (ASUC) have a high risk of adverse medical therapy or colectomy. Recently, the C-reactive protein (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 within 48hrs was based on the lack of response. The non-respondents, 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, p < 0.001 and p = 0.008, respectively. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared with patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 vs 3.5 (g/dl), p = 0.005, respectively. The CRP/albumin ratio was a higher in unresponsive patients 40.06 vs 22.14, p = 0.022, showing a good accuracy for predicting non-response to intravenous corticosteroids with an AUC of 0.746, p = 0.01.

Conclusion: A high value of CRP/albumin ratio was significantly associated with the lack 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 CORPOSCULAR VOLUME (ΔMCV) IN INFLAMMATORY BOWEL DISEASE UNDER THIOPURINES PREDICTS DIFFICULTY IN ACHIEVING MUCOSAL HEALING COMBINATION WITH ANTI-TNF - THE OTHER SIDE OF THE MCV FLOW STUDY
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Introduction: The MCV flow study confirmed the association ΔMCV ≥7f1 at week 26-28 of Azathioprine monotherapy (mAZA) with favourable outcomes in severe inflammatory IBD patients.

Aims & Methods: For this work, our aims were to evaluate the need for step-up therapy in those under mAZA with ΔMCV ≤7f 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 ΔVGM ≤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]). ΔMCV’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 7f timepoint was verified. Evaluation of DeepRem in mAZA, as 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% women, mean age 39 ± 12.5 years; 58 ad, 14% operated] at week 26-28 of mAZA. Identified strong association between at average ΔVGM ≥7 (n = 70; 66%) with DeepRem (p < 0.05), while a ΔVGM <7 was associated with biological therapy need (p < 0.05). 45 patients were later started with Anti-TNF therapy.
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 10^11 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.

**Conclusion:** In our opinion there is a strong connection between fasting glucose, CRP level and exacerbation of the disease in CU patients but not in case of the Crohn’s Disease. In this group the elevated fasting insulin may be a marker of severe illness.

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

### References


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**P1666**

**THE ROLE OF MR IMAGING IN ASSESSMENT OF LEMANN INDEX IN THE COURSE OF CROHN’S DISEASE**

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**Introduction:** Crohn’s disease (CD) is a progressive, chronic and destructive inflammatory bowel disease 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 Lemann 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 examinations for digestive tract histopathology were performed. In 151 patients with confirmed active/chronic CD the Lemann Index has been calculated on the basis of radiological and clinical information for initial assessment of cumulative digestive tissue damage. To create the Lemann 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 inflammatory 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 Lemann Index, therefore, it seems that the evaluation of the first, baseline stage of the follow-up 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.

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**P1667**

**OPTICAL CHARACTERIZATION OF LESIONS IN IBD COLITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Introduction:** Optical imaging is being increasingly advocated for characterization of polyps during colonoscopy. The accuracy of these techniques during surveillance 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 dye based and virtual chromoendoscopy, 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 chromoendoscopy (DCE), virtual chromoendoscopy (VCE) (narrow-band imaging [NBI], i-scan, Fujinon intelligent chromoendoscopy [FICE]), magnification endoscopy and confocal laser endomicroscopy (CLE) had been compared with histopathology, as the reference standard. Enough information had to be provided for the calculation of sensitivity, specificity and diagnostic odds ratio. We pre-defined the decision-making criteria regarding the cut-off values for the analysis (in CLE NBI, FICE and VCE cut-off values were 1.2; 1.2 and 1.0, respectively). Both authors independently assessed the quality of each included paper. Disagreements were solved by consensus. Analyses were performed using RevMan software.

**Results:** After exclusion of duplicate studies, 146 relevant studies were identified. 23 studies were selected for qualitative analysis, and 12 were selected for quantitative analysis. Nine studies compared dye-based chromoendoscopy and histopathology, and 5 compared virtual chromoendoscopy and histopathology.

**Conclusion:** There is consistent evidence for the use of optical imaging techniques in detecting polyps in patients with IBD colitis, although with varying sensitivity, specificity and diagnostic accuracy. Further high-quality studies are needed and the development of high-quality standards is recommended.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1667 EVALUATION OF SEVERITY SCORE IN CROHN’S DISEASE
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Introduction: The need to stratify patients with Crohn’s disease (CD) according to the risk of developing complications is essential to delineate therapeutic approaches. A score that evaluates the severity of disease (Stiegel et al. Gut 2016) has recently been developed and published, taking into account intestinal lesions, disease activity and complications during the course of the disease, ranging from 0 to 100.

Aims & Methods: We aimed to evaluate the performance of the aforementioned score at the time of diagnosis and its relation to the need for surgery and hospitalizations in patients with CD. We performed a retrospective study that included patients diagnosed with CD in our hospital between 01/2012-12/2015. The score was calculated at the time of diagnosis and information on the course of the disease was collected. Statistical analysis was performed in SPSS (v23).

Results: A total of 57 patients (52.6% women) with a mean age of 33.74 ± 15.8 years were included. The median severity score at diagnosis was 16 ± 16.5 ranging from 4 to 50. Twenty-four patients (40.7%) required surgery and 29 (49.2%) were hospitalized for reasons associated with the disease. At diagnosis, the score was higher in AI1 patients (26 vs 19.2 and 13.7, p = 0.05), with a penetrating phenotype (25.5 vs. 19 and 12, p = 0.02), and in patients requiring surgery during the course of their disease (21 vs 14, p = 0.1). There was a positive correlation between the score at diagnosis and the number of surgeries during follow-up (r = 0.43; p = 0.05). Survival analysis showed a trend towards shorter time for surgery or hospitalization in patients with a score above the median at diagnosis (p logrank = 0.09).

Conclusion: The new severity score seems to be a promising tool for stratification and prognosis of patients with CD at diagnosis, and its utility should be validated in prospective studies.

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

P1669 ENDOSCOPIC FINDINGS AND COLONOSCOPIC PERFORATION IN MICROSCOPIC COLITIS: A SYSTEMATIC REVIEW OF THE LITERATURE
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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) coloscopes, 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, colonscopy, findings, This search was conducted separately with macrocolonscopía, score, categories, fractures. An additional search for MC AP was made.

Results: Eighty (n = 80) articles, predominantly single case reports (n = 45), were retrieved. Overall, 1,582 (1,159 female; 61.6 ± 14.1 years) patient(pts) with MC and endoscopic findings were reported. The majority of articles (n = 62) were on CC (756 pts; 77.5% female). We identified 16 papers comprising 779 pts (68.9% female) with LC and 7 articles describing 47 pts (72.3% female) confirmed to have MC. The youngest patient was 10 and the oldest 97 years old. Aside from diarrhoea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic lesions and endoscopic findings were reported. The majority of articles (n = 45) were on CC (756 pts; 77.5% female). We identified 16 papers comprising 779 pts (68.9% female) with LC and 7 articles describing 47 pts (72.3% female) confirmed to have MC. The youngest patient was 10 and the oldest 97 years old. Aside from diarrhoea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic lesions and endoscopic findings were reported.

Conclusion: Endoscopic findings are recognized with increased frequency in pts with MC. This could improve MC diagnosis by prompting a more extensive biopsy protocol in such cases and an earlier initiation of treatment. Procedure-related perforation has been reported in this group; therefore, cautious air insufflation is advisable when endoscopic findings are recognised.

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

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**P1670 PREVALENCE AND QUANTITATIVE ASSESSMENT OF LIVER STEATOSIS IN INFLAMMATORY BOWEL DISEASE PATIENTS**

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**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 with alcohol intake, those with a history of viral hepatitis were excluded from analysis. Clinical characteristics and laboratory data were recorded. Hepatic steatosis was evaluated by conventional ultrasound, hepatic steatosis index (HSI) and transient elastography with CAP (Fibroscan, Echosens, Paris). Significant steatosis (S ≥ 2) 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 48.5/53.1% in the UC group, 55.6/44.4% in the CD group), BMI (24.1 ± 3.9 vs. 21.5 ± 3.1 kg/m²), and Crohn’s disease severity (median HBI 21 and 21.1 mm (interquartile range 498 and 513 mg/dl). UC patients had higher mean cholesterol values (205.9 vs. 176.4 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 mean HSI was higher in the two groups 49.4 vs. 36.5, respectively. UC identified 18/29 (62%) patients with fatty liver, HSI detected 3 more patients (21/62, 33.9%) and CAP even more 2 (23/62, 37.1%), yielding an extra 8% detection rate. NAFLD-IBD patients were more likely to have CD phenotype, history of resection, steroid use and longer disease duration.

**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.

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**Interruption:** 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 stool biomarkers (Fpra and 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, 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), 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 La Fe Hospital Universitari de Bellvitge, Hospitalat del Llobregat (Spain).

**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 UC 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 stablish any eventual pathogenic link.

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

**P1672 DISTINGUISH BETWEEN ULCERATIVE COLITIS AND CROHN DISEASE USING AN ELECTRONIC NOSE AND DATA MINING: PRELIMINARY STUDY**


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**Introduction:** Inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS) may present in a similar manner [1] [2]. Measuring faecal calprotectin concentration is often recommended to rule out inflammatory bowel disease, however, there are no tests to positively diagnose irritable bowel syndrome and investigative tests are still used to rule out other pathologies [3, 4]. There is a chance, therefore, for novel, non-invasive disease-specific biomarkers. Volatile organic compounds (VOCs), originating from physiological metabolic processes in the human body, are excreted as waste products through stool samples. For this reason, several biological, non-invasive, simple and low-cost biological markers of inflammation that are useful in clinical practice for both diagnostic screening and therapeutic or course response monitoring are being evaluated in recent years Evolution of the disease. In this sense, stool markers, and especially calprotectin, have become of great importance in recent years as screening to select patients requiring more diagnostic studies and as a marker of activity for therapeutic follow-up [5]. Can the VOCs from stool samples show differences between ulcerative colitis and Crohn’s disease?

**Aims & Methods:** Five healthy individuals (control group- CON) and nineteen patients diagnosed with IBD were selected for the analysis of their stool VOCs. Healthy participants Healthy control samples (Control) (n = 5) were collected from healthy volunteers in the Digestive Diseases Area and they represented controls to illnesses related to the gastrointestinal tract and had not undergone antibiotic treatment in the 3 months before sampling. Active patients were defined as a Mayo Clinical score of 3 or more for ulcerative colitis (UC) and a Harvey Bradshaw clinical index of 4 or more for Crohn’s disease (CD). In both cases, calprotectin > 300 mg/g or relevant endoscopic lesions. Patients were classified according Montreal and ECCO criterias. This preliminary study is based in a group of CD-UC-CON where was analyzed 10 CD patients, 9 UC patients and 5 controls with 455 samples. Data from stool samples was obtained using eNose MOOSY32 [6].

**Results:** Figure 1 shows the scatter 3D plot with three voltage parameters for the group CD-UC-CON. These parameters mean the voltage from the eNose’s signals on saturation slope (vB) and late saturation (vE) and the number of sensor from the MOOSY32. Table 1 shows the comparative between relative error absolute and classification.

**Table 1:** Different algorithms test for matrix classification by WEKA software. Classification Relative absolute error

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Test</th>
<th>Relative absolute error</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLP Cross</td>
<td>10</td>
<td>92.0%</td>
</tr>
<tr>
<td>MLP</td>
<td>10</td>
<td>94.1%</td>
</tr>
<tr>
<td>BayesNet Cross</td>
<td>10</td>
<td>89.8%</td>
</tr>
<tr>
<td>BayesNet</td>
<td>10</td>
<td>86.0%</td>
</tr>
<tr>
<td>J48 Cross</td>
<td>10</td>
<td>89.6%</td>
</tr>
<tr>
<td>J48</td>
<td>10</td>
<td>89.7%</td>
</tr>
</tbody>
</table>

**Conclusion:** In this preliminary research to distinguish between Ulcerative Colitis and Crohn’s disease, the best algorithm for patient’s classification was the MLP with 30% to train and 70% to test. Although the high classifications result it is hopeful is necessary continue working to understanding how the eNose’s signals affect to the relative absolute error and improving the algorithms to decrease the error.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: In patients with inflammatory bowel diseases (IBDs), comprising Crohn’s disease (CD) and Ulcerative colitis (UC), a patient-tailored therapy is an unmet 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 models. In this prospective study we evaluated the potential of miR-320a as a biomarker to monitor the 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 (pMayo) for 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 vs. 17 ± 3; both p < 0.001) but distinctly lower as in CD/UC patients with acute flare (1718 ± 488; p = 0.006; 531 ± 107, p = 0.001). In CD patients with acute clinical flare (CDAI > 220), miR-320a expression level were significantly increased as compared to CD patients in clinical remission (CDAI < 15; 267.7 ± 637 vs. 57 ± 9; p < 0.001) and showed a strong correlation with endoscopic disease activity (r² = 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 ± 24 vs. 76 ± 13, all p < 0.001). Furthermore, we detected a significantly enhanced miR-320a expression with increasing endoscopic disease activity (eMayo 1: 89 ± 14 vs. eMayo 2: 301 ± 30, p = 0.006; vs. 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 followed the clinical and endoscopic 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

P1676 DOSE OPTIMISATION OF INFlixIMAB: COMPARATIVE STUDY OF A RAPID TEST AND AN ESTABLISHED ELISA METHOD

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Introduction: Infliximab (IFX) is a monoclonal antibody used for the treatment of inflammatory bowel disease (IBD) and is nowadays the drug of choice for refractory moderate to severe ulcerative colitis. Furthermore, IFX is the most used biological drug in the treatment of Crohn’s disease. However, the optimal IFX dosage is still unknown. In this study, we aimed to compare the accuracy of an established ELISA method with a newly developed rapid test and to determine the optimal IFX dose for patients with IBD.

Material and methods: Seventy patients with IBD, 47 CD and 23 UC, have been included in the study. The monitoring of serum IFX levels was done using the rapid test and an established ELISA method. Both tests were performed at a ratio of 1:1000 dilution. The rapid test has a sensitivity of 10 ng/ml and the ELISA has a sensitivity of 1 ng/ml. The optimal dose was determined based on a complete remission criteria (CD: CDAI ≤ 150; UC: Mayo ≤ 2).

Results: The rapid test showed 60 samples with a positive result, while the ELISA test showed 70. The optimal dose was calculated based on the results of the ELISA test, which showed that the optimal dose was 2 mg/kg dose for both CD and UC patients. The rapid test showed a sensitivity of 97.1% and a specificity of 85.7%.

Conclusion: The rapid test is a promising tool for the monitoring of IFX levels in IBD patients. It provides a quick and easy way to monitor the drug levels and determine the optimal dose. The results of this study suggest that the rapid test can be used as a reliable alternative to the established ELISA method for the monitoring of IFX levels in IBD patients.

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

References
Introduction: Aims & Methods:

Therapeutic drug monitoring (TDM) and a treat-to-target therapeutic approach may arise as a clinical strategy to optimise infliximab efficacy, safety and cost. The IFX levels measured by the point-of-care method were stratified according to a commonly accepted therapeutic range (3–51.4 g/ml) lower than 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”. This new assay is a really useful technique enabling the fast and friendly quantitative determination of IFX levels to ensure correct dosing in IBD.

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>N = 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± S.D.</td>
<td>45.6 ± 13.0</td>
</tr>
<tr>
<td>Male gender, n (%)</td>
<td>22 (47.8%)</td>
</tr>
<tr>
<td>Smokers, n (%) Never Current Ex</td>
<td>40 (87.0%)</td>
</tr>
<tr>
<td>Type of Disease, n (%)</td>
<td>Crohn’s Disease 33 (71.7%), Ulcerative Colitis 13 (28.3%)</td>
</tr>
<tr>
<td>Duration of disease, mean ± S.D.</td>
<td>12.4 ± 8.4</td>
</tr>
<tr>
<td>Localization of the disease, n (%)</td>
<td>Crohn’s Disease Ileal 10 (23.9%), Ileocolic Colic Upper gastrointestinal tract 1 Perianal 18 (43.5%)</td>
</tr>
<tr>
<td>Disease involvement Ulcerative Colitis Proctitis Left-sided Extensive 3 (9.1%), 2 (6.0%), 6 (18.2%), 0 (0.0%), 6 (46.2%), 7 (53.8%)</td>
<td></td>
</tr>
<tr>
<td>Behavior (Crohn’s Disease), n (%)</td>
<td>Inflammatory Strictureting 15 (45.5%), Fistulizing 14 (42.4%), Relapsing 4 (12.1%)</td>
</tr>
<tr>
<td>Previous resections (Crohn’s Disease), n (%)</td>
<td>17 (53.1%)</td>
</tr>
<tr>
<td>Disease Activity Crohn’s Disease Harvey-Bradshaw Index (HBI), mean ± S.D. Ulcerative Colitis Mayo Partial score, mean ± S.D. C-Reactive Protein, mean ± S.D.</td>
<td>7.7 ± 3.6, 4.1 ± 1.6, 16.6 ± 25.6</td>
</tr>
<tr>
<td>Endoscopy within six months of combination therapy initiation (n = 26) Crohn’s Disease SES-CD, mean ± S.D. Rutgeerts score, 0/1/2/3 Ulcerative Colitis Mayo Endoscopic score, 0/1/2/3</td>
<td>9.9 ± 5.8, 4.0/3.6</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Concurrent prednisone at baseline, n (%)</td>
<td>20 (43.5%)</td>
</tr>
<tr>
<td>Line of anti-TNFα therapy, n (%) First Second Third</td>
<td>10 (21.7%), 34 (73.9%), 2 (4.4%)</td>
</tr>
<tr>
<td>Experienced to the IM used in combination therapy, n (%)</td>
<td>13 (28.3%)</td>
</tr>
<tr>
<td>Time between start of anti-TNFα therapy and addition of IM (months), median (I.Q.I.)</td>
<td>7 (13.5)</td>
</tr>
<tr>
<td>Combination therapy, n (%) IFX + AZA IFX + 6-MP IFX + MTX IFX + MMF TOTAL IV ADA + AZA ADA + MTX GOL + AZA GOL + MMF TOTAL SC</td>
<td>11/46 (23.9%), 5/46 (10.9%), 12/46 (26.1%), 3/46 (6.5%), 31/46 (67.4%), 2/46 (4.3%), 8/46 (17.4%), 2/46 (4.3%), 3/46 (6.5%), 15/46 (32.6%)</td>
</tr>
</tbody>
</table>

Conclusion: In patients with IBD the addition of an immunosuppressant is an effective and safe optimization strategy after loss of response to anti-TNF alpha monotherapy. Low doses of IM are sufficient to achieve a clinical response in this setting.

Disclosure of Interest: F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals. S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. M. Cottone: Received financial support for the organization of a second level Master degree in inflammatory bowel disease from AbbVie, MSD, Takeda Pharmaceuticals and Sofar. A. Orlando: Advisory board member for AbbVie, MSD, Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Sofar, Chiesi. All other authors have declared no conflicts of interest.

P1680 CORRELATION BETWEEN EXTRA-INTESTINAL MANIFESTATIONS AND ANTI-DRUG ANTIBODIES DEVELOPMENT IN CROHN’S DISEASE PATIENTS

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Introduction: Extra-Intestinal Manifestations (EIM) are frequently (up to 40%) encountered in patients with Crohn’s Disease (CD). Commonly, their presence is associated to a more severe degree of laminar disease and lower response to conventional therapy (i.e. immunosuppressants). Drug trough levels are associated with biological drug response, while the role of Anti-drug 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, 65%, IFX n 21, 35%) 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%) patients and their development 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.

P1681 THE PRESENCE OF IRRITABLE BOWEL SYNDROME-TYPE SYMPTOMS IN MICROSCOPIC COLITIS IS ASSOCIATED WITH INCREASED PSYCHOLOGICAL COMORBIDITY AND IMPAIRED QUALITY OF LIFE

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Introduction: Patients with microscopic colitis (MC) often present with abdominal pain and diarrhoea, and small cross-sectional surveys suggest that up to one-third may meet diagnostic criteria for irritable bowel syndrome (IBS). However, the impact of IBS-type symptoms in patients with MC, in terms of their effect on psychological health and quality of life has not been assessed.

Aims & Methods: We conducted a cross-sectional survey of individuals with MC. We analysed demographic data, symptoms that met the Rome III criteria for IBS and these individuals reported higher levels of anxiety, depression, and somatoform-type behaviour (via patient health questionnaire-15 (PHQ-15)), and quality of life (QOL) (via SF-36) in order to examine risk factors for, and impact of, IBS-type symptoms in patients with MC.

Results: In total, 157 individuals with MC returned completed questionnaires, 53 (36.6%) of whom met the Rome III diagnostic criteria for IBS. The commonest clinical subtype of MC was collagenous colitis (52.9%, n = 83), followed by lymphocytic colitis (38.2%, n = 60), and MC-not otherwise specified (8.9%, n = 14). Individuals meeting the Rome III criteria for IBS had significantly higher levels of anxiety (HADS-anxiety score 8.6 vs. 5.0, P < 0.001), depression (HADS-depression score 6.1 vs. 3.5, P = 0.001), and somatoform-type behaviour (PHQ-15 score 12.5 vs. 7.9, P < 0.001) compared with individuals who did not. Individuals meeting the Rome III criteria scored significantly worse on all domains of the SF-36, except for physical functioning. There were also trends towards these individuals being younger (65 years vs. 69.2 years, P = 0.011) or taking proton-pump inhibitors (58.5%, n = 55.5) vs. 60), and MC-not otherwise specified (8.9%, P = 0.062).

Conclusion: More than one-third of individuals with MC met diagnostic criteria for IBS and these individuals reported higher levels of anxiety, depression, and somatoformisation plus impaired quality of life. Management strategies for these symptoms are required.

Disclosure of Interest: J.S. Kane: This work was supported by an investigator-initiated grant from Dr. Falk Pharma UK Ltd. A.C. Ford: This work was supported by an investigator-initiated grant from Falk Pharma UK Ltd. All other authors have declared no conflicts of interest.

References
P1683 TRough LEVELS AND Antibodies To Ustekinumab: ARE They Correlating With Clinical RESPONSE In CD PATieNTs

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Introduction: Ustekinumab (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 remission to induction and 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 anti-ustekinumab antibodies, with the response and remission to induction and maintenance UST treatment in CD patients.

Results: Forty-eight patients with active disease received at least three UST injections who were prospectively enrolled. At time of ustekinumab introduction 77% of patients received concomitant immunomodulators 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.

References

P1684 EconOMIC IMPLICATIONS In INFLAMMATORY BOWEL DiseASES: RESULTS FROM A RETROSPECTIVE ANALYSIS IN AN ITALIAN CENTRE

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Introduction: Inflammatory bowel diseases (IBDs) are chronic conditions characterized by elevated costs (both direct and indirect). Over the last years also a significative healthcare burden associated with IBD has emerged, due to an increasing use of biological therapies and hospitalization costs. Despite the creation of local or regional databases in Italy data regarding healthcare expenditure are lacking.

Aims & Methods: The aim of this study was to evaluate costs comprehensive of biological treatments and hospitalizations in a series of patients with ulcerative colitis (UC) and Crohn’s disease (CD) and their correlation with demographic and clinical variables. Disease severity was evaluated by clinical scores (partial Mayo score for UC, Harvey Bradshaw Index for CD). We analyzed retrospectively treated patients by biologics referred to our IBD Unit between May 2015 and April 2016 who underwent at least six months follow-up (last visit October 2016). As regards biological therapies costs burdened by our Centre pharmacy for each drug (Infliximab, Adalimumab, Golimumab, vedolizumab) and for single patient were evaluated. About hospitalizations the average costs of expenditure for month of treatment was 1235.41 €.

Results: We collected clinical-econometric data of 142 patients in biological treatment with ustekinumab (UST) and their costs for month of treatment were 337.36 €. All authors have declared no conflicts of interest.

Results: Forty-eight patients with active disease received at least three UST injections who were prospectively enrolled. At time of ustekinumab introduction 77% of patients received concomitant immunomodulators 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.

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P1685 THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD): PRELIMINARY DATA ON EFFICACY OF BIOLOGICAL THERAPY

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 of a super Hub coordinator centre and five Hub plus four spoken centres. From January 2013, all IBD patients starting a biological agent (incident cases) or already on treatment (prevalent 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 end-point, we set remission (corresponding to a Mayo Partial Score (MPS) <2 for UC, and to a Harvey-Bradshaw Index <5 for CD), and response (reduction in Harv-Bradshaw Index ≥3 for CD and Mayo Partial Score ≥2 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]). In 8% of patients, we set the diagnosis of a 22.2% of patients experienced more than one line of therapy, a total of 1407 treatments were reported. CD: there was a higher proportion of patients naïve to biologicals (incident cases) or already on treatment (prevalent cases) were in CD compared with baseline).

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 drug 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.

Disclosure of Interest: A. Orlando: Advisory board member for AbbVie, MSD, Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Sofar, Chiesi. F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals

All other authors have declared no conflicts of interest.

P1686 SINGLE-CENTRE EXPERIENCE WITH BIOLOGICAL TREATMENT IN BUESDONEFACATORY MICROSCOPIC COLITIS PATIENTS
N. Daferera1, S. Ignatova2, A. Münch2

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 intravenous 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 < or equal to 3 and no 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.

Conclusion: In our single-centre experience with biological treatment in budesonide refractory MC patients, the use of a third anti-TNF agent (certolizumab) showed benefit in selected patients. In the cases that failed anti-TNF, further treatment with vedolizumab (1000 mg twice) was effective in all patients tested. Further treatment with rituximab (1000 mg twice) and ustekinumab (300 mg) 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 DIFFERENT INTESTINAL DISORDERS

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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 and IBD who had been experiencing abdominal symptoms without signs of active infection. Each subject was put on a low FODMAP 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 and 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 < 0.0001). 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 INTESTINAL BOWEL DISEASE (SIN-IBD)


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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 (SIN-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 dosages 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 37 (22.7%). Out of 71 patients reaching 24 weeks of follow-up, 29 (40.8%) were in steroid-free remission, and 10 (14.1%) had a clinical response. No significant difference in terms of clinical benefit (rate of remission plus clinical response) among patients with UC and CD was reported at week 10 (68.4% vs. 64.3%, respectively; p = 0.58) and at week 24 (54.3% vs. 55.6%, respectively; p = 0.91), and no difference was observed comparing naïve and non naïve patients, neither at week 10 (61.5% vs. 67.7%, respectively; p = 0.48) nor at week 24 (30.0% vs. 39.9%, respectively; p = 0.11). At multiple logistic regression analysis, a longer duration of disease (OR 0.961, 95% CI: 0.931-0.991, p = 0.033) was a predictor of reduced rates of clinical benefit at week 24, while a low serum level of C-reactive protein at baseline (OR 0.950, p = 0.031) was predictor of clinical benefit at week 24. An improvement of articular symptoms was reported in 39.5% of patients with active spondyloarthritis at baseline at week 10, and in 45.4% of patients at week 24. The only factor associated with articular response was the coexistence of clinical benefit on intestinal symptoms, both at week 10 (OR 8.471, p = 0.05) and week 24 (OR 5.600; p = 0.08). Three inductions or flares of spondyloarthritids during treatment with VDZ were reported.

Table 1
P1689 POSITIVE PHARMACOKINETIC EFFECT OF 60 FULLERENES ATTENUATE THE INTENSITY OF COLON DAMAGE AND EXTRAINTESTINAL MANIFESTATIONS ON RAT ACUTE ULCERATIVE COLITIS MODEL

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Introduction: The primary drugs used for 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 scale, respectively, and the grade of total injury (GTI) was calculated. Permeability of colon epithelium was estimated by phenol red dye excretion exceeded the control one 6.6 times suggesting the damage of colon epithelial barrier. Degenerative features of exocrine pancreas and liver injury were also observed in UC rats. Anemia features manifested by hemoglobin concentration and red blood cell count decreased, reticulocytes volume, hematocrit and the platelet count increase could be caused by intestinal hemorrhages and subsequent erythro- and megakaryocytes release following active release of "young" erythrocytes (reticulocytes) and platelets into the blood. The last could be confirmed with histological assay (rise of the erythroblastic islands and megakaryocytes numbers in the spleen). Increase the number of neutrophils and spleen lymphatic follicles suggested the inflammatory process in the organism. The application of C60FAS by both ways caused GTI drop down to 6 points, whereas its rectal application normalized both ALT and AST activities but didn’t affect the pancreas. Moreover, C60FAS rectally increased monocyes number, which could be explained by involving the latest in mucosa healing process.

Conclusion: C60FAS corrects local and systemic morphofunctional changes, conditioned by the induction of acute UC. The protective properties of C60 fullerene against bowel, hematopoietic system and liver due to its local application are more expressed compared to their systemic one, but their impact on pancreas is controversial. Thus, water-soluble pristine C60 fullerene could be used as efficient therapeutic agents at ulcerative colitis.

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

References

P1690 EARLY CLINICAL REMISSION BY WEEK 2 PREDICTS GOOD SHORT- AND LONG-TERM EFFICACY OF TACROLIMUS THERAPY IN PATIENTS WITH MODERATE TO SEVERE STEROID-REFRACTORY UCERATIVE COLITIS

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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 evaluating the short-term efficacy, the remission rate at 2 weeks was significantly associated with CAI at 12 weeks. Interestingly, of the 22 patients in clinical remission within 2 weeks, 21 (95.5%) remained in remission at 12 weeks. In contrast, only 6 of 14 (42.9%) who did not achieve clinical remission at 2 weeks were not in clinical remission at 12 weeks. For evaluating the long-term efficacy of tacrolimus induction therapy, relapse-free periods were assessed using the Kaplan-Meier method. The relapse-free rate at 48 weeks was higher in patients who achieved clinical remission within 2 weeks compared to those without remission at that time point (79.0% vs. 60.0%).

Conclusion: Tacrolimus induction therapy was effective for patients with moderate to severe steroid-refractory UC. Our results clearly indicate that clinical remission at week 2 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.

References
PI602 INFLIXIMAB (IFX) IN MODERATE TO SEVERE ULCERATIVE COLITIS (UC): COMPARISON BETWEEN SCHEDULED TREATMENT STRATEGY AND BRIDGE STRATEGY
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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. However, historical difficulties of economic access in BDAD and IFX toxicity in BDAD had conditioned to our IBD center, to use IFX in moderate to severe UC as a bridge to thiopurines in pts 6 mp/aza naïve. In UC, the mentioned strategy was insufficiently compared with a regimen of scheduled IFX treatment, that currently we use.

Aims & Methods: Suffering from arthropathies 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 driver for health care professionals about interventional strategies including cognitive behavioural therapy (CBT) or physical exercise.

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

PI604 INFLIXIMAB BIOSIMILAR CT-P13 THERAPY IS EFFECTIVE IN MAINTAINING ENDOSCOPIC REMISSION IN ULTERATIVE COLITIS—RESULTS FROM MULTICENTRE OBSERVATIONAL COHORT
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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. Sigmodoscopy 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 drug cell adhesion markers at the time of treatment and during 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 = 0.03). Complete mucosal healing was patient in 24.3% at week 14, but in 61% at week 54. The median values of CRP (p = 0.017), leukocytes (p < 0.001), thrombocytes (p = 0.01) 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 4.4 μg/ml at week 14 and 54. Serum antibody positivity was assessed in 77% and 26.2% of cases 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: CT-P13 is better option for the third of the patients during CT-P13 maintenance therapy. Our study confirmed the long-term efficacy of CT-P13 therapy on mucosal healing in UC.

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

PI603 ILLNESS PERCEPTIONS, COPING STRATEGIES, OUTCOMES AND THEIR CHANGES OVER TIME IN IBD PATIENTS WITH ARTHROPATHIES: A 12-MONTH FOLLOW-UP STUDY
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Introduction: EIM (Erosive inflammatory bowel disease) provides an opportunity to study the most common extra-intestinal manifestation (EIM) in patients with inflammatory bowel disease (IBD). Psychological and behavioural factors, including illness perceptions and coping strategies, perceived by IBD patients with arthropathies may differ from patients without arthropathies and may change during follow-up. Understanding these differences and changes over time, creates knowledge for health care professionals about interventions that may be effective in IBD patients with arthropathies.

Aims & Methods: This longitudinal follow-up study evaluates the differences in illness perceptions (emotional cognitions and emotions about a disease), coping strategies (behavioural efforts and strategies to deal with a chronic disease) and illness outcomes between IBD patients with and without arthropathies, and examines the changes of these variables in IBD patients with arthropathies after 12 months.

In total, 204 IBD patients with n = 123 and without (n = 81) arthropathies completed questionnaires at baseline and after 1 year follow-up to assess illness perceptions (Revised Illness Perception Questionnaire), coping strategies (Coping with Rheumatic Stressors Questionnaire) and illness outcomes including quality of life (Short Form-36), and activity and work impairment (Work Productivity Activity Index). Linear regression analyses were used to assess the impact of arthropathies on illness perceptions, coping and illness outcomes compared with IBD patients without arthropathies. Mixed model analyses were used to evaluate the change of these variables in IBD patients with arthropathies over time.

Results: Linear regression models demonstrated that arthropathies in IBD were associated with the illness perceptions strong ‘illness identity’ (β 1.15 (95%CI 0.31-1.96), p = 0.007), strong ‘cyclical timeline’ (β 1.33 (95%CI 0.33-2.34), p = 0.024) and more ‘consequentiality’ (β 2.00 (95%CI 0.60-3.42), p = 0.006), stronger ‘emotional representations’ (β 1.58 (95%CI 0.08-3.08, p = 0.039) and a low ‘coherence’ (β −1.29 (95%CI −2.45-(-0.14)), p = 0.029). In addition, the coping strategies increased ‘diverting attention’ (β 1.54 (95%CI 0.26-2.66), p = 0.047) and increased ‘consideration’ (β 0.18 (95%CI 0.10-2.27, p = 0.033), as well as the illness outcomes low physical (β −7.22 (95%CI −9.68-(-4.77), p < 0.001) and mental (β −3.10 (95%CI −5.39-(-0.23)), p = 0.035) health and increased activity impairment (0.15 (95%CI 0.07-0.23), p < 0.001) were related with IBD with arthropathies. Two months follow-up, lower scores on the illness perception dimension ‘treatment control’ (p = 0.001) and increased scores on the coping strategy ‘pacing’ (p = 0.03) were found in IBD patients with arthropathies compared with baseline scores.

Conclusion: Suffering from arthropathies 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 driver for health care professionals about interventional strategies including cognitive behavioural therapy (CBT) or physical exercise.

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

PI605 THE USE OF ANTI-TNFs IN INDUCING CLINICAL RESPONSE AND REMISSION IN ULCERATIVE COLITIS: A COMPARATIVE ANALYSIS IN THE REAL-LIFE EXPERIENCE OF A SINGLE REFERRAL CENTER
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Introduction: Anti-tumor necrosis factor (anti-TNF) agents, infliximab (IFX) and more recently adalimumab (ADA) and golimum (GOL), have been shown effective and safe in the treatment of moderate-to-severe ulcerative colitis
Aims & Methods: Our aim was to compare efficacy of IFX, ADA and GOL in inducing clinical response and remission in a prospective cohort of patients with moderate to severe UC. From June 2015 to October 2016, 61 consecutive UC patients were treated with anti-TNFs: 19 with IFX, 25 with ADA and 17 with GOL. Disease activity was assessed by Mayo Score. Clinical response and/or remission were evaluated at week 8 and at week 16. We also recorded: indications to biologic therapy, previous immunom suppressive or anti-TNF therapy and rate of anti-TNF discontinuation.

Results: Among the 61 patients, 36 were males; mean age was 43.6 ± 15; no significant difference was present in baseline characteristics (extent and disease activity); 39 patients were thiopurine failure; 38 were naïve to anti-TNFs, most were treated with IFX (p = 0.001). ADA and GOL were more often used as a second-line or third-line. The principal indication for steroid resistance patients was IFX. No significant difference was observed between IFX and ADA both at week 8 (response: IFX vs ADA p = 0.08; remission p = 0.28; at week 16 (response p = 0.5; remission p = 0.97), though there was a trend towards a higher rate of response at week 8 with IFX (79% vs 64%). IFX and ADA were more effective than GOL at week 8 (response: IFX vs GOL 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 due to 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. IFX is preferred in steroid-resistant patients to get a faster response, ADA and GOL should be the first option 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% Confidence Interval (CI)</th>
</tr>
</thead>
<tbody>
<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>Arthritis</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>
<tr>
<td>Other skin and subcutaneous-related</td>
<td>900</td>
<td>3.7</td>
<td>1.6–8.0</td>
</tr>
<tr>
<td>Nausea</td>
<td>623</td>
<td>3.2</td>
<td>1.2–8.5</td>
</tr>
<tr>
<td>Paresthesia</td>
<td>526</td>
<td>2.9</td>
<td>1.0–7.9</td>
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<tr>
<td>Respiratory, thoracic and mediastinal-related</td>
<td>70</td>
<td>2.9</td>
<td>0.7–10.7</td>
</tr>
<tr>
<td>Headache</td>
<td>146</td>
<td>2.1</td>
<td>0.7–6.3</td>
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<tr>
<td>Liver-related</td>
<td>468</td>
<td>2.0</td>
<td>0.1–23.9</td>
</tr>
<tr>
<td>Memory impairment</td>
<td>136</td>
<td>2.0</td>
<td>0.4–10.2</td>
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<tr>
<td>Other musculoskeletal and connective tissue-related</td>
<td>499</td>
<td>2.0</td>
<td>0.3–12.5</td>
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<tr>
<td>Infections</td>
<td>660</td>
<td>6.0</td>
<td>3.2–10.8</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 transaminases), 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).

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 infection-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), indicating the selection of complex patients failing previous immunosuppressive or biologic therapies. Limitations of incidental reporting in real-world studies include potential underestimation 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: 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 AbbVie, Janssen, UCB, Takeda, Immune Pharmaceuticals, Celgene, MedImmune, Theradex, Genentech, Seres Health, Sun Pharmaceuticals, Bristol-Myers Squibb. S. Schreiber: Has received consulting fees from Ferring, Falk Pharma, Mundipharma, Hospira, Sandoz, Otsuka, Abbvie, Janssen, Takeda, MSD, Vifor, and Pharmacosmos. L. Peyrin-Biroulet: Received consulting fees from Merck, 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

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INFLAMMATORY BOWEL DISEASE: A META-ANALYSIS


Introduction: Vedolizumab (VDZ), a gut-selective monoclonal anti-α4β7-integrin antibody, is used for treatment of Crohn’s disease (CD) and ulcerative colitis (UC). Data from large real-world cohorts can further characterise safety events not fully elucidated in a clinical trial setting, such as the risk of serious infections, as identified with anti-tumour necrosis factor-alpha (TNFα) therapy in the THAMAS [1] and ENACT-2 [2] registries.

Aims & Methods: We conducted a systematic review and meta-analysis of real-world safety outcomes reported for VDZ in UC and CD. MEDLINE-, Cochrane-, and EMBASE-indexed publications and conference abstracts (n ≥ 10) from May 1, 2014–January 10, 2017 were searched for studies reporting real-world VDZ safety outcomes. Reports for patients < 18 years of age or for off-label VDZ use were excluded. A meta-analysis was conducted using the DerSimonian-Laird random effects method to obtain a weighted mean of adverse event (AE) rates.

Results: Two hundred and eighty published studies were identified, with 33 reporting safety rates on 2857 VDZ-treated patients (CD: 1532; UC: 829; unspecified/other: 36, three studies [n=460] did not report individual UC/CD data) over a VDZ exposure/follow-up period ranging 0.5–18 months (20 studies). Among included studies, the mean age of patients ranged from 21 to 67 years, with mean disease duration ranging from 7 to 16 years. Most VDZ-treated patients (62–100%) had prior exposure to ≥1 anti-TNFα therapy and 6–64% of VDZ-treated patients were receiving concomitant corticosteroids and immunomodulators. The most common non-infectious AEs were acne or acne-like lesions (7%; 95% confidence interval [CI] 3–11%), fatigue (6%; 95% CI 3–15%) and arthralgia (5%; 95% CI 3–10%) (Table 1). The most common infections were upper respiratory tract infections (6%; 95% CI 3–11%) and sinusitis (4%; 95% CI 1–19%) (Table 1). Infection-related reactions occurred in 2% (95% CI <1–4%) of patients (n = 811), and malignancies were reported in <1% of patients (<1–4%; 2 studies). Overall, the pooled AE rate reported in VDZ-treated patients was 21% (95% CI 14–32%); 10% (95% CI 6–16%) for infections, 8% (95% CI 6–10%) for serious AEs and 7% (95% CI 3–13%) for serious infections (Table 1).

*Includes paradoxical skin manifestations, acute generalised exanthematous pustulosis, dry skin, erythema nodosum, palmar erythema. *Includes spontaneous nausea. *Includes liver test abnormalities (transient transaminases), drug-induced liver injury (not specified).
P1687 COST-UTILITY ANALYSES OF BIOLOGICS FOR REFRACTORY ULCERATIVE COLITIS

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Introduction: Although many biologics (Bs) have been approved for the treatment of refractory-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 adequate to inform patients.

Aims & Methods: The objective is to evaluate cost-utility of Bs for the treatment of refractory-to-severe UC both in Italy and in the Lombardy region. A Markov model (considering 3 transition states: remission, clinical response, response lost) was used to evaluate the incremental cost-utility ratio (ICUR) of adalimumab (ADA), infliximab (IFX), vedolizumab (VED) and golimumab (GOL) in ulcerative colitis 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 (actualized 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 a 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: €68,314, –40.2%); IFX (N: €113,595, R: €103,081, –23%); IFX-B (N: €110,435, 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, 6.70, 7.02. From a N perspective, IFX-B was dominating compared to all other treatments. The ICUR of VED/IFX-B was €408,483 for 10 years of treatment (willingness to pay €408/QALY). From a R perspective, ADA was dominating compared to all other treatments. The ICUR of VED/ADA was €101,818 for 10 years (WTP €101,818/QALY).

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.

P1689 EVALUATION OF ADHERENCE TO INFlixIMAB THERAPY IN IBD PATIENTS

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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 treatment of IBD 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 percent 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 (18.7%), every 6 weeks (5.5%), every 12 weeks (5.4%) or every 4 weeks (2%). The mean duration of the courses was 23 months (range: 6–103). Only 69 out of 1714 infusions (4%), were not properly administered. The reported causes for that included: 36 “unknown” (52%), 18 “change requested by patient” (26%), 14 “due to logistic reasons” (21%) and 4 “other” (5%). In 107 courses (73%) all 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 INFlixIMAB TREATMENT IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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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 whether 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-Bradshaw-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 identified by receiver operating characteristic analysis, high TNF-producers were defined as positive and low TNF-producers as negative. 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 ≥3 (partial Mayo Score). A HBI <1 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. There was no difference in the number of prior TNF-alpha inhibitors between CS users and non-CS users. However, remission rates were significantly higher in high producers compared to low producers (high: 90% vs. low: 30% p = 0.04). Secondary endpoints showed no significant difference in the two groups. 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.

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B. Siemund: Britta Siemund 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.

P1701 EVALUATION OF CONCOMITANT CORTICOSTEROID AND VEDOLIZUMAB USE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD) IN REAL-LIFE CLINICAL PRACTICE

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Introduction: Corticosteroids (CS) are often used concomitantly with biologics in treatment of inflammatory bowel disease (IBD). However, their side-effect profile causes significant clinical and economic burden in long-term treatment. In this study, we investigated the impact of concomitant CS use on vedolizumab treatment persistence in patients with Crohn’s disease (CD) and ulcerative colitis (UC).

Aims & Methods: This was a nationwide (Finland), retrospective, non-interventional, multi-center chart review. From 27 centers, we included adult (≥18 years of age) IBD patients who received at least one vedolizumab infusion since 2014. Data were extracted from patients’ electronic medical records charts in a standardized case report form. The key data collection points were at baseline, week 14 and month 6 of vedolizumab treatment. The main aim of the study was to analyze vedolizumab treatment persistence among IBD patients using CS in real-world clinical setting.

Results: 247 patients (CD 108, UC 139) were included. At baseline, 47 (43.5%) CD and 84 (60.4%) UC patients were using CS. Higher percentage of patients using CS at baseline discontinued vedolizumab during the 6-month follow-up compared to CS non-users (CD, 14/47 (29.8%) vs. 13/61 (21.3%); UC, 31/84 (37.3%) vs. 16/55 (29.1%). CS users had less vedolizumab discontinuations due to primary inefficacy (p = 0.04) and more discontinuations due to adverse events (p = 0.04), than CS non-users. Over half of the patients on CS at baseline and who persisted on vedolizumab were able to discontinue CS before 6 months (CD: 18/33 (54.5%); UC, 37/53 (69.8%). Among CD patients, CS users had higher baseline disease activity than non-users. Such difference was not observed in UC. CS users had shorter disease duration in both CD and UC. There was no difference in the number of prior TNF-alpha inhibitors between CS users and non-CS users.

Conclusion: Use of CS at the time of initiating vedolizumab treatment was more common in UC than in CD. Vodelizumab treatment persistence was lower in CS users than in non-users in both CD and UC. The data suggests that CS users have less vedolizumab discontinuations due to primary inefficacy and more discontinuations due to adverse events, than CS non-users. The majority of patients on CS at baseline who persisted on vedolizumab were steroid-free by 6 months, potentially relieving the burden of CS-induced side-effects for both patients and society.

Disclosure of Interest: T. Yliusaakko-Oja: TY is owner of MedEngine Oy and consultant for Takeda Oy. J. Aaltonen: JA is employee of Takeda Oy. S. Torvinen: ST is employee of Takeda Oy. J. Jokelainen: JJ is employee of MedEngine Oy. S. Herrala: SH is employee of MedEngine Oy. K. Tamminen: KT is employee of Takeda Oy. All other authors have declared no conflicts of interest.
results of the context of ~77.382 patient-years of VDZ exposure and a total of 36 VDZ-treated patients (events = 13 serious, non-serious) occurred in 15 patients with pre-existing viral hepatitis B (n = 5, including 2 chronic cases) or hepatitis C (n = 10). Of the 15 patients, six had ulcerative colitis, seven had Crohn’s disease, and in two the indication was not specified (NR). Eight patients received prior/concomitant anti-TNFa therapy (anti-TNFa; NR = 2. Events were reflective of the general VDZ safety profile in patients without viral hepatitis. Liver-related events were reported in two patients with hepatitis C—one patient who was a smoker reported hepatic neoplasms; the other 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 resolving at the time of reporting and 4/26 (15.4%) were unresolved; NR = 2. VDZ treatment was continued in 10/14 (71.4%) patients and discontinued in 4/14 (28.6%); NR = 1.

Conclusion: In the post-marketing setting, there was no evidence of increased risk of viral reactivation in patients with hepatitis B or hepatitis C receiving VDZ. Limitations (associated with post-marketing safety reporting, nature of reporting and incomplete patient medical history) and currently limited availability of VDZ in regions with endemic hepatitis B and hepatitis C infection should be considered when interpreting these results.

Disclosure of Interest: I.N. Hlimi: No conflict of interest
S. Adsul: Employee of Takeda Pharmaceuticals (Asia Pacific)
A. Blake: Employee of Takeda Development Center Europe Ltd
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References

P1707 AMINOSALICYLATES FOR MAINTENANCE THERAPY IN ULCERATIVE COLITIS: IS THE ADHERENCE REALLY IMPORTANT?
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Introduction: The goal of maintenance therapy in Ulcerative Colitis (UC) is to keep clinical and endoscopic steroid-free remission. 5-aminosalicylate (5-ASA) represents the first line maintenance therapy. Non-adherence to 5-ASA is associated with an increased risk of disease relapse, colorectal cancer and worsening of quality of life1. Adherence rate has been analysed in several studies with controversial results2-4.

Aims & Methods: The aim of this study is to quantify the prevalence of adherence to 5-ASA, to identify risk factors to non-adherence and its correlation with the clinical outcome. Observational analysis, retrospective, single tertiary centre, cohort study of all UC patients followed-up in our IBD unit, until January 2016, with 5-ASA maintenance treatment prescribed by an electronic management program. Adherence was considered when 80% of the prescribed 5-ASA was dispense at pharmacy in the one year (2016), assuming that dispensed 5-ASA is equivalent to medication intake. The study analysed, according to the existence and degree of 5-ASA adherence, UC phenotypic expression (age, sex, smoking habit, Montreal classification, extraintestinal manifestations, complications), disease course (moderate-severe relapse rate that require corticosteroid therapy), 5-ASA properties (dose, administration regime, formulation), consumption of other UC and non-UC chronic drugs. A multivariable logistic regression model was applied to discriminate the adherent patients including the risk factors of the univariate analysis. A Spearman’s rank coefficient analysis was performed to correlate percentage of adherence with relapse rate.

Results: The study cohort included 433 patients, 55% males with a median age at the first 5-ASA prescription analysed of 49 years (IQR 39-61). 17% had a proctitis, 31% a left-side colitis and 52% an extended disease. 30% of patients suffered from extraintestinal manifestations and 8 from a complication. The mean dose of 5-ASA taken was 2.6 g/day (range 0.7-4.8) distributed in a daily dosage of 14 of the patients. Adherence prevalence to 5-ASA was 63%. Adherent group had a higher median age (52 (±11) vs 43 (±13), p = 0.001) and received more non-UC chronic drugs (OR = 2.3, 95CI = 1.5-3.4, p = 0.001). The independent variables, age and intake of other non-UC drugs, included in the multivariate analysis reached a predictive capacity of 65% outcomes of adherence. There was no significant reduction in the risk of moderate-severe flares that required corticosteroid therapy when comparing both adherent and non-adherent groups and rank correlation showed no relationship between adherence to 5-ASA and relapse rate (t = 0.12, p = 0.29). Patients treated with adjuvant maintenance therapy (bithery with thiopurines or anti-TNF or triple therapy with both) presented a significant reduction of flares (OR = 0.6, 95CI = 0.7-0.9, p = 0.019).

Conclusion: Adherence to 5-ASA in our population is low. Older patients that take other non-UC chronic treatments show higher adherence. With a one year prescribed and dispensed analysis, non-adherence to 5-ASA is not related with a higher risk of flares that require corticosteroid therapy. Patients treated with adjuvant maintenance therapy, show better results throughout the course of the disease.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P1706 DEVELOPMENT AND FEASIBILITY OF A WEB-BASED REGISTRY FOR MULTICENTRE SURVEILLANCE OF EFFECTIVENESS AND SAFETY OF NOVEL IBD-DRUGS IN THE NETHERLANDS**

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**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. Aim & Methods: Here, 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 reporting, the baseline characteristics of the first cases were assessed. The characteristics were compared to baseline characteristics of subjects in the vedolizumab registration studies.

**Results:** A total of 230 IBD (4 IBD-U) patients starting vedolizumab were included. All users found the ICC-case series easy to use and received the reminder mails for follow-up visits. Baseline characteristics were successfully extracted and are reported in table 1.

**Table 1:** Baseline characteristics of ICC cohort and GEMINI trials

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ICC cohort CD (N=146)</th>
<th>GEMINI cohort CD (N=1115)</th>
<th>ICC cohort UC (N=80)</th>
<th>GEMINI cohort UC (N=805)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>39 ± 13.7</td>
<td>36 ± 12.1 (43.7 ± 16.5)</td>
<td>40.3 ± 13.1</td>
<td></td>
</tr>
<tr>
<td>Male, no. (%)</td>
<td>520 (46.6)</td>
<td>50 (62.5)</td>
<td>525 (66)</td>
<td></td>
</tr>
<tr>
<td>Current smoker, no. (%)</td>
<td>38 (25.9)</td>
<td>206 (26.7)</td>
<td>11 (13)</td>
<td>55 (6.1)</td>
</tr>
<tr>
<td>Disease duration-yr</td>
<td>13.6 ± 12.5</td>
<td>9.0 ± 7.8</td>
<td>8.6 ± 7.6</td>
<td>6.9 ± 6.4</td>
</tr>
<tr>
<td>Median CRP - mg/l (IQR)</td>
<td>7 (4-20)</td>
<td>11.5</td>
<td>6 (2-15)</td>
<td>-</td>
</tr>
<tr>
<td>Median fecal calprotectin - ug/g (IQR)</td>
<td>881 (287-1800)</td>
<td>686.0</td>
<td>1551 (441-2519)</td>
<td>899 (441-2127)</td>
</tr>
<tr>
<td>Disease location CD, no. (%)</td>
<td>31 (21.2)</td>
<td>181 (16.2)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**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 underlining the importance of country specific post-marketing data.

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

**References**


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**P1707 SIX-YEAR EFFICACY AND SAFETY OF AZATHIOPRINE TREATMENT IN THE MAINTENANCE OF STEROID-FREE REMISSION IN INFLAMMATORY BOWEL DISEASE PATIENTS**

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**Introduction:** Azathioprine (AZA) and thiopurines 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.
P1708 CLINICAL Efficacy and SAFETY OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE IN THE ELDERLY: A UK TERTIARY REFERAL CENTRE EXPERIENCE

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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 ≥60 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 immunogeneity 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

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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 leucapharesis; 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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<table>
<thead>
<tr>
<th>&lt;60 years</th>
<th>≥60 years</th>
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<tbody>
<tr>
<td>Total n= 58</td>
<td>n= 29</td>
</tr>
<tr>
<td>Week 14 steroid free remission (HBI &lt;5, SCCAI &lt;3) 28/41 (68.3%)</td>
<td>8/16 (50%)</td>
</tr>
<tr>
<td>Week 54 steroid free remission (HBI &lt;5, SCCAI &lt;3) 24/40 (60%)</td>
<td>8/15 (53.3%)</td>
</tr>
<tr>
<td>Remain on anti-TNF at week 54 46/58 (79.3%)</td>
<td>23/28 (82.1%)</td>
</tr>
<tr>
<td>Reasons for stopping anti-TNF before week 54 7 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction</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) 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 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 (skin 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) Range: 3–73 Median: 12</td>
<td>Range: 3–63 Median: 18</td>
</tr>
<tr>
<td>Anti-drug antibodies detectable during follow up 3/38 (5.2%)–3 infliximab weeks 14, 34 and 76 no concomitant 1 subtherapeutic TGNs 1 prior exposure to infliximab</td>
<td>4/29 (13.8%) –3 infliximab, 1 adalimumab weeks 14, 48, 52 and 54 concomitant with therapeutic TGNs 2 no concomitant 3 prior exposure to TNF</td>
</tr>
<tr>
<td>Adverse events throughout follow up 1 new diagnosis cancer (testicular) 1 infusion reaction 1 infection (dental abscess) 1 spontaneous ileal perforation requiring emergency surgery 1 infusion reaction 2 infections (chest infection and shingles)</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>

and 115 (44.8%) female (average age of 35.68 ± 14.22 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%) discontinue 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.
no adverse effects on maintenance treatment with Tacrolimus. 11 patients (29.7%) of ADA and 11 patients (23.3%) of golimumab discontinued because of drug-related adverse events in the first 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 early intervention if needed, it is safe and it is avoiding 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 COMPARISON OF THE EFFICACY OF ADALIMUMAB VERSUS GOLIMUMAB IN MODERATE-TO-SEVERE ULCERATIVE COLITIS: A MULTICENTER EXPERIENCE FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)

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Introduction: Adalimumab (ADA) and golimumab (GOL) are effective 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 & Methods: We reported the Sicilian Network experience on the comparative efficacy of ADA and GOL in patients (pts) with moderate-to-severe UC. From June 2015 until April 2017, 197 consecutive pts with moderate to severe UC treated with ADA or GOL. The efficacy was evaluated at 8 weeks and at the end of the follow up considering “clinical response” (reduction of at least 2 points of Partial Mayo Score with concomitant steroid reduction or discontinuation) and “clinical remission” (Partial Mayo Score ≤ 1).

Results: 118 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-TNFa (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 37/79 (46.8%) 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=0.08). No difference was observed in clinical outcomes at 8 weeks and at the end of the follow up between naïve 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). Univariable 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 = 0.016 respectively). Median duration ≥ 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-TNFα 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
R. Orlando: Abbvie, MSD, Takeda
All other authors have declared no conflicts of interest.

P1711 REAL-LIFE STUDY (GORE-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)

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Introduction: The efficacy of golimumab (GOL) and adalimumab (ADA) in the treatment of patients (pts) with moderate-to-severe ulcerative colitis (UC) has been studied in two completed clinical trials.1,2 However, patients enrolled in clinical trials are not entirely representative of those encounters in the clinical practice. GOL is not on the market for treating UC from March 2015. The aim of our study is to evaluate the durability and safety of golimumab in the context of real-life clinical practice.

Aims & Methods: An observational, multicenter, retrospective-prospective, phase IV study, enrolling all patients starting golimumab from March to December 2015, from 21 IG-IBD centers. This study consists of two different parts: 1) retrospective, regarding data until December 2016 and 2) a prospective one, still ongoing, that will be concluded at the end of 2017. The co-primary outcomes were the overall durability of treatment with golimumab, defined as persistence of golimumab therapy because of sustained clinical benefit, and safety. Results for the first 54-weeks period are reported. Results: 121 patients (47% female, 53% Mayo score < 7 at baseline, median age of 45.7 years (SD 14.3) and a median duration of disease of 8 years, (range 0–28) were included. Sixty-seven patients (55.4%) had severe endoscopic activity (Mayo 3). Clinical activity was defined as moderate (Partial Mayo Score (PMS) 5–6) in 55 patients (45.5%) and severe (PMS ≥ 7) in 66 patients (54.5%). The mean exposure to anti-TNFα-was reported in 52% of patients (38 Infliximab, 4 Adalimumab, 21 both). Steroid dependence and refractoriness were reported in 78.5% and 16.5% of patients, respectively. After 54 weeks, the cumulative persistence on golimumab therapy was 35%. Seventy-seven patients withdrew from treatment, without significant difference among anti-TNFα-naïve vs exposed patients (55.2% vs 71.4%, p = 0.11 Chi-Square test). Among 90% of patients who completed week 54, 48% of patients were still on golimumab therapy at week 54. Thirty patients (25%) were still on treatment without significant difference between weeks 24 and 54. After 54 weeks the persistence on golimumab therapy was 57.1%. Ten patients reported an adverse event, but only 6 of them withdrew from treatment. Four patients reported paradoxical skin lesions, unresponsive to topical therapies. Fifteen patients (12.4%) underwent colectomy within the first 54 weeks, with a greater percentage among anti-TNFα-exposed patients (20.6% vs 3.4%, p = 0.02 Chi-Square test).

Conclusion: This preliminary real-life data study endorses golimumab’s promising results, showing 57.1% of durability treatment at week 54 in those patients.
who completed first 14 weeks of treatment and confirming it as a safe drug. Anti TNF α more likely to avoid colonic resection.

Disclosure of Interest: D. Pugliese: Lecture fees from AbbVie and Takeda.

M. Allocca: Speaker’s fees; Janssen, Pfizer Consultant’s fee; Nikkiso Europe

M. Di Girolamo: Speaker for AbbVie and Takeda

All other authors have declared no conflicts of interest.

References


P1712 PREVALENCE OF CIPROFLOXACIN RESISTANCE IN INFLAMMATORY BOWEL DISEASE PATIENTS WITH GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA ACCORDING TO COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA ACCORDING TO GUT P1712 PREVALENCE OF CIPROFLOXACIN RESISTANCE IN 2 Sandborn WJ et al, Contact E-mail Address: viita@skuja.be

Introduction: Ciprofloxacin is one of the most frequently used antibiotics in patients with IBD. In the last few years an emerging resistance to ciprofloxacin.

2. Vervoort, J. et al. 2014. ''High Rates of Intestinal Colonisation with Fluoroquinolone-Resistant ESBL-Harbouring Enterobacteriaceae in 1, K. Pekarska1, H. Dauvarte1, E. Vasuka1, A. Kaleczna1, A. Krumina2, A. Lejnicz1, A. Derovs3

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Results: A total of 148 patients with confirmed IBD diagnosis were included in the study. In UC (47.3%) with CD. We found that 12 (12%) of the UC patients and 5 (11%) of the CD patients were colonized with ESBL-E. The isolated ESBL producing strains from UC patients included Escherichia coli (n=10), Klebsiella oxytoca (n=1) and Escherichia hermanii (n=1). The isolated ESBL producing strains from CD patients included only Escherichia coli (n=5). The isolated bacterial planktonic genes associated with ESBL production in UC included CTX-M (n=11; 92%), TEM (n = 4; 33%), SHV (n = 1; 8%), in CD; TEM–CTX-M (n = 4; 40%) and TEM (n = 3; 60%). In UC (60%) and in CD (20%) of the CD patients included only Escherichia coli. In 1 case of the ciprofloxacin resistance CTX-M, TEM and SHV gene combination was observed, in 1 case TEM-CTX-M and TEM gene combination was observed, in 4 cases only CTX-M gene was present and in 1 case only TEM gene was present.

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.

Disclosure of Interest: The present study was supported by the French Society for Inflammatory Bowel Disease.

References


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P1714 PREDICTIVE FACTORS OF RESPONSE TO ANTI-TNF A TREATMENT OF COMPLEX ANO-PERINEAL FISTULAS IN CROHN’S DISEASE

M. Hafi, D. Pugliese: Lecture fees from AbbVie and Takeda, which has received honoraria from Janssen

L. Lamarsalle: Ludovic LAMARSALLE is an employee of HEVA HEOR, which has received honoraria from Janssen

M. Allez: Matthieu Allez has received honoraria from Novo Nordisk, MSD, Abbvie, Ferring, Genentech, TCell, Janssen, Pfizer, GSK, Hospira and UCB

Introduction: Anti-TNFs are well-established in therapeutic 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 during that period and were studied for this 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: 48.7% 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 started ranged from 1 to 7 years. A total of 12 months of follow-up 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 (31.4% at 12 months for infliximab). Treatment discontinuation rate was also within the same range observed and stable over time, with 10% of patients discontinuing infliximab year each treatment 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.

Disclosure of Interest: The present study was supported by the French Society for Inflammatory Bowel Disease.

References

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P1713 PATTERNS OF ANTI-TNF USE IN PATIENTS WITH ANO-PERINEAL COMPLEX FISTULAS IN CROHN’S DISEASE

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Introduction: Anti-TNFs 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 α 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 α with a minimum follow-up of one year. Patients less than 16 years of age or over 70 years were excluded and non-observing 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 α. 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 azathioprin. After the induction phase, 53% of the patients...
achieved clinical remission, 31% a partial clinical response and 12% a primary failure. The patients maintained a clinical remission 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 treatment. Clinical remission after the induction phase was the only independent predictive factor of long-term remission maintenance under treatment after multivariate analysis. However, predictive factors of early treatment discontinuation 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 outcomes. Further studies assessing early therapeutic adaptation and factors influencing outcomes 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

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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 result that in a significant economic burden on the healthcare system, had led to the development of bio-similar 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 on 4 tertiary hospitals in Spain from January 2013 to December 2016. The analysis included all consecutive IBD patients. One cohort composed 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 CU, 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 was used to remission. For CD, response was defined as a decrease in Harvey-Bradshaw score of 3 or more from baseline, and a Harley-Bradshaw score of 4 or less was used to was used to remission. We used Student’s t for independent samples and Chi-square test. Time to withdrawal due to adverse effects was estimated using Kaplan-Meier survival analysis.

Results: The analysis included 346 consecutive IBD patients, 104 treated with original IFX and 242 with biosimilar IFX. 103 patients were diagnosed with CU, 238 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 38.8% for biosimilar IFX, p = 0.811). There were no significant differences in cumulative discontinuation rate due to AEs in original IFX and biosimilar IFX (42.4%, 95% CI 39.49–45.34 months versus 44.61 (95% CI 42.66–46.56 months), log-rank test p = 0.292).

Conclusion: This study experienced 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 COLITIS?

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Introduction: Acute severe Colitis (ASC) is a severe complication of inflammatory bowel disease (IBD), for which there is no consensus definition. Its diagnosis is often based on clinico-biological and endoscopic criteria. Low endoscopy is essential for the positive diagnosis 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 years with extremes ranging from 14 years to 65 years, a female predominance was found with a sex ratio of 0.77. The ASC was inaugural in 20 (41.66%), while 28 cases (58.33%) are known to have IBD, with 24 cases of UC (85.7%). 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 64.58% cases. CMV viral inclusions were found in 2.08% of cases. First-line medical treatment is based mainly on parenteral corticosteroid therapy, has been established in all cases. A second-line treatment with anti-TNF therapy was used in 5 cases (10.41%) 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-varied analysis, endoscopic disease was found in more than females (53.6 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

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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 fully identified. 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 semi-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 of 3 or a decrease in PGA of 2 points or less. Remission was defined as decrease in SCCAI or PGA to 0. Ability of FC and fold change in FC to predict response and remission at 6 months was estimated using Mann-Whitney test.

Results: A total of 94 patients were commenced on biological therapy of who 70 (75%) commenced vedolizumab with a mean age of 41.8 (SD: ±18.2). Fifty-one (72%) and 39 (55%) patients commencing anti-TNF therapy were on concurrent immunomodulators (IM) and steroids respectively compared to 9 (38%) and 16 (67%) patients respectively for vedolizumab. Sixteen (67%) patients treated with vedolizumab had prior exposure to anti-TNF agents compared to 4 (6%) in the anti-TNF treated group. The 6-month response among patients treated with vedolizumab and anti-TNF agents was 77.2% and 73.5% respectively. The calprotectin values were similar for responders (428.5 (75-1359.0) [n = 50] to vedolizumab or 428.5 (75-1359.0) [n = 50] to vedolizumab (P = 0.56). Similarly, responders (909 (13, 2100) [n = 28] and non-responders (850 (240, 2000) [n = 13]) to anti-TNF agents had comparable calprotectin values at baseline, P = 0.93.

Conclusion: In a single-centre series of biologic treated UC patients, baseline FC did not predict clinical response at 6 months.

Disclosure of Interest: S. Subramanian: Advice report member for Abbvie, Janssen and Behringer-ingelheim 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

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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. To quantify efficacy of medications in real-life treatment during the study period, data regarding medical treatment were collected from Registry.

Aims & Methods: The aim of the study was assess the efficacy and tolerability of different medications in reference to demographic data and disease location and behaviour. 6030 of patients have been enrolled to the Polish National CD Patient’s Registry, conducted in 9 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 (mesalamine, 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 93.94 vs 91.65, both p<0.05). 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 patients 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, THERAPEUTIC RESISTANT INFLAMMATORY BOWEL DISEASE


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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 prospective study was to assess the efficacy of induction VDZ therapy in 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: 41 of 41 enrolled IBD patients were therapeutic failure or intolerant for infliximab and/or adalimumab therapy. The mean age was 38.6 years (range 18–67; median 40) and the average disease duration was 11.7 years (range 1–36; median 10). In 16 cases moderate and in 25 cases severe disease activity was observed. Extranodal manifestations occurred in 44 patients, and in 4 cases the IBZ was associated with primary sclerosing cholangitis (PSC). Rate of the therapeutic responders for VDZ induction therapy was 80.49% (N = 33). Complete clinical remission was observed in 19 cases (46.34%) 8 cases (19.51%) of which were steroid-free remission. In one case VDZ therapy had to be interrupted due to development of IBZ associated colorectal cancer and in one case due to MCV infection.

Conclusion: Our results suggest that induction VDZ therapy is effective and it is a safe therapeutic option in anti-tumor necrosis factor alpha failure or intolerant IBD patients with moderate or severe disease activity.

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

P1720 OUTCOMES OF TREATMENT FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE RECEIVING BIOLOGIC THERAPY

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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. Despite a reduction of TB incidence since 1990 and August 2016 only one LTBI patient diagnosed with LTBI following treatment for LTBI the risk of 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 tuberculin skin test (PPD) or interferon gamma release assay (IGRA) and who received biologic therapy between January 1990 and August 2016. LTBI data included extracted included from 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 mean age was 38.3 ± 14.4 years and 66.8% 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 was isoniazid (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 therapy was 43 days (range 4-3635). 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.

P1721 CLINICAL CHARACTERISTICS AND MANAGEMENT OF CROHN'S DISEASE IN PATIENTS WITH RESIDUAL DISEASE AFTER SURGERY COMPARED WITH CURATIVE SURGERY. RESULTS FROM PRACTICROHN STUDY

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Introduction: Resection in Crohn’s disease (CD) intends to be a curative surgery, but recurrence is a frequent event in these patients. Consequently, the aim of our study was to describe the characteristics and management of patients with residual disease after surgical resection (RD) and compare these patients with patients undergoing 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 the period 2007-2010. Clinical data was retrospectively collected from clinical charts. RD was defined when lesions were still present after surgical resection. Postoperative recurrence (POR) was defined by clinical symptoms (diarrhea, abdominal pain) and endoscopic Rutgeerts score ≥2, and/or CT or MRI confirmation of disease activity. Categorical variables were compared with the x² test or Fisher’s exact test. Kaplan-Meier method was used to estimate time to clinical recurrence and a log-rank test to obtain statistical significance.

Results: Three hundred and sixty-four patients were analyzed (mean age 40 years). There were 243 patients in RD group and 121 patients in CS group. More patients were performed an endoscopy within the first year after surgery in the RD group vs CS (59% vs 123%); p = 0.03 but no difference in prophylactic treatment were found in RD vs CS groups. POR was more frequent among patients with RD (69% vs. 29%, p = 0.001). Median time to POR was longer in patients who received prophylaxis vs those who didn’t received it (698 vs 392 days; p = 0.41, 81/275 (29%) in the CS presented POR with median time to POR being longer in patients who received prophylaxis (no median found vs 1529 days); p = 0.04. Table 1.

Table 1: Cohort Characteristics and Estimated Post-treatment Tuberculosis Reactivation Rate

| Mean Age | 38.3 (±14.4) years |
| Male Sex | 24/35 patients |
| Type of Inflammatory Bowel Disease (IBD) | Ulcerative Colitis (23%); Crohn’s Disease (77%) |
| Mean Time since IBD Diagnosis | 9 years (range: 0-48) |
| Type of Biologic Therapy | Infliximab (40%); Adalimumab (29%); Vedukizumab (20%); Certolizumab (11%); Isoniazid (INH) for 9-months |
| Therapy | (74%) INH for 6-months (11%) Rifampin 4-months (9%) INH + Rifampin for 3-months (3%) Others (3%) |
| Median time to initiate biologic therapy | 43 days (range: 4-3635) |
| Mean duration of follow-up | 2.9 ± 3.3 years |
| Mean Pre-treatment Risk of Development of Tuberculosis | 0.52%/year (range: 0.0%–1.3%/year) |
| Estimated Post-treatment Tuberculosis Reactivation Rate | 0.98 cases per 100 patient-years |

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 our cohort. 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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Aims & Methods: 'pro-germination' primary BAs including CA in human stools B) Describe primary BAs (cholic acid and chenodeoxycholic) into secondary (deoxycholic acid). A) Assess the effects of an antibiotic therapy. Group 1 (n = 12) received AC for 7 days and SB for 14 days. Group 4 (n = 12) did not receive any treatment. Groups 1, 2, 3 had successive stool samples at D-8, 0, 3, 7, 10, 13, 21. Group 4 had stool samples at D0, 7, and 21. The fecal concentrations of 28 BAs were measured by HPLC-MS, and expressed as % of total BA concentration.

Results: AC alone (group 2) significantly reduced the rate of fecal secondary BA at day 7 compared to control (group 4) (54.8 ± 1.0 vs 83.1 ± 7.4%, p = 0.017). In group 3 (AC plus SB), the decrease in secondary BA rate was significantly less than AC (71.23 ± 7.4% vs 54.8 ± 9.5%, p = 0.04), and this difference was prolonged over time. Similarly, the AC + SB group showed a significantly lower (and sustained) increase in CA than in the AC alone group.

Conclusion: Antibiotics alter the transformation of BA by microbial enzymes into secondary BAs (deoxycholic acid) and fecal fecal secondary BAs. This may affect metabolic pathways for the carcino-gene.

Disclosure of Interest: H. Duboc: I worked with Biocodex as an advisor for the development of a free smartphone App for patients suffering of constipation. C. Kelly: Scientific advisor and consultant to: Merck, Seres Therapeutics and Summit

All authors have declared no conflicts of interest.

References

P1725 ASSOCIATION OF FUSOBACTERIUM NUCLEATUM IN ORAL CAVITY AND COLORECTAL CARCINOMAS
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Introduction: While particular imbalances in the gut microbiota have been linked to 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 subjects1-3. 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 carcinogenesis4. 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 biopsy 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 (3.9%) respectively. The detection rate of F. nucleatum was 96% in saliva and 93% in CRC by next-generation sequencer. 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. 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, for the objective for the strict bands.

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

References
P1727 HUMAN MILK OLIGOSACCHARIDES: A NEW STRATEGY AGAINST POST-ANTIBIOTIC CLOSTIDIUM DIFFICILE INFECTION?

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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 diarrhea (4). The most commonly cited mechanism for antibiotic-associated diarrhea 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, (i) the impact of HMOs on the microbial community and activity (e.g. bacterial metabolites and pH), and (ii) 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 metabolite 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, important members of beneficial bacteria 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 eradicating *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.


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P1728 CHANGES IN GUT MICROBIOTA ASSOCIATED WITH AGING IN OBESE INDEIVUALS

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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 in 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 increased 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 COLORRECTAL NEOPLASIA

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Introduction: Due to its high incidence, sporadic colorectal cancer (CRC) remains one of the most frequent cancers worldwide. 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, which are produced by the *Lactobacillus helveticus* D76 strains and which are resistant against pathogens. Bacteriocins are divided into more groups, colicins and microcins are the most important ones. Bacteriocins possess antibacterial, antineoplastic, proapoptotic 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 colonscopia in patients with non-advanced colorectal adenoma, non-a-A (11 men, 10 women, mean age 63 ± 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 men, mean age 70 ± 9) and CRC (12 men, 10 women, mean age 70 ± 10) and in the controls (average risk population with normal findings on colonscopia and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 56 ± 12).

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 detected 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 colicins was observed in non-a-A, a-A and CRC group when compared to controls, p < 0.001. Significantly higher production of colicins 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 colonscopia. 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

P1730 CARBOXYLIC AND AMINO ACIDS MIXTURE IDENTICAL TO THE METABOLITES OF THE PROBIOTIC ESBERRICHIA COLI M17 INDUCES BACTERIOCIN SYNTHESIS IN PROBIOTIC LACTOBACILLUS HELVETICUS D75 AND D76 STRAINS AND ENHANCES THEIR ANTIMICROBIAL ACTIVITY AGAINST TEST PATHOGENS

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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 strain *Lactobacillus helveticus* D75 (NCBI Reference Sequence NZ_CP008291.9) and *Lactobacillus helveticus* D76 (NCBI Reference Sequence NZ_CP016827.1) 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 ActoFor®-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 Genetic Analyzer and were analyzed using NCBI/BLASTX.

Results: The identical sequences of 537 bp homologous to gene fragment of helveticin of *Lactobacillus helveticus* DPC 4571 (hiv_1632 gene) were detected.
in DNA of both probiotic strains. Sequencing of these fragments showed differ-
ences in three nucleotides compared to the reference DNA of DPC 4571 strain (A instead of G at position 46, C instead of T at position 249 and A instead of T at position 537), but all these replacements do not lead to changes in the amino acid sequence.

**Conclusion:** Study shows that there are at least two bacteriocins in Lactobacillus helveticus D76 and one bacteriocin in Lactobacillus helveticus D75. Carboxylic acid and amino acids mixture identical to the metabolites of the probiotic Escherichia coli strain M17 probably induces bacteriocin synthesis in probiotic strains Lactobacillus helveticus D75 and Lactobacillus helveticus D76 and enhances their antimicrobial activity against test pathogens Escherichia coli O75 and Salmonella Enteritidis 209, most likely due to an increase in bacteriocin gene expression.

**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**

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**Introduction:** Fecal microbiota transplantation (FMT) has been shown to be effective treatment for 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 recurrence and progression for a median period of 3.8 yrs. 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 reported more frequently that their bowel function had become worse and more irregular after the treatment (68.9% vs. 55.8%, 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 reported these symptoms (P = 0.006). AB patients experienced more symptoms of the upper intestinal tract than the FMT group (40.9% vs. 25.5%, p = 0.015). 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**

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**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 (0.51%) 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 occurrences and the remaining (18.6%) were recurrences of CDAD. The majority of the patients underwent study under performed Proton Pump Inhibitors–IBP (52.8%) and antibiotic therapy (74.6%) (28.6% made a single antibiotic, and 23.6% 2 or more distinct antibiotics). Penicillin antibiotic class was the most used, followed by Cephalosporins (21.5%), Fluoroquinolones (11.4%) and Macroline (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**


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**Introduction:** Colonic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. Persistent bleeding or acute massive bleeding of pre-

senting 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 for visibly 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**

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**Introduction:** The incidence of acute lower gastrointestinal bleeding (LGB) is increasing in Western countries, but the predictors of its outcome are not well studied. Blachford's score was 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, 16 (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 predicting 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.

**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 %.

<table>
<thead>
<tr>
<th>Score</th>
<th>TRF</th>
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<th>TRF</th>
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<tr>
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<td>80</td>
<td>78</td>
<td>61</td>
<td>90</td>
<td>89</td>
<td>59</td>
<td>50</td>
<td>91</td>
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<td>Strate &gt; 1</td>
<td>69</td>
<td>58</td>
<td>41</td>
<td>81</td>
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<td>58</td>
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<td>Velayos &gt; 0</td>
<td>95</td>
<td>46</td>
<td>41</td>
<td>96</td>
<td>90</td>
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<td>44</td>
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<tr>
<td>Newman &gt; 1</td>
<td>92</td>
<td>40</td>
<td>39</td>
<td>93</td>
<td>89</td>
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<td>32</td>
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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.
References

P1735 ACUTE LOWER GASTROINTESTINAL BLEEDING IN PATIENTS TREATED WITH NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS COMPARED WITH WARFARIN IN CLINICAL PRACTICE: CHARACTERISTICS AND CLINICAL OUTCOME
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Introduction: Acute lower gastrointestinal bleeding (ALGB) occurs in patients taking anticoagulants either warfarin or non-Vitamin K oral anticoagulants (NOACs). The use of NOACs has been increasing compared with warfarin in recent years. We investigated patients with ALGB on anticoagulation therapy and we analyzed characteristics, management and clinical outcome in patients treated with NOACs versus warfarin.
Aims & Methods: All patients with ALGB 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 ALGB, 43 (7.3%) were on NOACs and 68 (11.6%) on warfarin with an age 75.9±10.9 years. We investigated patients with ALGB on anticoagulation therapy and we analyzed characteristics, management and clinical outcome in patients treated with NOACs versus warfarin.
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Aims & Methods: All patients with ALGB 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.

P1737 NOBLADS - THE NEW RISK SCORE TO PREDICT THE SEVERITY OF ACUTE LOWER GASTROINTESTINAL BLEEDING
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Aims & Methods: 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, white blood cell count ≥ 15,000, hemoglobin ≤ 9, platelet count ≤ 100,000, age ≥ 65 alike, and disease score ≥ 2 (Charlson comorbidity index) and syncope (NOBLADS). Results: 173 patients were included (male: 50.3%, mean age: 69 ± 17 years), with LGIB manifested by hematochezia (91.9%) or melena. Endoscopic evaluation was performed 1.7 ± 2 days after admission, with the most frequent findings being diverticular hemorrhage (n = 53) and ischemic colitis (n = 29); no lesions were found in 8.3% of cases. Thirty-three patients required intervention (endo- scopic n = 27, radiological n = 2, surgical n = 4) and 36 (20.8%) repeated endo- scopic intervention. 28.9% of the patients presented severe LGIB and NOBLADS score determined the severity of LGIB with an area under the curve value of 0.92 ± 0.018. Overall, higher score values were associated with a requirement for transfusion support, intervention and longer hospitalization (p < 0.001 for trend test). Patients at high risk for severe LGIB (score ≥ 2, n = 59) presented a significantly higher number of transfused UCEs (3.6 vs 0.08, p < 0.001), intervention (38% vs 13%, p < 0.001) and days of hospitalization (12.8 vs 3 days, p < 0.001).
Conclusion: 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.

Reference

P1739 ENDOCOSPIC MUCOSAL RESECTION OF COLORECTAL POLYS IN ANTICOAGULATED PATIENTS
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Introduction: The management of antithrombotic agents during the peri-endoscopic period concerns the risks of bleeding and thromboembolism. The Japan Gastroenterological Endoscopy Society (JGES) guidelines revised in 2012 emphasizes 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 taking anticoagulants without a heparin bridge in anticoagulated patients. We performed a prospective study in our hospital JGES and NOBLADS centers (UMIN00002146). The subjects are colorectal polyps resectable by EMR. Inclusion criteria of patient is good performance status (ECOG) 0–1, without organ failure. Warfarin is continued as usual if PT-INR is less than 2.6, and direct oral anticoagulants (DOAC) is continued until an evening of the day before and is discontinued on only the day. Primary endpoint is post-EMR bleeding required any interventions (major bleeding). Major bleeding is defined as active bleeding or adherent clot on the resection site by emergent colonoscopy, or conservative treatment required blood transfusion. Conservative bleeding with no intervention (minor bleeding), thromboembolism, and comparison between warfarin and DOAC are clarified as secondary endpoint.
Results: 41 patients (154 lesions) were performed EMR from February 2015 to March 2017. Patients’ characteristics were as follow, the median age was 74 years old (range 68–94) and the average polyp size was 11.6 (range 5–22) mm in diameter. Anticoagulants were divided into 19 cases of warfarin and 22 cases of DOAC. The incidence of major bleeding was none in all cases. On the other hand, minor bleeding which did not require any intervention was recognized at 14.6% (6/41), but there was no case to interrupt anticoagulants. The rate of minor bleeding is no difference between warfarin and DOAC. There was no correlation between minor bleeding and PT-INR value in three cases of warfarin. All three cases of DOAC were medicate once a day. Thromboembolism was not observed.
Conclusion: In colorectal EMR, we clarify the safeness with continuation of warfarin and short discontinuation of DOAC on that day, compared with heparin bridge. We expect to lead to reconsideration of current guideline for safer treatment.
Disclosure of Interest: All authors have declared no conflicts of interest.

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P1740 RISK OF COLORECTAL CANCER IN ASYMPTOMATIC INDIVIDUALS WHOSE FIRST DEGREE RELATIVES WERE AFFECTED BY CRC AT DIFFERENT AGES OF ONSET: A SYSTEMATIC REVIEW AND META-ANALYSIS OF 9.28 MILLION SUBJECTS
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Introduction: The current literature is mixed regarding whether first-degree relatives (FDRs) of 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 all selected studies that met the selection criteria were included. 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. ≥40; <50 vs. ≥50; <60 vs. ≥60 years). Statistical heterogeneity was assessed by the I² statistics. 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, I²=95.7%). 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 for <40 vs. RR=1.42, 95% CI=1.24–1.62 for ≥40 years, p = 0.017; RR=2.81, 95% CI=1.94–4.07 for <50 vs. RR=1.47, 95% CI=1.26–1.69 for ≥50 years, p = 0.001). The Begg’s regression test did not identify any publication bias (Kendall’s taum=0.122, p = 0.159).

Conclusion: A family history of CRC in FDRs whose age of onset is earlier than 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.

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
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Introduction: Few studies compared the risk of colorectal cancer (CRC) among individuals with probands who were parents, siblings, and those with two or more probands.

Aims & Methods: This systematic review and meta-analysis tested the hypothesis that the risk of CRC conferred by family history of CRC in parents vs. siblings vs. ≥2 first-degree relatives (FDRs) was similar. The Ovid Medline, EMBASE and grey literature were searched from their inception to December 2016, and all screening studies that met the selection criteria were included. Two reviewers independently searched, assessed and extracted data from eligible studies. The relative risks (RR) and odds ratios were pooled based on a random effects meta-analysis. We conducted subgroup analyses according to the identity of FDRs affected (parents vs. siblings vs. ≥2 FDRs), and examined statistical heterogeneity by the I² statistics. Potential publication bias was explored by funnel plot analysis with Begg’s regression test.

Results: We identified 56 case-control and 7 cohort studies, consisting of 9.28 million subjects who were finally included in the meta-analysis. Asymptomatic individuals with siblings affected (RR=2.44, 95% CI=1.90–3.13); parents affected (RR=2.18, 95% CI=1.95–2.45) and ≥2 FDRs affected (RR=2.68, 95% CI=1.62–4.43) had statistically similar risk of CRC. We did not identify any publication bias based on the Begg’s regression test (p = 0.159).

Conclusion: The risk of CRC was similar among subjects whose siblings; parents or ≥2 FDRs were affected by CRC. Information on the identity of the FDRs 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.

P1742 GILBERT SYNDROME IS NOT THAT INNOCENT?
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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 papa, PSA and mammography (≥40yrs), 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)7TA in the promoter region of UGT1A1 enzyme. Prevalence of CVD and cancer were compared between subjects with/without Gilbert syndrome. Mortality data was obtained from the Israeli ministry of health and cancer incidence from the Israeli registry.

Results: A total of 6258 (49%) men and 6461 (51%) women, median age 47.0 ± 11.5 years, were included of which 1.019 had clinical Gilbert. Gilbert was significantly more common among men (11.5% versus 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 2.04, 95% CI=1.04–4.16 p=0.017), as well as hypertension (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 (2.6.4, 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 patients with Gilberts (OR 0.36, 95% CI=0.13–0.97, 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.

All other authors have declared no conflicts of interest.

P1743 CHARACTERISTICS AND PREDICTORS OF INTERVAL CANCER: A CASE-CONTROL STUDY
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Introduction: Interval colorectal cancer is largely related to a poor endoscopic performance (missed lesions), incomplete and/or non-responsive surveillance and/or different detection capabilities. The interval cancer is largely related to 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 13 indents 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 index 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 1:1 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.

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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 (cecal 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 patients), 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 diverticulosis. There were no significant differences in all these characteristics between patients with interval cancer and controls.

Conclusion: Patients with interval cancer tend 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, longer retrieval time) should be considered for patients with these characteristics.

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

P1745 THE RELATIONSHIP BETWEEN QUANTITATIVE FIT RESULTS AND NEOPLASTIC FINDINGS

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Introduction: Fecal Immunochemical Testing (FIT) is currently used in most Canadian provinces to screen for colorectal cancer. Newfoundland and Labrador is a provincial population-based colorectal cancer screening program over the past five years. Newfoundland and Labrador selects patients for colonoscopy if one of two FIT values ≥100ng/mL.

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 study between the ages of 50–74 and at average risk for colorectal 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 54,017. 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 17% of cancers based on both FIT tests being positive. 24.7% of cancers is only one FIT kit were supplied to patients and 38.4% of cancers based on both FIT kits being positive. An additional 1133 colonoscopies were required to detect the additional cancers by using two FIT kits as opposed to one. There was no difference in the detection of cancer, advanced adenoma or colorectal adenoma as FIT cut off was increased and with a reduction in FIT kits compiled from two to one. The positive predictive value for cancer increased as the quantitative cut off was increased but this increase was not at the expense of case detected.

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 number of FIT kits a patient should complete as well as setting the quantitative cut off. Increasing the FIT cut-off results in a higher probability of colon cancer or adenoma, but there are overall less case detection.

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

P1746 PREVALENCE OF SERRATED POLYPSYNDROME IN AVERAGE-RISK SCREENING COLONOSCOPY IN GERMANY

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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 (TSA). The serrated polyps syndrome (SPS) is characterised by multiple SPs throughout the colon. SPS is associated with a lifetime risk of CRC of 6.6% and an increased cancer risk during follow-up in patients with hyperplastic disease. One large case-control study on the prevalence of SPS in average-risk individuals under-going screening colonoscopy was 6.6%. Detection rates for SPs, HPs, SSAs and TSAs were 21%, 18%, 4%, and 33.9%, Detection rates for SPs, HPs, SSAs and TSAs were 21%, 18%, 4%, and 20% respectively. Of all individuals with detected SPs none fulfilled the diagnostic criteria for SPS. Hence, we determined a prevalence of SPS of 0% in our cohort.

Conclusion: The aim of the study was to determine the prevalence of SPS in average-risk individuals participating in the German CRC screening programme. We retrospectively analyzed screening colonoscopies performed by 11 gastroenterologists in 4 medical practices and 1 tertiary academic hospital between 01/01/2011 and 14/12/2016. Individuals <50 years, with an increased risk for CRC (i.e. family history of CRC, cancers in first-degree relatives with SPS) from medical records of individuals with SPS in Germany. Hence, we determined a prevalence of SPS of 0% in our cohort.

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

References

P1747 METABOLIC RISK FACTORS AND THEIR IMPACT IN COLORECTAL CANCER SCREENING MULTICENTER PROSPECTIVE STUDY

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Background: Screening: colorectal cancer is focused on the population with average risk of this disease. Individuals with metabolic syndrome represent a population with a higher risk of developing colorectal cancer, but they are not included in colorectal cancer screening standards.

Methods: Two FIT tests are more effective than one at screening. Patients with interval cancer tend 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, longer retrieval time) should be considered for patients with these characteristics.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: Using optical imaging, we detected a significant increase of luminescent and tumor areas in the gut of the infected group suggesting an increase of oxidative stress 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 mice infected 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) in 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.

P1747 CONTRIBUTION OF GERMINE MUTATIONS TO NON FAMILIAL EARLY ONSET CANCERS

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Introduction: Early onset gastrointestinal cancers lacking a positive family history are an increasingly worrisome entity. On one hand, early onset is the cornerstone of genetically determined oncological problems, but on the other negative family history does 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 that: 2: mosaic mutations in the ApcMin (clone1) gene, 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 VUS, 1 had VUS 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. 2 gastric diffuse cancer underwent NGS analysis (40 and 45 yrs, 1M and 1F), both negative.

Among 2 pancreatic cancer patients (<50 yrs, 2F), one tested negative and the other had a VUS on PMS2.

NGS analyses 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.

Reference

P1750 YM155 AS AN INHIBITOR OF CANCER STEMNESS SIMULTANEOUSLY INHIBITS AUTO-PHOSPHORYLATION OF EGFR AND G9A-MEDIATED STEMNESS IN EGFR-POSITIVE CANCER CELLS

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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 numbers of tumor spheres derived from gastric carcinoma 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 HCT116 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 HCT116-derived tumorspheres compared to the parental cells, which induced tumorsphere formation through activating G9α-mediated stemness property. YM155 was demonstrated to inhibit the tumorsphere formation by unexpectedly blocking the autophosphorylation of EGFR and G9α-mediated stemness pathway. The chemical and genetic inhibitions of EGFR and G9α revealed the significant role of EGFR-G9α 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 G9α-mediated stemness, but also demonstrated that YM155 inhibited the formation of tumorspheres by simultaneously inhibiting EGFR autophosphorylation and activity of G9α as a potent anti-stemness agent against EGFR-positive cancers.

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

References

P1754 FGF14 IS A FUNCTIONAL TUMOR SUPPRESSOR THROUGH INHIBITING AMPK/MTOR PATHWAY IN COLORECTAL CANCER

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Introduction: Promoter hypermethylation-induced epigenetic silencing of tumor related genes played a key role in the initiation and development of colorectal cancer (CRC). Using Methylation DNA Immunoprecipitation (MeDIP), 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′-deoxycytidinetriphosphate (5-Aza). The methylationspecific 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.

Conclusions: FGF14 was downregulated or silenced in all (10/10) CRC cell lines, while it was readily 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. Overexpression 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
P1755 CHARACTERISTICS OF HYPERMUTATOR IN DIGESTIVE SYSTEM CANCERS

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Introduction: A cancer with a number of somatic mutations is defined as “hypermutator,” and shows therapeutic features, such as high sensitivity to immune checkpoint inhibitor. However, to date, analyses of hypermutator have not been done with a large number of cases.

Aims & Methods: The aim of this study is to analyze the incidences and characteristics of hypermutator in digestive system cancers. We analyzed somatic mutations in digestive system cancers in 1145 cases (age: 67.4±11.3 yrs, M:F = 755:390), those underwent surgery after full informed consent during 2014 to 2015. Genomic sequencing was performed on 47 inherited cancer-associated genes and 411 cancer-associated genes using next-generation sequencer (Illumina NextSeq500). The results were compared with the cases of normal colonoscopy, 14 first degree healthy relatives from Lynch families.

Results: The 1145 subjects included 583 colorectal cancers (CRC), 229 gastric cancers (GC), 103 metastatic liver tumors, 100 hepatocellular carcinomas (HCC), 45 pancreatic cancers, 23 GISTs, 15 esophageal cancers and 14 neuroendocrine cancers. Hypermutator was defined when a tumor having >500 mutations in the somatic DNA.

Conclusion: The incidence of hypermutator in digestive system cancers developed in 13.9% of CRC patients and 25.9% of GC patients. It was also detected in 33.3% of small intestinal cancers. Moreover, the result of this study suggests that the significant loss of the transcriptional regulator CtBP2 contributes to intestinal epithelial stem cell differentiation.

P1757 MICROBIOTA A NEW INDICATOR OF COLORECTAL CANCER (CRC) HETEROGENEITY

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Introduction: Location and somatic gene signature of CRCs may impact prognosis and response to therapy. 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. Microbiota was sequenced from 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.

Conclusion: Microbiota was sequenced from 72 CRCs (35 sporadic-S, 19 Lynch-L) and compared to control and an increase in differentiation markers were seen. Interestingly, in mouse small intestine, CtBP2 is expressed in the proliferative compartment. 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.

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

P1758 EPIGENETIC SILENCING OF SMOC1 IS ASSOCIATED WITH DEVELOPMENT OF COLORECTAL TRADITIONAL SERRATED ADENOMAS

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Introduction: Colorectal serrated lesions (SLS) include hyperplastic poly (HP), traditional serrated adenoma (TSA) and sessile serrated adenoma/polyp (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.

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

Reference

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 were analyzed using an Infinium HumanMethylation450 BeadChip, and changes in DNA methylation within the development of TSAs were identified. Identification of methylated 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. Effects of epidermal growth factor on CRC cell growth in a preclinical setting were identified. Methylation of identified genes and CIMP markers were significantly downregulated in TSAs. Immunohistochemical analysis showed that SMOC1 was expressed in the epithelium of normal colonic tissues and SSA/Ps, but that expression is significantly reduced in TSAs. Immunohistochemical analysis of SMOC1 in SSA/Ps was associated with higher metastasis rate. Immunohistochemical analysis of SMOC1 in TSAs were assessed in vitro and in vivo.

Results: BeadChip analysis revealed 11 genes in which methylation levels were progressively increased during development of TSAs. Among them, SMOC1 was prevalently methylated in TSAs, but was rarely methylated in SSA/Ps (p = 0.001). RT-PCR revealed that SMOC1 is abundantly expressed in SSA/Ps, colon formation and in vivo tumor formation by CRC cells. Analysis of colorectal lesions revealed that SMOC1 is frequently methylated 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 SMOC1 methylation may play a role in the neoplastic pathways arising in TSAs.

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

Aims & Methods: We aimed to improve a simple, noninvasive blood test that would easily 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. Hemoglobin levels were determined by HemoCue (Hemofilcro, Sweden). All tests were repeated at least three times. A total of 684 healthy controls, and 20,000 leukocytes were analyzed by flow cytometry using the method outlined above. An initial template data has been generated 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 has been completed. The template file contains a template data in order to minimize fluorescence overlap among 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 < 0.4E-12), Lung cancer (Fig 2a) (P < 0.001), and MDS (P < 0.01) and Lymphoma (P < 2.1E-07) 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 72.9% and 77.4%, and for PC 70.6% and 75.9%, respectively. The positive (PPV) and negative predictive (NPV) values of CD24 for the detection of CRC was 38% and 94.8%, and for PC 17.1% and 97.3%, respectively. Specificity and sensitivity for HM were also statistically significant (data not shown). The CD24 test could not discriminate between patients with cervical, stomach and lung cancers and healthy subjects.

Conclusion: Conclusions: CD24 expression in PBLS is a promising blood test for the early detection of CRC, PC, and HM.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medical Check-up All authors have declared no conflicts of interest.

P1760 CD24 PREDICTIVE LEVELS - A SIMPLE NOVEL BLOOD TEST FOR IDENTIFICATION OF VARIOUS CANCER ALTERNATIVE VACCINE PATHWAYS

Aims & Methods: We aimed to improve a simple, noninvasive blood test that would easily 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. Hemoglobin levels were determined by HemoCue (Hemofilcro, Sweden). All tests were repeated at least three times. A total of 684 healthy controls, and 20,000 leukocytes were analyzed by flow cytometry using the method outlined above. An initial template data has been generated 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 has been completed. The template file contains a template data in order to minimize fluorescence overlap among detection channels.

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Conclusion: Conclusions: CD24 expression in PBLS is a promising blood test for the early detection of CRC, PC, and HM.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medical Check-up All authors have declared no conflicts of interest.

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Introduction: Background: CD24, a mucin-like cell surface molecule, highly expressed on solid tumors and hematological malignancies (HM) (Gastro 2006, Clin Am Rev Cancer 2007, Can Rev 2008). mAb to CD24 were found to inhibit the growth CD24 cancer cells (Kraus et al., 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).

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Introduction: Background: CD24, a mucin-like cell surface molecule, highly expressed on solid tumors and hematological malignancies (HM) (Gastro 2006, Clin Am Rev Cancer 2007, Can Rev 2008). mAb to CD24 were found to inhibit the growth CD24 cancer cells (Kraus et al., 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).
Conclusion: Diabetics require a more intense bowel preparation aided by budesonide to help others. This suggests that both doses of budesonide 8 and 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 picoxol.

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

PI762 IMPROVED ADENOMA DETECTION WITH ELUXEO LINKED COLOR IMAGING (LCI) AS COMPARED TO CONVENTIONAL WHITE-LIGHT HIGH-DEFINITION COLONOSCOPY—A RANDOMIZED CONTROLLED TRIAL

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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 contrast 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 on the 7000 processor endoscopes, whether 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 no 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 techniques.

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. 63.2 adenomas, respectively (p<0.005).

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 (<5 mm) adenomas.(Study was supported by ECT grant GINOP-2.1.1-15-201500128.)

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

PI763 COMPREHENSIVE ANALYSIS OF LONG NON-CODING RNAs WITH CHARACTERISTIC EXPRESSION LEVEL ALTERATION IN COLORECTAL ADENOMAS AND CANCERS

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Introduction: Long non-coding RNAs (lncRNAs) play a 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 profiling and the analysis of underlying functional interactions of aberrantly expressed lncRNAs. lncRNA expression levels were analyzed on 60 colorectal biopsy samples (20 CRCs, 20 adenomas, 20 normals) by Human Transcriptome v3.0 A 2.0. Expression alteration of certain candidates was verified by qPCR. Furthermore, in silico validation was performed on HGU133 Plus 2.0 array data and also on TCGA COAD dataset. mRNA targets of lncRNAs were predicted with the miRCODE algorithm and miRNA expression was analyzed with miRNA 3.0. Arca, Transcriptome-wide lncRNA-miRNA coexpression pattern analysis was also performed.

Results: According to HTA results in adenomas 12 lncRNAs (e.g. LINC00278) were upregulated and 6 lncRNAs (e.g. RP17.479D18.1) were downregulated compared to normals, while in CRCs 1 lncRNA (UCA1) was overexpressed and 8 lncRNAs (e.g. LINC00350) were underexpressed compared to adenomas (p<0.05; 2≥FDR ≥2). In CRC samples 8 lncRNAs (e.g. AC123023.1) were overexpressed and 9 lncRNAs (e.g. RP13-497K6.1) were downregulated compared to normals. 42% of lncRNAs upregulated in CRC samples showed high AUC in their expression in adenomas (p<0.05). Of the 8 lncRNAs (e.g. overexpressed CCAT1, downregulated LINCO1313). In line with aberrant expression of certain lncRNAs in tumors, mRNA and mRNA targets expression showed systematic alterations, e.g. UCAP1 upregulation in CRC samples in parallel with miR-1 down-regulation accompanied by CMET target mRNA overexpression (p<0.05).

Conclusion: The defined lncRNA sets (e.g. CCAT1, UCA1) may have a regulatory role in adenoma and CRC development and in tumor cell growth pathways. A subset of CRC-associated lncRNAs showed significant differential expression in colorectal precancerous samples, which raise the possibility to develop potential adenoma specific markers and achieve early detection of colon lesions.

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

PI764 AI-ANTITRYPSIN (SERPIN-A1) AS A PUTATIVE BIOMARKER FOR COLORECTAL CANCER

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Introduction: Serine protease inhibitors (Serpins) play an important role in the regulation of enzymes involved in proteolytic cascades. Members of the family are: alpha-1-antitrypsin, alpha-1-antichymotrypsin, C1 inhibitor, antithrombin and neuroserpin. Kallikrein-related peptides (KLKs) are involved in proteolytic cascades of different tissues. KLK14, acting via PAR-2, represents an auto- crine/paracrine regulator of colon tumorigenesis and alpha-1-antitrypsin is a natural inhibitor of KLK14. Therefore its role in regulating the proteolytic cascade in colorectal tumorigenesis is of great importance.

Aims & Methods: The aim of this study was to analyze A1-antitrypsin (AAT) expression in tissue samples at different stages in the process of colorectal cancer development. 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 determined 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 survival curves demonstrate that low alpha-1-antitrypsin expression is significantly associated with longer DFS (p=0.001) as well as 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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PI765 DIFFERENTIATION BETWEEN NEOPLASTIC AND NON-NEOPLASTIC DIMINUTIVE COLORECTAL POLYPS WITH FUJINON ELUXEO-BLI VERSUS FICE ELECTRONIC PROCTOSCOPY--A RANDOMIZED CONTROLLED MAGNIFICATION--A RANDOMIZED PROSPECTIVE STUDY

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Introduction: Real-time differentiation between neoplastic and non-neoplastic colorectal lesions may be crucial during colonoscopy. While adenomas are
neoplastic, and therefore should be resected, hyperplastic polyps never turn malignant and do not require specific endoscopic therapy. The aim of our prospective, randomized study was to distinguish subcentimeter hyperplastic and adenomatous polyps based on Fujinon FICE versus Eluxeo BLI electronic chromoendoscopy technology with high-definition colonoscopy 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 <10 mm polyp were included. Video clips of each polyp were digitized and stored for subsequent analysis without 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. The video-library was comprised of 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 cases, all of the observers had to assess the color, the vascularization and the surface of the polyps, and the pit pattern was also assessed. The Kudo classification was used. Finally, with the definitive histological confirmation (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 endoscopy technology of the 5 experts without zoom and with 50x magnification to differentiate between hyperplastic and adenomatous lesions were 77.62% and 84.51%, 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 chromoendoscopy technology with Eluxeo BLI significantly improved the reliability of the histology prediction as compared to FICE and WLI endoscopy 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 reset and discharge strategy. (Study was supported by ECT grant G1/155/2015-04128)

Disclosure of Interest: All authors have declared no conflicts of interest.
symptomatic condition (lumbago): lesion site (Rs/Ra/Rb), 1/2/19 cases; mean temperature of biopsied cervical enzymes: biopsy positive rate, 11/14 (78.5%); presence/absence of endoscopic ultrasonography, 11/11 cases; and M/SM/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 primarily chemotherapy/endoscopic mucosal resection with ligation/endoscopic mucosal resection/endoscopic submucosal dissection/surgery/drug 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 recognised. 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 relapse. In the case with hepatitis 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 a diameter ≤10 mm or with a diameter >10 mm in diameter. Among the treatment options, EMRL is considered useful and well tolerated. However, follow-up observation and case accumulation seem necessary to determine the long-term prognosis in NET, which may recur after year two.

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

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**P1769 SELECTIVE ERADICATION OF K-RAS MUTATED CANCER CELLS BY DELIVERY OF BACTERIAL TOXINS**

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**Introduction:** Inactivation of TP53 is the most frequent genetic damage in human cancer. In addition, hyperactivation of the RAS pathway is common in many human malignancies (Lung (LC)--40%, pancreatic (PC)--95%) and colorectal cancer (CRC)--50%). Despite multiple attempts, targeting these pathways for the treatment of cancer, for example through the development of RAS pathway inhibitors has not proven to be effective thus far. Herein, we propose to exploit the hyperactive RAS pathway and TP53 mutation status of human cancer to deliver targeted antitumor therapy. We have previously reported that a recombinant adenovirus, carrying a pro-apoptotic gene (PUMA) under the regulation of RAS (Rasmut/p53wt and HCT116-/-;Rasmut/p53 mut CRC cell lines, expressing the anti-toxin under p53 responsive elements (RGC) specifically in cancer cells harboring hyperactive RAS (Giladi et al. 2007). Furthermore, we have shown, both in vitro and in vivo, that replacing the pro-apoptotic gene with a bacterial toxin can improve the efficacy of this system (Shapira et al. 2015).

**Aims & Methods:** We aimed to establish a tight regulated dual system by expressing a toxin under PTX4 elements in cancer cells, while sparing normal cells by expressing the anti-toxin under p53 responsive elements (RGC) specifically in non-malignant cells. Adenoviral vectors carrying the toxin (P4-Maf-Mcherry) and anti-toxin (Maf-Mcherry) were engineered and fused to the lentivirus envelope. Cell death was measured qualitatively by the MTT assay. Human colorectal, pancreatic, lung and triple negative breast cancer cell lines, A549, H1650, DU145, and A549 EGFR-positive cancer cells. We demonstrated that ILF3 stabilized and activated EGFR-mediated G9A in EGFR-positive cancers.

**Results:** In conclusion, this study demonstrated that ILF3 was an oncogene property in the EGFR-positive cancers. In conclusion, this study demonstrated that ILF3 was an oncogene property in the EGFR-positive cancers. In conclusion, this study demonstrated that ILF3 was an oncogene property in the EGFR-positive cancers.

**References**


P1772 Efficacy and safety of twelve chemopreventive regimens for the recurrence of colorectal adenomas: A network Meta-analysis

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Introduction: Although various pharmacological agents have been trialed for recurrent colorectal adenomas, their comparative effectiveness remains unclear. 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 44,447 participants treated by twelve preventive agents for recurrent colorectal adenomas. Aspirin (95/%) and other NSAIIDs, 11 antioxidants, 4 dietary supplements, 3 calcium, 4 folate acid, 2 calcium plus antioxidants, 2 aspirin plus folate acid and 1 5-aminosalicylic acid were the most efficacious on COX1 and COX2 protein expression in EPA-resistant MC38r compared to EPA alone. A similar pattern of response was measured in vivo. We measured EPA incorporation in these cells and observed an increased accumulation of EPA in CT26wt cells treated with both EPA and aspirin compared to EPA alone. This correlation was confirmed both in primary operable and metastatic CRC patients with elevated GPS was associated with poor OS (HR = 0.01). This correlation was confirmed both in primary operable and metastatic CRC patients with the GPS system was wide and accounts for 10% of all newly diagnosed cancers1. Although the therapeutic options have dramatically developed, the long-term survival rate of patients with CRC remains low. In recent years, great efforts have been made to identify inflammation-related factors for precise prediction of disease progression. Prognostic ratio of inflammation is increased by the combination of the level of serum C-reactive protein (CRP) and albumin, which are indicators of systematic inflammatory response and nutritional status respectively. Growing evidence suggested that GPS was served as an independent prognostic index in a variety of malignancies. For patients with CRC, the GPS system was also widely studied, but the results were controversial.

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 population studies

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Introduction: Colorectal cancer (CRC) is the third most common cancer worldwide. The overall 5-year survival rates for patients with CRC have dramatically improved. The 5-year survival rate of patients with CRC remains low. In recent years, great efforts have been made to identify inflammation-related factors for precise prediction of disease progression. Prognostic ratio of inflammation is increased by the combination of the level of serum C-reactive protein (CRP) and albumin, which are indicators of systematic inflammatory response and nutritional status respectively. Growing evidence suggested that GPS was served as an independent prognostic index in a variety of malignancies. 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 carried out on PubMed, Embase, Chinese, and 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**

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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 (62.2%). 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 hyperinsulinemia, 15% from diabetes mellitus, 45.5% from dyslipidemia and 12.3% from chronic obstructive pulmonary disease. 43.8% 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 (19.8%) 73 advanced adenomas in 59 cases (11.4%), ≥3 adenomas in 62 cases and ≥3 adenomas and/or serrated polyps 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 < 0.0001).

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 at 3 years in the cases with multiplicity in the baseline colonoscopy.

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

**P1776 OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL LESIONS: A SINGLE EUROPEAN CENTER EXPERIENCE**

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Introduction: Colorectal Endoscopic Submucosal Dissection (ESD) is recommended for superficial neoplastic lesions at high risk of submucosal invasion. ESD allows an en-bloc resection but ESD experience is still limited in Western countries.

Aims & Methods: The aim of this retrospective study was to evaluate technical and clinical outcomes of colorectal ESD, in a single tertiary European center. We retrospectively analyzed all consecutive patients treated by ESD for colorectal lesion at Humanitas Research Hospital (Milan, Italy) from January 2011 to September 2016. The primary outcomes were technical success, defined as en-bloc resection and clinical success, defined as curative resection (R0) without need for surgery. Secondary study outcomes were complication rate and adenoma/carcinoma recurrence. Complications were divided in early (<24 hours) and delayed (>24 hours) and included bleeding and perforation. Recurrences were identified as the presence of adenoma or carcinoma at the endoscopic follow-up performed at 6 months, 1, 3 and 5 years. Data were analyzed by STATA 14 statistical software.

Results: A total of 185 lesions in 185 patients (M: F 97:89, mean age 66.7 ± 11.5). Lesions were located in the rectum (63.4%), left colon (9.7%), transverse (11.9%) and right colon (14%). Mean size of lesions was 39.3 ± 24.3 mm. Mean Glasgow Prognostic Score was 1.3 ± 0.7. Recurrences were found in 24 out of 185 lesions (12.9%). At 3 years follow-up, 57 lesions (30.3%) were classified as curative resection (R0). Recurrences were identified as the presence of adenoma or carcinoma at the endoscopic follow-up performed at 6 months, 1, 3 and 5 years. Data were analyzed by STATA 14 statistical software.

Conclusion: ESD is a feasible strategy to manage superficial colorectal tumors. This study demonstrates favorable technical and short-term clinical outcome of colorectal ESD, but further studies are needed to confirm the long-term efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: The transition to population-based program resulted in the improvement of target population participation followed by increase in colorectal neoplasm detection.

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

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P1778 LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY CANCER AND HIGH GRADE DYSPLASIA IN COLORECTUM

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Introduction: Although endoscopic submucosal dissection (ESD) is a widely accepted treatment for colorectal neoplasm, little is known about large consecutive studies evaluating long-term outcomes of early cancer and high grade dysplasia. We investigated 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 514 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%, 91.3%, 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

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Introduction: Patients with irritable bowel syndrome (IBS) often have co-existent intestinal disorders (FGID). Recent studies demonstrated that an impairment in psychological factors.

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.

P1780 GUT SYMPTOMS AND TRANSIT DISTURBANCE IN PARKINSON’S DISEASE ARE PAN-ENTERIC BUT NOT UBQUITOUS: A WIRELESS MOTILITY CAPSULE STUDY

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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 motility.

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 (table1) were included. PD severity was scored with the modified Hoehn and Yahr (H&Y) staging scale. GI symptom burden was identified by Wexner constipation score and Gastroparesis Cardiac Syndrome 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 WMC study. Were analyzed data about gastric emptying time (GET), small bowel transit time (SBTT), colonic transit time (CTT) and whole gut transit time (WGTT).

Results: One patient could not swallow the capsule, and of the 14 patients completing the study, 8 reported GI symptoms. Compared to non-symptomatic PD 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 lower constipation scores were correlated, suggesting a pan-enteric problem in symptomatic individuals. There was a significant correlation between the Wexner constipation score and CTT in all patients (p < 0.01) but not GCSI and GET (p > 0.10). The results of Wireless Motility Capsule did not differ between non-symptomatic PD and controls.

P1781 OUTLET DYSFUNCTION IS PREVALENT IN SEVERE FUNCTIONAL BLOATING: PRELIMINARY REPORT FROM A MULTICENTER ITALIAN STUDY

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Introduction: Bloating and abdominal distension are common and bothersome symptoms and a frequent complaint of patients affected by functional 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: 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.
the handling of gas is a relevant underlying mechanism in FGID patients with bloating. A subset of patients with severe abdominal bloating and gas directional defects are lacking in these patients.

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 abdominal distension. In addition, we propose a prospective, multi-center study of patients with severe abdominal bloating (VAS score ≥ 24 on a 100-mm scale) as primary complain with/without visible abdominal distension. Patients were recruited at 4 gastroenterology outpatient clinics in Italy. Clinical examination, demographic data, 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. All patients underwent an anorectal manometry and electromyography.

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: All authors have declared no conflicts of interest.

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P1782 PATHOPHYSIOLOGY ASSESSMENT OF FECAL INCONTINENCE AND RISK FACTORS ASSOCIATED. RESULTS OF A TEN YEARS RETROSPECTIVE STUDY. L. D’Alba1, E. Ribichini2, R. Uргesa3, M. A. Vitiale4, L. Pallotti5, M. C. Di Paolo6, C. Cesari1, S. Cognetti4, P. Zaczik6, M. G. Graziani5
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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% male (M), mean age 63 range (22–92) years in 2016) were divided into two groups: 67 patients with severe abdominal bloating and gas directional defects and also severe FI and 67% of these patients had also severe FI. After excluding organic disorders, the cases of abdominal bloating and gas directional defects were further divided into two groups: 67 patients with severe abdominal bloating and gas directional defects and also urinary incontinence (UI) (44%); 70 patients with severe abdominal bloating and gas directional defects and also severe FI (47%). Proctological and urological conditions were: 47% of patients had history of previous pelvic surgery (34, 23%) and pelvic surgery was: 77% (21%); 40% (47%) of patients were diagnosed with UI. The FI may be confused with dyschezia and the defecation maneuver.

Conclusion: In our study, in accordance with the literature, we observed a female prevalence in FI. FI is significantly associated with previous proctological/pelvic surgery and traumatic anal/vaginal delivery. Furthermore, patients with FI referred difficulty evacuating stools, too. In fact in patients with dyschezia-type constipation, the FI may be confused with an encopresis. 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.

References


P1783 RETROSPECTIVE STUDY: ROLE OF SEHCAT TEST IN THE DIAGNOSIS OF BILE ACID MALABSORPTION AS A CAUSE OF CHRONIC DIARRHOEA AND POTENTIAL RISK FACTORS ASSOCIATED. C. Barber Caselles1, B. Lobo Alvarez2, J.L. Mosquera3, S. Agudelo-Brux1, F. Azpiroz4, J. Santos5
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Introduction: Bile acid malabsorption (BAM) is a common and frequently under-investigated cause of chronic diarrhea. Most of the cases of chronic diarrhea after excluding organic disorders are labelled as functional diarrhea or irritable bowel syndrome (IBS). The most commonly used diagnostic test is Seleno-humidic acid taursine (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 diarrhea.

Aims & Methods: We aimed to evaluate the usefulness of SeHCAT scan in evaluating patients with chronic diarrhea and identify potential risk factors associated to BAM. We retrospectively reviewed all patients who had SeHCAT scan between June 2014 and October 2016 in a University Hospital. BAM was defined as SeHCAT retraction of less than 15%. We collected the following variables: demographic characteristics, IBS-D Rome III criteria, duration of diarrhoea (months), stool culture, parasitic 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 diarrhea underwent SeHCAT testing over the reviewed period. 42M; 95F, median age 46 y (95% CI: 44.0–50.1), median BMI 25.34 kg/m2 (95% CI: 24.8–27.0), 70.4% of patients met 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 for parasites and parasitological associations of stool specimens 13.1% (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 BAM in 48.9% (67/137): 25.4% (mild 10–15%); 31.3% (moderate 5–10%); and 43.3% (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

Sex (M:F) 30:37 12.58
Age (median; 95% C.I) 48.00 (44.52–53.54) 40.50 (40.06–49.49)
BMI (median; 95% C.I) 26.84 (25.56–28.78) 23.64 (23.31–25.98)
Duration of diarrhoea (months; median; 95% C.I) 60.00 (43.51–66.95) 24.00 (23.55–38.34)

Positive SeHCAT Negative SeHCAT

Bile acid malabsorption (%) 34.3%(23/67) 14.3%(10/70) 0.031
IBS-D Rome III criteria 67.2%(45/67) 71.4%(53/70)

(continued)
A773

United European Gastroenterology Journal 5(5S)

Table 1 Continued

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
</table>
| HLA-DQ2 Haplotype (%) | 23.8% (15/63) | 31.7% (20/63), 5
| HLA-DQ8 Haplotype (%) | 14.1% (9/64) | 6.3% (4/63), 5

Patients who exhibited MAB (confirmed by SchCAT test) were treated with colestyramine. 27.5% (23/67) exhibited partial response, 33.9% (21/67) exhibited total response, 3.2% (2/67) exhibited no good tolerance, we had no information in 21% (13/67).

Conclusion: SchCAT scanning must be considered as a diagnostic tool for the diagnosis of chronic diarrhea, specially in those patients with long-standing diarrhoea.

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

P1784 INTAKE OF FERMENTABLE OLIGO-, DI- AND MONO-SACCHARIDES 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


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Introduction: The cause of IBS is uncertain; however, food intolerance shares 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 1999/2115 (94.7%) members of the community that completed study questionnaires, 117 (5.9%) had IBS by Rome III criteria. The IBS group also had lower quality of life (p = 0.03) or medical and/or surgical co-morbidity (OR = 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 = 2.90 (1.30–5.45), P = 0.001). The IBS group also had lower quality of life (p < 0.001). Joint risk analysis identified high intake of total FODMAP intake as a risk factor for IBS only in subjects with psychiatric disease and/or life event stress (table). Similar effects were seen for individual symptoms, in particular bloating (OR 2.4(1.25–4.60), p < 0.008). Increased risk of IBS was identified with ingestion of high intake of individual FODMAPs (e.g. fructose, lactose) in combination with psychosocial factors, but not with sucrose (control) in any group.

Conclusion: FODMAP intake was similar in IBS and No-IBS groups in the community (lactose intake was lower in IBS subjects, likely due to avoidance of dairy products (Long 2017)). However, as expected, IBS patients in the community had a greater likelihood of psychiatric disease, life event stress and clinical co-morbidity. 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 function (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

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Introduction: A large proportion of patients with irritable bowel syndrome (IBS) suffer from anxiety or depression, but the associations with pathophysiological 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 investigate oro-anal transit time (OATT) and visceral sensitivity (rectal balloon distension and a lactulose challenge test), and they also completed questionnaires to investigate abdominal symptoms (IBS-SSS), bowel habits (BSF), quality of life (IBSQOL), extraintestinal somatic symptoms (PHQ-12), sense of coherence (SOC), fatigue (MFI), GI-specific anxiety (VSI) and physical and sexual abuse.

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 affected (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, p = 0.01), 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 pathophysiological examinations, the findings were more inconsistent. OATT was similar between groups, as was 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.

Table: Joint effects of psychiatric disease, life stress & total FODMAP intake on relative risk of IBS in community

<table>
<thead>
<tr>
<th>Psych Disease</th>
<th>FODMAP Life Stress</th>
<th>IBS</th>
<th>No IBS</th>
<th>Adjusted* OR p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Low</td>
<td>19 (5.1)</td>
<td>356 (94.9)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>Low</td>
<td>23 (6.8)</td>
<td>315 (93.2)</td>
<td>1.2 (0.6–2.4)</td>
</tr>
<tr>
<td>No</td>
<td>High</td>
<td>14 (3.5)</td>
<td>383 (96.5)</td>
<td>0.6 (0.3–1.3)</td>
</tr>
<tr>
<td>Yes</td>
<td>High</td>
<td>16 (4.5)</td>
<td>342 (95.5)</td>
<td>0.9 (0.5–1.9)</td>
</tr>
<tr>
<td>No</td>
<td>Low</td>
<td>9 (7.6)</td>
<td>109 (92.4)</td>
<td>1.6 (0.7–3.8)</td>
</tr>
<tr>
<td>Yes</td>
<td>High</td>
<td>16 (9.5)</td>
<td>152 (90.5)</td>
<td>1.9 (0.9–3.9)</td>
</tr>
<tr>
<td>No</td>
<td>High</td>
<td>5 (4.9)</td>
<td>97 (95.1)</td>
<td>1.0 (0.4–2.9)</td>
</tr>
<tr>
<td>Yes</td>
<td>High</td>
<td>15 (10.5)</td>
<td>128 (89.5)</td>
<td>2.3 (1.1–4.8)</td>
</tr>
</tbody>
</table>

*Adjusted variables: age, sex, marital status, education, job, income, smoking, drinking, and medical history.

Conclusion: FODMAP intake was similar in IBS and No-IBS groups in the community (lactose intake was lower in IBS subjects, likely due to avoidance of dairy products (Long 2017)). However, as expected, IBS patients in the community had a greater likelihood of psychiatric disease, life event stress and clinical co-morbidity. 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 function (Zhu 2013). (ClinicalTrials: NCT0126597)
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>298.33</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VAS</td>
<td>No</td>
<td>33.52</td>
<td>&lt;0.001</td>
<td>Yes</td>
<td>39.56</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>&lt;0.001</td>
<td>Yes</td>
<td>7.1</td>
<td>0.001</td>
</tr>
<tr>
<td>MFI</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>1.34</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>Symptoms duration (months)</td>
<td>No</td>
<td>1.17</td>
<td>0.03</td>
<td>Yes</td>
<td>1.78</td>
<td>0.36</td>
</tr>
<tr>
<td>Lactose challenge test, perceived pain (AUC)</td>
<td>No</td>
<td>776.833</td>
<td>0.06</td>
<td>Yes</td>
<td>705.170</td>
<td>0.01</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 pathophysiological 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, Albireo, Glycom and Shire, and as. All other authors have declared no conflicts of interest.

R. Tönnbom; Hans Tönnbom has served as Consultant/Advisory Board member for Almirall and Allergan as a speaker for Tiliotis, Takeda, Shire and Almirall.

P1786 THE ASSOCIATION BETWEEN IRRIgable BOWEL SYndrome AND LACTOSE INTOLERANCE

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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 aim 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 lactase 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 lactase intolerance via hydrogen breath test (0, 15, 30, 60, 90, and 120 minutes). Additionally, symptoms arising during the test were assessed.

Results: Of the total 200 participants, 100 (50%) were in IBS and 100 (50.0%) were in control group. There were 133 females (66.5%), and the mean age was 40.5±12.3 years. Of the total 70 patients (35.0%) with lactose intolerance, 47 (47.0%) were in IBS and 23 (23.0%) were in control groups (p = 0.001). Symptoms related to IBS were more common in participants with lactase intolerance in both groups (p = 0.001, p = 0.001 respectively). A comparison of the two groups with regard to symptomatology after the test showed the presence of complaints in 35 (35.0%) patients in IBS group as compared to 24 (24.0%) subjects among controls (p = 0.092). The incidence of lactase intolerance in patients with IBS subtypes of diarrhea-predominant IBS, constipation-predominant IBS, mixed IBS, and unspecified IBS were 27 (57.4%), 7 (4.9%), 10 (21.3%), and 3 (6.4%), respectively, with no significant differences (p = 0.161, p = 0.124, p = 1.000, and p = 0.661 respectively).

Conclusion: A significantly increased frequency of lactose intolerance was found among IBS patients than in controls. In additional, symptoms associated with lactose intake occurred at a higher frequency in IBS patient, although the difference was insignificant.

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

References

P1798 THE PREVALENCE AND IMPACT OF OVERLAPPING ROME IV FUNCTIONAL GASTROINTESTINAL DISORDERS ON SOMATISATION, QUALITY OF LIFE, AND HEALTHCARE UTILISATION: RESULTS FROM A THREE-COUNTRY GENERAL POPULATION STUDY

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Introduction: The population prevalence of Rome IV functional gastrointestinal disorders (FGIDs) and their cumulative effect on health impairment is unknown. We sought to address this issue.

Aims & Methods: An Internet-based health survey was completed by 5931 of 6300 general population adults from three English-speaking countries (2100 each from US, Canada, and UK). The survey included questions on demographics, medication, surgical history, somatisation, quality of life, doctor-diagnosed organic GI disease, and criteria for the Rome IV FGIDs. Comparisons were made between those with Rome IV FGID diagnoses against non-GI and organic GI disease controls.

Results: The number of subjects having symptoms compatible with a FGID was 2083 (35%) compared to 3421 (57.7%) non-GI and 427 (7.2%) organic GI disease controls. The most frequently met diagnostic criteria for FGIDs was bowel disorders (n = 1665, 28.1%), followed by gastroduodenal (n = 627, 10.6%), anorectal (n = 440, 7.4%), oesophageal (n = 414, 7%), and gallbladder disorders (n = 10, 0.2%). On average, the 2083 individuals who met FGID criteria qualified for 1.5 FGID diagnoses, and 742 of them (36%) qualified for FGID diagnoses in more than one anatomic region. The presence of FGIDs in multiple regions was associated with increasing somatisation, worse mental and physical quality of life, greater use of medical therapies, and a higher prevalence of abdominal surgeries; all p < 0.001, see table. Notably, individuals with FGIDs in multiple regions had worse somatisation and quality of life scores than organic GI disease controls.

Conclusion: Roughly a third of the general adult population fulfils diagnostic criteria for a Rome IV FGID. Beside a third of this subset have FGID diagnoses in multiple GI regions and this overlap is associated with increased health impairment. Study Support: The Rome Foundation

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Although correlations between features of irritable bowel syndrome (IBS) and HRQoL 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 annually over five years. On the following features: gastrointestinal (GI) symptom severity (GSSR), quality of life (QOL), GI specific anxiety (VSI), general anxiety and depression (HADS), coping resources (CRI), and sense of coherence (KASICM). 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: 0.37 to 0.5). 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 updated 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, Ironwood, Janssen, Kiowa Kirin, Menarini, Mylan, Novartis, Nutricia, Ono Pharma, Rhythm, Shionogi, Shire, SK Life Sciences, Takeda.

H. Törnblom: Hans Törnblom has served as Consultant/Advisory Board member for Almirall and Allergan as a speaker for Tillotts, Takeda, Shire and Almirall.

L. Van Oudenhove: Lukas Van Oudenhove has received grant support from Albe 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</th>
<th>Sex</th>
<th>Age</th>
<th>GSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS-QOL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1595</td>
<td>1437</td>
<td>158</td>
</tr>
<tr>
<td>&lt;65</td>
<td>1511</td>
<td>84</td>
<td>92</td>
</tr>
<tr>
<td>≥65</td>
<td>82</td>
<td>1503</td>
<td></td>
</tr>
<tr>
<td>&lt;3</td>
<td>17.1</td>
<td>86.4</td>
<td>0.001</td>
</tr>
<tr>
<td>≥3</td>
<td>17.1</td>
<td>86.4</td>
<td>0.001</td>
</tr>
</tbody>
</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 quality of life.
symptoms, IBS subjects also reported more somatic symptoms; 103 (34%) had abdominal pain at least 3 times/month, 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 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.

### Table 1: Coagulation tests in IC and control groups.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>IC group</th>
<th>Controls</th>
<th>Normal range</th>
<th>Units</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INR</td>
<td>1.15 [1.09–1.22]</td>
<td>1.02 [0.96–1.07]</td>
<td>0.85–1.15</td>
<td>sec</td>
<td>.0005</td>
</tr>
<tr>
<td>LA</td>
<td>1.05 [0.97–1.13]</td>
<td>1.04 [0.93–1.10]</td>
<td>0.8–1.22</td>
<td>sec</td>
<td>948</td>
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</tbody>
</table>

Results: Significant differences were recorded in the levels of PT (median: 14.5 vs 13.1 sec, p = .0005) and aPTT (median: 28.7 vs 26.4 sec, p = .0005) between patients and controls, respectively. Prolongation over the upper limit of normal of PT (>14 sec) was most common in IC patients, 67.9% vs 18.2% (p = .0005) as well as the prolongation of aPTT (>35 sec), 12.7% vs 6.2% (p = .469). 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).

Conclusion: Prolongation of PT and aPTT, possibly indicating a chronic Vitamin K deficiency state, may be implicated in the pathophysiological mechanisms of IC.

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

References:
2. Tempersidis AG, Kapsoritakis AN, Linardou IA et al. The role of hypercoagu-

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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 Boles criteria (clinical, colonoscopy, pathology consistent with IC and negative culture). The following data were collected: age, sex, clinical exacerbation of IC, organ failure, laboratory results (hemoglobin, platelet number, leucocytes, C-reactive protein, creatinine, sodium, potassium, arterial pH and arterial lactate and LDH), endoscopic and CT findings, surgery and death. Logistic regression was used to study association with poor outcomes - surgery and overall mortality.

Results: In this study, 349 patients were registered and 193 fulfilled the predefined criteria: 121 (62.7%) were females and mean age was 72-years-old (IQ: 23–94). At admission a total of 165 (85.5%) patients presented with hematoxia, 112 (58%) with abdominal pain, 82 (42.5%) with diarrhea, 27 (11.9%) with shock and 7 (3.6%) with occlusion. Twenty three (11%) required surgery. In-hospital, 30-day and overall follow-up mortality rates (up to 205 weeks) were 7.3%, 6.7% and 14%, respectively. On multivariate analysis, surgery was independently associated with shock (OR: 4.8; p = 0.011) (internal occlusion OR: 3.5; p = 0.046), and arterial lactate (OR: 1.3; p = 0.012). On univariate analysis, hemoglobin, hematocrit, C-reactive protein, LDH, the number of risk factors, arterial pH, and the need of red blood support were significantly (p < 0.05) associated with in-hospital and 30-day mortality. Creatinine was also associated with intra-hospital mortality. The variables that correlated independently in the multivariate analysis with in-hospital mortality were male gender (OR:4.3; p = 0.03), and arterial pH (OR: 0.001; p = 0.036) and with 30-day mortality was the need of blood cells support (OR: 2.1; p = 0.006).

Conclusion: In our cohort of predominant elderly patients, arterial pH, shock and lactate were significantly associated with need of surgery. Arterial pH on admission was also independently associated with in-hospital mortality. Early identification of these factors can aid in the decision making in this context and select the best care level for each patient.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1795 THE RISK PREDICTIVE VALUES OF ACG CLASSIFICATION IN A COHORT OF ISCHEMIC COLITIS—REFINING THE DEFINITION OF MILD DISEASE
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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), to create 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 CI (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 10^9/cmm). Patients were then classified as mild (0 risk factors (RF)), moderate (1–3 risk factors), and severe (3 or more risk factors) or any of the following: peritonial signs, pneumatosis or portal venous gas, gangrene on colonoscopy examination and pan-colonic or isolated right-colon ischemia involving 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 CI (62.7% females; mean age 72 years (+13). ACG classification of mild, moderate and severe disease was attributed respectively to 21% of patients (0 intrahospital 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 verified to be due to 3 RF. The univariate analysis revealed a statistical correlation between RF and intra-hospital or 30-day mortality as well as the need for surgery (mean = 4.06, sd = 1.85). ACG classification presented high predictive accuracy for in-hospital and 1-month mortality with an AUROC of 0.80 (95% CI 0.78–0.83). For a cutoff of 3 ACG RF, the sensibility (SE) for death was 100%, specificity (SP) 52%, with a positive predictive value (PPV) 1%, negative predictive value (NPV) 99%. 3 or more risk factors had an odds ratio of 20.2 (confidence interval (CI) 2.59–158) for intra-hospital mortality and 18.42 for 1-month mortality (CI 2.34–144).
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 in patients with at least 3 ACG RF.
Disclosure of Interest: All 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
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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 past clinical experience. Responder and discontinuation rates were derived 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. Dependent 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 $5.53-$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 most 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.
Table: The risk factors surgical treatment in colonoscopy-associated perforation

<table>
<thead>
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<tr>
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<tr>
<td>Sex(M/F)</td>
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<td>14/13</td>
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<td>Purpose of colonoscopy</td>
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<td>27</td>
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</tr>
<tr>
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<td>Endoscopic clipping</td>
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<td>8</td>
</tr>
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<td>23</td>
<td>4</td>
</tr>
</tbody>
</table>

Results: Diagnostic cases in purpose, sigmoid colon in location and non-clipping status were significantly more common in surgery group than conservative group (Table). Endoscopic clipping was performed in 31 cases (immediate; 23, delayed; 8), and immediate clipping group had significantly lower rate of operation (p = 0.013) and better clinical outcome (duration of antibiotics: p = 0.006, hospital stay: p = 0.001). Among 18 surgical cases, 13 patients had primary closure and 5 patients had complex surgery (2; segmental resection, 3; Hartmann’s procedure). The early (<24hr) surgical management significantly decreased the possibility of complex surgery (p = 0.002), as well as had better clinical outcomes such as duration of antibiotic use, fasting time and length of hospital stay (p = 0.003, p = 0.001, p = 0.005, respectively). In therapeutic cases, all five perforated patients who had surgery within 1 day could be managed by simple primary closure, but all four patients who had surgery after 1 day required complex surgery.
Aims & Methods: We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm (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 algorithm (2:1). Algorithm patients were screened for organic disease with the algorithm (2:1). Algorithm patients were screened for organic disease with an alarms-based questionnaire and panel of routine blood/stool tests. When patients had clinical alarms or abnormal tests, data were reviewed by a gastroenterologist and, if appropriate, prompt gastroenterologist appointment offered. All other patients were screened using the Rome III criteria, and received a letter explaining their FGID diagnosis and dietary/psychological management options. Waitlist control patients were not screened. All participants completed follow-up surveys at 6, 26, and 52 weeks. Referring doctors of the algorithm group were sent a feedback survey at study completion.

Results: 89 participants were screened (42 years [SD 14], 62% female). 35 had clinical alarms warranting gastroenterologist review and 45 were diagnosed with FGID (9 excluded). At 6 week follow up: 35/36 FGID respondents had read the diagnostic/management letter, and most (n = 22) of patients saw their FGID diagnosis and dietary/psychological management options. Waitlist control patients had clinical alarms or abnormal tests, data were reviewed by a gastroenterologist and, if appropriate, prompt gastroenterologist appointment offered. All other patients were classified using Rome III criteria, and received a letter explaining their FGID diagnosis and dietary/psychological management options. Waitlist control patients were not screened. All participants completed follow-up surveys at 6, 26, and 52 weeks. Referring doctors of the algorithm group were sent a feedback survey at study completion.

Conclusion: In colonoscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, and early surgical approach decreases complex operation rate. Especially, early operation need be considered in diagnostic perforation regardless of endoscopic clipping.

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 COLORECTAL CANCER SCREENING

Conclusion: In colonoscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, and early surgical approach decreases complex operation rate. Especially, early operation need be considered in diagnostic perforation regardless of endoscopic clipping.

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

Conclusion: In colonoscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, and early surgical approach decreases complex operation rate. Especially, early operation need be considered in diagnostic perforation regardless of endoscopic clipping.

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

Aims & Methods: We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm (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 algorithm (2:1). Algorithm patients were screened for organic disease with an alarms-based questionnaire and panel of routine blood/stool tests. When patients had clinical alarms or abnormal tests, data were reviewed by a gastroenterologist and, if appropriate, prompt gastroenterologist appointment offered. All other patients were screened using the Rome III criteria, and received a letter explaining their FGID diagnosis and dietary/psychological management options. Waitlist control patients were not screened. All participants completed follow-up surveys at 6, 26, and 52 weeks. Referring doctors of the algorithm group were sent a feedback survey at study completion.

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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 COLORECTAL CANCER SCREENING

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Conclusion: An algorithm-based approach to the diagnosis and management of FGIDs, which does not rely on specialist input is feasible, acceptable and effective. A larger scale randomised controlled trial of this new clinical pathway for the diagnosis and management of FGIDs in primary care is warranted.
previously unscreened FDR, starting at age 40 years and ending at age 75. A 5-g FIT was used in all trials, except for one, where a 10-g FIT was used. The model was adjusted to the incidence of CRC in Spain and real prevalence of advanced adenoma and CRC in the familial-risk population (http://dx.doi.org/10.1371/journal.pmed.1002008.g001). The main outcomes were quality-life-year (QALY) gained compared to no screening, lifetime burden of colorectal cancer, lifetime cost 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 was cost-effective for all CRC 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 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 COLONOSCOPY IN SYMPTOMATIC PATIENTS**

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**Introduction:** Fecal occult blood test (FOBT) is a non-invasive and easily performed test which has demonstrated to reduce CRC incidence and mortality in the populations. Fecal calprotectin (FCP) has good evidence for detecting inflammatory bowel disease but its value in CRC and adenoma detection in the populations. Faecal calprotectin (FCP) has good evidence for detecting a formed test which has demonstrated to reduce CRC incidence and mortality in the populations. 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**


Results: Thirty-two subjects (41% males), aged 31–74 years and with a mean BMI of 26.9 (SD 4.9), were included in the analysis. Indications for colonoscopy included family history of CRC (56%) and polyposis surveillance (44%). No serious adverse events were reported. The Pure-Vu significantly increased the number of subjects with an adequate cleansing level (BBPS ≥ 2 for all 3 colon segments) from 25% at baseline (CI 95% [11%, 43%]) to almost 100% (CI 95% [89%, 100%]) after Pure-Vu and the cecum was reached and visualized in all study cases (i.e., 100%; CI 95% [89%, 100%] after Pure-Vu and the cecum was reached and visualized in all study cases (i.e., 100%; CI 95% [89%, 100%]).

Seventy-nine percent of patients who 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: The Pure-Vu System was found to be safe and effective in cleaning inadequately prepared colons to an adequate level for a thorough exam. Based upon these early results it is expected that the device may play a role in patients with an inadequately 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. Bugajski1, P. Wieszcz2, M. Rupinski3, J. Regula4, M.F. Kamiński3

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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 GastroQuo-NOM 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 was 0.02% (9 cases). Gastrotet 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. PCSP 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 4 to 5 mm in diameter
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
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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 (biofeedback, psychosocial support, transanal irrigation (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 clinic 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 blind to the F-PAR result. Standard clinical 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, with current therapy was identified in 200. Neither duration nor type of treatment was identified to be a significant factor in relief. The use of prokinetic or secretagogue drugs are used before considering hospital-based treatment. A common cause of treatment cessation is impaired hand[1]. Training in TAI therapy 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 (6.4 vs 5.9; p = 0.37) and HAD-depression (8.6 vs 8.4; p = 0.46) and were similar in both those who were and 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 = 0.0080). 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 did 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

WEDNESDAY, NOVEMBER 01, 201709:00-14:00

P1806 ADHERENCE WITH TRANSDUAL IRRIGATION USING THE NAVINATM SYSTEM IS ASSOCIATED WITH PERSONALITY TRAITS EVEN WHEN THERE IS IMPAIRED HAND FUNCTION
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Introduction: Transanal irrigation has become a key therapeutic modality in managing patients with neurological diseases who experience constipation and/or faecal 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[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 adhere to TAI therapy. We also wished to identify if there were physiological or psychological correlates of adherence. Twenty-eight consecutive patients (19 SCI and 9 MS; 17 male, mean age 42) were studied. All patients scored greater than 18 on the Cochin Hand Function Questionnaires 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 (6.4 vs 5.9; p = 0.37) and HAD-depression (8.6 vs 8.4; p = 0.46) and were similar in both those who were and 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 = 0.0080). 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 did 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

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

References
non-duodenal sequences. Bioinformatics and statistics were performed in QIIME and Calypso.

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 Nisseria. 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 Crohn’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.


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

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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 IRB-approved prospective study was conducted at the Cancer Institute Sao Paulo, Brazil. Consecutive patients with known cancer admitted with UGIB 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 curve) was significantly better than both the predicting ICU admission than GBS (AUC 0.79; p = 0.04) and AIMS65 score (p < 0.001) for predicting 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:</td>
<td></td>
</tr>
<tr>
<td>I or II</td>
<td>17 (7.0%)</td>
</tr>
<tr>
<td>III</td>
<td>48 (19.8%)</td>
</tr>
<tr>
<td>IV</td>
<td>177 (73.1%)</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 [22.0, 30.0]</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.


P1809 THE EFFECTS OF ANTICOAGULANTS ON THE CLINICAL OUTCOME OF ENDOCUTOMIC TREATMENT

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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. This was a retrospective study based on medical records from three日本 hospitals between October 2013 and September 2016. PEB 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 endoscopic mucosal resection (EMR), and ESD. Patients were divided into two groups: those prescribed warfarin and patients prescribed DOAC. The main 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 unfractioned 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...
P1801 CLINICAL FEATURES OF DELAYED BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASMS IN HIGH-RISK AND LOW-RISK PATIENTS
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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 post-polypectomy 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 associated with antiplatelet or anticoagulant using data of gastric ESD procedures performed 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. Totally 118 patients had past cardiovascular history, and 50 patients treated by heparin ESD treatment may be achieved by physical barrier of mucoadhesive and physical barrier when this powder immediately forms mucoadhesive hydrogel after contacting blood or water. It shows high adhesiveness and persistency of gel on mucosal barrier.

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

References

P1810 ENDOSCOPIC ALLIGATION OF MUCOADHESIVE POWDER (NEXPOWDER®) FOR HEMOSTASIS IN PATIENTS WITH GASTROINTESTINAL BLEEDING
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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 persistency of gel on ulcer base.

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 catheter clogging during endoscopic application.

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 ulcers and 3 patients with other causes. 1) Success rates of hemostasis in acute bleeding were 96.5% (55/57) of NEXPOWDER® group, 2) Re-bleeding rates were 5.3% (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 rate of catheter clogging. In addition, a newly developed powder delivering device was delivered by newly developed spraying device through catheter clogging.

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

References

P1812 EFFICACY AND SAFETY OF FERRIC CARBOXYMALTOSE TREATMENT IN PATIENTS HOSPITALIZED FOR ACUTE GASTROINTESTINAL BLEEDING NOT ASSOCIATED WITH PORTAL HYPERTENSION
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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%). 5.5% 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 menemia, in 76.7% of cases. 25.0% 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% angiodysplasia of the colon. The mean Hb at admission was 9.0 g/dL (SD 2.2)

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and the mean of the lowest Hb during admission was 7.6 g/dL (SD 1.3). The most common total dose of FCM 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 FCM, with an increase of 4.2 g/dL (SD 2.6) 30 days after acute GIB. After FCM administration, the mean Hb increased significantly (p < 0.001) 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 increases Hb levels promptly and safely, especially in patients of advanced age and with associated comorbidities.

Disclosure of Interest: M. Cucala-Ramos: Mercedes Cucala is employee of Vifor Pharma. J.M. Reñé-Espinet: Reñé-Espinet, Josep Maria received research grant from Vifor Pharma. All other authors have declared no conflicts of interest.

Results: 431 patients have been included in this study. 24.8% of patients were ≥75 years old. 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 < 0.001); antiplatelets use 40.2% vs 20.1% (p < 0.001); oral anticoagulants use 20.6% vs 7.7% (p < 0.001); NSAIDs use 25.2% vs 33.6% (p = 0.133); smoking use 35.2% (p = 0.099); alcohol consumption 17.8% vs 45.3% (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 59.8% vs 58% (p = 0.832); hospitalization duration 8.4 ± 6.1 vs 7.8 ± 6.0 days (p = 0.382); rebleeding 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). Using multivariate analysis, three out 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), antiplatelet use (OR = 2.33, 95%CI:1.43–3.81, p = 0.001) and in-hospital mortality (OR = 2.09, 95%CI:1.27–4.47, p = 0.048).

Conclusion: The use of oral anticoagulants and antiplatelet was significantly higher in older patients, compared to the younger group. Elderly patients with peptic ulcer bleeding do not have a different rebleeding, need for surgery, need of transfusion or hospitalization mortality compared to younger patients. Mortality was higher in elderly patients due to more frequent association of comorbidities.

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

References
Aims & Methods: 

Patient data over a period of up to 12 months post discharge was collected to monitor their anaemia. A Student's T-Test was used to compare the average blood pressure testing. Dysfunction was considered to exist if at least two tests were positive. Gastric emptying time was evaluated by a standard 2-hour scintigraphic test using a solid meal. A half-time of longer than 110 minutes was chosen in the present study to further investigate patients with delayed gastric emptying. Serum ghrelin and motilin levels were tested by ELISA and circulating antimyenteric antibodies were tested by IFA.

Results: Forty-one patients (27 women), mean age 56.61 ± 11.79 years with AIG were included in the study. Overall, 22 (53.6%) patients showed delayed GE and 19 patients showed normal GE (GET ½: 241.19 ± 90 ± 19 mins, p = 0.001). Serum ghrelin and motilin levels of patients with delayed GE were significantly decreased compared to patients with normal GE, respectively (67.55 ± 8.81 vs 126.79 ± 25.81 pg/mL, p = 0.001 and 279.59 ± 111.12 vs 500.42 ± 155.95 pg/mL, p = 0.001). In all, 26 (63.4%) patients showed autonomic nervous system dysfunction and, 15 (35.5%) patients had normal autonomic nervous system test findings (total autonomic test score: 0.8 ± 0.25 vs 5.65 ± 1.74, p < 0.001). Serum ghrelin and motilin levels of patients with deranged autonomic nervous system function were significantly decreased compared to patients with normal autonomic nervous system function, respectively (78.03 ± 28.46 vs 127.79 ± 28.06 pg/mL, p < 0.001 and 316.92 ± 160.47 vs 490.20 ± 141.02 pg/mL, p = 0.001). In multivariate analysis, plasma motilin level was found as an independent factor that affected serum ghrelin level (β = 0.623, p = 0.019). However, serum ghrelin (r = 0.70, p < 0.001) levels were found as independent factors that affected plasma motilin level. We also investigated the presence of antimyenteric antibodies, however all the patients were negative by means of antimyenteric antibodies therefore, no further relationship was sought.

Conclusion: Mean fasting serum ghrelin and plasma motilin levels in autoimmune gastritis patients with delayed GE and deranged autonomic nerve function were significantly decreased. Nondiet-related factors and altered gut microbiota and circulating antimyenteric antibodies. These decreased serum ghrelin and plasma motilin levels in patients with autoimmune gastritis suggest a potential role for ghrelin and motilin in explaining the finding of the delayed gastric emptying in patients with autoimmune gastritis patients. We believe that these new observations supply more insight in the pathophysiology of autoimmune gastritis.

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

Reference


P1818 EFFECTS OF FAECAL MICROBIOTA TRANSPLANTATION (FMT) ON THE DREUDEMEN OF PATIENTS WITH IRITABLE BOWEL SYNDROME

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Introduction: The interaction between gut microbiota and enteric nervous cells alterations is believed to play an important role in the pathophysiology of irritable bowel syndrome (IBS). The densities of the duodenal enteroendocrine 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 enteroendocrine cells in the duodenum of patients with IBS. The study included 16 IBS patients according to Rome III criteria and four patients were excluded. The remaining patients (n = 12, 4 females and 8 males, age range 20-44 years) were divided according to the cause of IBS into PI-IBS patients (n = 6) and idiopathic IBS (n = 6) and received FMT donated from their relatives. The patients completed the IBS-symptom severity scoring system (IBS-SSS) before and 3 weeks after FMT. The patients underwent gastrosopies with biopsies taken from the descending part of the duodenum at baseline and 3 weeks after FMT. The biopsies were immunostained for neurogenin 3, Musashi 1 and all types of duodenal enteroendocrine cells, and quantified by computerized image analysis.

Results: The score of IBS symptoms as assessed by IBS-SSS was significantly reduced 3 weeks after (240.2 ± 33.60) compared to before (326.6 ± 22.3) receiving FMT, P = 0.0009. The scores of IBS-SSS before and 3 weeks after FMT for PI-IBS (n = 6) patients were 343.2 ± 27.5 and 220.4 ± 41, respectively (P = 0.025), and for idiopathic IBS are 352 ± 34 and 270.3 ± 54, respectively (P = 0.043). The densities of neurogenin 3, Musashi 1 and enteroendocrine cells in the duodenum of IBS patients before and 3 weeks after receiving FMT are presented in Table 1.

Conclusion: Fecal microbiota transplantation improved the symptoms in IBS patients, both PI and idiopathic. This improvement was associated with a change in the enteric nervous cells density. The changes in the enteroendocrine 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.

References


P1817 THE RELATIONS AMONG SERUM GHERELIN, MOTILIN, CIRCULATING ANTIMYENTERIC ANTIBODES AND GASTRIC EMPTYING IN AUTOINMUNE NERVOUS SYSTEM FUNCTION IN PATIENTS WITH AUTOIMMUNE GASTRITIS

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Introduction: Autoimmune gastritis (AIG) is an organ-specific autoimmune disease of the stomach marked by autoantibodies directed to hydrogen/potassium-ATPase and intrinsic factor. Gastric emptying of solids is delayed and autonomic nerve dysfunction is detected in patients with autoimmune gastritis. This may be a cause of symptoms and also there is a close relation between autonomic nerve dysfunction and delayed gastric emptying. As ghrelin and motilin are putative regulators of gastric emptying and, some autoimmune gastritis patients may have delayed gastric emptying, leading up autonomic gastrointestinal symptoms.

Aims & Methods: The aim of this study was to: (i) compare serum levels of ghrelin and motilin in patients with delayed normal gastric emptying and (ii) investigate whether circulating antimyenteric antibodies, serum levels of ghrelin and motilin are related on autonomic nervous system function and gastric emptying. Forty-one patients with AIG were included into this study. Autoimmune gastritis was diagnosed depending upon histopathological findings in gastric biopsy specimens. Non-invasive cardiovascular reflex tests were used in order to evaluate autonomic nervous system function. Sympathetic nerve function was evaluated with two tests: blood pressure response to standing and handgrip test. Parasympathetic nerve function was evaluated with three tests: valsava manoeuvre, heart rate response to deep breathing (E/I ratio) and orthostatic blood
P1819 THE EFFECT OF ESOPHAGEAL ACID EXPOSURE ON NMDA RECEPTOR SUBUNITS EXPRESSION AND D-SERINE IN PREFRONTAL CORTEX AND HIPPOCAMPUS
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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, P60H, P7H + P60H, P7 + P60H (P7-postnatal 7-15 days; P60-adult at postnatal 60 days; 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 and NR2B), and 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 + P60H and P7S + P60H group) and without adult treatment (A-, including P7H and P7H group), adult acid exposure (AH) increased the expression of NR1 (P = 0.052, P = 0.298), NR2B (P = 0.035, P = 0.045), and serum racemase (P = 0.022, 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 serum racemase in the P7S + P60H group was obviously higher than that of other groups (P = 0.008). See Table 1. In dorsal hippocampus, there was statistical significance on the level of c-fos between the P7S + P60H group and other groups (P = 0.008). Table 1. In PFC, the LC-MS analysis results that D-serine (AH vs A-: P = 0.000, AS vs A-: P = 0.042, AH vs AS: P = 0.081) and L-serine (AH vs A-: P = 0.000, AS vs A-: P = 0.015, AH 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></td>
<td>(vs P7S + P60H)</td>
<td>(vs P7S + P60H)</td>
</tr>
<tr>
<td>P7S</td>
<td>0.139 ± 0.131</td>
<td>0.035 ± 0.008</td>
</tr>
<tr>
<td></td>
<td>0.021</td>
<td></td>
</tr>
</tbody>
</table>

(continued)

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 transitory 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
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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. Antidepressants are used in the treatment of functional gastrointestinal disorders (FIGIDs) and showed a promising efficacy. Our study manifested that low-dose amantadine may be well tolerated and effective for general globus pharyngeus patients. 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, so that gastrointestinal symptoms as well as emotional well-being could be significantly improved. As we known, serotonin (5-hydroxtryptamine, 5-HT) is an important factor in gut function, playing key role in intestinal peristalsis, secretion, and sensory signaling in the brain-gut axis. 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 deletion (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>5.6 ± 0.5</td>
<td>5.3 ± 0.7</td>
<td>5.2 ± 0.8</td>
<td>4.8 ± 0.4</td>
<td>4.8 ± 0.4</td>
<td>0.42</td>
<td>0.42</td>
<td>0.2</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>0.98</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>53.2 ± 3.7</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 ± 7.2</td>
<td>94.8 ± 9.2</td>
<td>0.2</td>
<td>0.052</td>
<td>0.0066</td>
</tr>
<tr>
<td>Secretin</td>
<td>83.8 ± 5.7</td>
<td>89.7 ± 5.0</td>
<td>80 ± 5.8</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>65.3 ± 3.6</td>
<td>70.6 ± 3.2</td>
<td>60 ± 3.7</td>
<td>84 ± 7.1</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>

P7H + P60H 0.141 ± 0.083 0.034 0.036 ± 0.015 0.026
P7H + P60H 0.166 ± 0.066 0.119 0.035 ± 0.011 0.023
P7H + P60H 0.124 ± 0.031 0.014 0.040 ± 0.015 0.057
P7S + P60H 0.300 ± 0.149 0.083 ± 0.060 –
To the best of our knowledge, our findings are the first to establish an association between SLC6A4 gene polymorphism and globus pharyngeus. S. Hasak

P1821 DIAGNOSTIC YIELD OF PROVOCATIVE TESTS ON ESOPHAGAL HIGH RESOLUTION MANOMETRY (HRM)
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Introduction: Multiple rapid swallows (MRS) and rapid drink challenge (RDC) are provocative tests that can enhance the diagnostic value of esophageal HRM. The discriminatory characteristics of these provocative tests were evaluated in symptomatic patients referred for esophageal HRM.

Aims & Methods: Consecutive patients presenting for esophageal HRM were divided into a 2-month ‘pre-test’ population for provocative testing with MRS and RDC in addition to the standard manometric protocol. Integrated relaxation pressure (>15 mmHg) identified outflow obstruction; those without outflow obstruction were further analyzed utilizing software tools (IRP, distal contractile integral, DCI; intrabolus pressure, IBP) for peristaltic reserve (MRS or RDC DCI > mean DCI from wet swallows), and obstruction (IBP > 30 mmHg during MRS or RDC). All patients completed symptom questionnaires addressing reflux symptoms (GERD-Q), dysphagia (Vigo Dysphagia Questionnaire), and global symptom severity (GSS) on a 100 mm visual analog scale (VAS). Univariate and multivariate analyses were performed to evaluate overall yield (proportions with MRS/RDC findings not seen with the standard HRM protocol) and to assess association of presenting symptoms with results of MRS and RDC in patients without outflow obstruction.

Results: 149 patients (55.4 ± 1.2yr, 68% F) fulfilled inclusion criteria and had no outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on MRS, and 17 (12%) on RDC (p < 0.001), only 10 were concordant. Obstruction was noted in 16 (9.8%) on MRS, 8 (4.9%) on RDC (p = 0.09), and 5 were concordant; of these, only 2 patients had panesophageal compartmentalization of pressure, and only 1 had elevated IRP during provocative measures. Within inclusive esophageal motility, peristaltic reserve was noted in 59.3%. Within dysphagia presentations, obstruction was noted in 7.7%, and absent peristaltic reserve in 50%. Thus, the overall yield of MRS was 80.5%, and RDC 19.8% (p < 0.001). 131 patients had adequate questionnaire data. Findings on provocative tests did not predict presenting symptoms (GERD-Q or MDQ). Obstruction on RDC predicted higher GSS (odds ratio 5.56, 95% CI 1.04–29.72).

Conclusion: MRS identifies peristaltic reserve better than RDC and has higher overall clinical value. While both MRS and RDC identify outflow obstruction, only RDC obstruction predicts higher symptom burden. Neither MRS nor RDC findings correlate with presenting symptoms.

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

References

P1822 THE INCIDENCE AND PREVALENCE OF ACHALASIA IN ENGLAND AND TWO NATIONAL DATABASES
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Introduction: 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.

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.

Results: There were 10,509 and 711 new achalasia subjects in HES and THIN respectively. The incidence per 100,000 population in HES 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.

Table 1: Annual incidence and prevalence of achalasia

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence rate HES (per 100,000 population)</th>
<th>Incidence rate THIN (per 100,000 person years)</th>
<th>Prevalence THIN (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.733</td>
<td>1.62–1.85</td>
<td>1.06–1.81</td>
</tr>
<tr>
<td>2007</td>
<td>1.798</td>
<td>1.69–1.92</td>
<td>1.39–2.08</td>
</tr>
<tr>
<td>2008</td>
<td>1.798</td>
<td>1.68–1.91</td>
<td>1.21–1.96</td>
</tr>
<tr>
<td>2009</td>
<td>1.853</td>
<td>1.74–1.97</td>
<td>1.34–2.12</td>
</tr>
<tr>
<td>2010</td>
<td>2.015</td>
<td>1.90–2.14</td>
<td>1.31–2.09</td>
</tr>
<tr>
<td>2011</td>
<td>1.781</td>
<td>1.67–1.90</td>
<td>1.09–1.82</td>
</tr>
<tr>
<td>2012</td>
<td>2.032</td>
<td>1.91–2.16</td>
<td>1.20–1.96</td>
</tr>
<tr>
<td>2013</td>
<td>1.719</td>
<td>1.63–2.11</td>
<td>1.26–2.05</td>
</tr>
<tr>
<td>2014</td>
<td>2.421</td>
<td>2.29–2.56</td>
<td>1.12–1.91</td>
</tr>
<tr>
<td>2015</td>
<td>2.236</td>
<td>2.11–2.36</td>
<td>0.96–1.80</td>
</tr>
</tbody>
</table>

Conclusion: The incidence of oesophageal achalasia was approximately 15 to 20 per 100,000 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.

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

References

P1823 ACHALASIA DESPITE NORMAL INTEGRATED RELAXATION PRESSURE WITH 5ML WATER SWALLOWS
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2University College London, London/United Kingdom
3Department Of Gastroenterology, University College London Hospital, London/United Kingdom

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Introduction: Residual flow to bolus flow across the lower esophageal 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 5ml 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 single water swallows.

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-esophageal 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 had undergone therapy (3 myotomy, 3 pneumatic dilatations, 1 balloon dilation). Mean resting LES pressure was 4.6 ± 7.4 mmHg. In all patients, mean and 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-experi- enced 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 contraction in SA in patients with ulcerative colitis was 16.5 ± 8.9 cm. 8 patients had (so far) under- gone 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 0–1); (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/solids 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 TBE adjunctive test- ing 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 emptying used in the assessment of achalasia. Post-therapy reduc- tion 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 shape of Achalasia (SA) of the barium column may be more accurate than height, firstly, by looking for improvement in esophageal width that often occurs post-therapy, but also by correcting for artificially higher height values due to esophageal (longitudinal) contraction occurring during a single image. We aimed to compare the correla- tion of TBE outcome measures of height and SA with symptom improvement post-therapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent ther- apy between August 2015–6 and had TBE and Eckardt score (ES) performed at baseline and at least as well as within 6 months post-therapy. With TBE upright single images were acquired at 1.2 and 5 minutes following infusion of 100–200 mL of low-density barium sulfate. Barium height was measured between the gastro-esopha- geal 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 ≤3. On TBE, metrics of adequate emptying evaluated were i) post-therapy column height <5 cm, 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 com- pared 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 = 0.01) and mean 10 cm (52.7 ± 43.5 to 24.5 ± 26.8 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% reduc- tion in SA paralleled symptoms.

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.

P1825 THE TIMED BARIUM ESOPHAGRAM SURFACE AREA CORRELATES WITH SYMPTOM IMPROVEMENT BETTER THAN COLUMN HEIGHT FOLLOWING TREATMENT IN ACHALASIA
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4Department Of Gastroenterology, University Hospital of North Staffordshire, Stoke-on-Trent/UK

Introduction: The timed barium esophagram (TBE) is an objective measurement of esophageal emptying used in the assessment of achalasia. Post-therapy reduc- tion 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 shape of the barium column may be more accurate than height, firstly, by looking for improvement in esophageal width that often occurs post-therapy, but also by correcting for artificially higher height values due to esophageal (longitudinal) contraction occurring during a single image. We aimed to compare the correla- tion of TBE outcome measures of height and SA with symptom improvement post-therapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent ther- apy between August 2015–6 and had TBE and Eckardt score (ES) performed at baseline and at least as well as within 6 months post-therapy. With TBE upright single images were acquired at 1.2 and 5 minutes following infusion of 100–200 mL of low-density barium sulfate. Barium height was measured between the gastro-esopha- geal 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 ≤3. On TBE, metrics of adequate emptying evaluated were i) post-therapy column height <5 cm, 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 com- pared 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 = 0.01) and mean 10 cm (52.7 ± 43.5 to 24.5 ± 26.8 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% reduc- tion in SA paralleled symptoms.

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.

Disclosure of Interest: All authors have declared no conflicts of interest.
STOP. Gastric nutrients reduced significantly rectal gas evacuation (90 vs 100 Kcal/saline), increased the number of defecations (3.3±0.3 vs 2.3±0.3), and reduced the number of peristaltic waves by 0.3±0.1 vs 0.0±0.0 (p=0.001), which is equivalent to a 30% reduction in postprandial rectal motor activity. These findings are consistent with the hypothesis that nutrients can modulate intestinal motor activity, which may have implications for the management of chronic constipation and other gastrointestinal disorders.

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

P1828 SUBGROUP ANALYSES OF CLINICAL TRIALS ON A HERNAL MEDICINE IN FD, STW 5
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Introduction: Well-verified treatment options for the therapy of functional gastrointestinal disorders are rare and therefore gain high attention. One of the first to be considered as an alternative to standard treatments is STW 5 (Iberogast), for which more than five decades of therapeutic experience in human medicine have been collected. In clinical trials with STW 5 have proven compliance to modern standards for a proof of efficacy, now sub-group analyses were conducted. The analyses (ANOVA) were based on the original single patient data from the trials, including demographics and endpoints.

Results: As the primary outcome variable, the validated gastrointestinal symptom score (GIS) [1], as well as the therapeutic dose (3 × 20 drops/day) were identical 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 yrs) was in both groups 68.7 cm, BMI (27.0 resp. 22.2 kg/m²), the BMI (25.35 resp. 25.54), the gender distribution (67.5% vs 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. For the primary variable GIS the difference between placebo and verum after 28 days of treatment showed a highly significant (p < 0.001) 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.

Disclosure of Interest: J. Müller: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
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Reference

P1829 THE TREATMENT OF ACHALASIA IN PATIENTS WITH GESOPHAGEAL VARICES: AN INTERNATIONAL CASE SERIES
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Introduction: Achalasia is a chronic condition presenting with dysphagia, regurgitation, chest pain and/or weight loss. Management options include Heller’s myotomy, Botox, pneumatic dilation 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 median pre-therapy Eckardt score was 7 (IQR 6–9). 9/13 (69%) patients had a barium swallow and 12/13 (92%) had oesophageal physiology studies performed. There were 3 Type I, 6 Type II, 2 Type III achalasia and 2 with oesophage-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 transjugular intrahepatic portosystemic shunt (TIPSS). POEM before endoscopic dilation. All patients had symptomatic improvement with median Eckardt score post intervention = 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 recurrent dysphagia and 2 patients had erosive complications of bleeding or perforation; however both patients who had TIPSS had temporary hepatic decompenation.

Conclusion: This reports 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 undergone standard achalasia therapy,
**P1830 THE NATURAL HISTORY OF ACHALASIA: EVIDENCE OF A CONTINUUM—THE PATTERN-EVOLUTIVE STAGING THEORY**


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**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 6 months after surgical treatment. All conventional manometric tracings, before 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 283:238) 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 III 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 ever 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%). The only predictor of final outcome was the preoperative manometric pattern (IQR 12–56), the outcome of surgery was positive in 479 patients (91.7%). All patients (42) whose surgical treatment failed underwent one or more endoscopic pneumatic dilations using Rigiflex balloons (30, 35 or 40 mm). The overall success rate of the combined treatment (LHD plus endoscopic dilations where necessary) was 98%. All patients with pattern I preoperatively had the same pattern after LHD, whereas more than 50% of patients with pre-treatment pattern III had patterns I or II after surgery. There were no cases showing the same pattern after LHD, whereas more than 50% of patients with pre-treatment pattern II had patterns I or II after surgery. Conclusion: The data of this study strongly support the hypothesis/theory that the different manometric patterns of achalasia could represent different evolutionary stages of the disease - where pattern III 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.

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**P1831 ROLE OF A SERUM BIOMARKERS PANEL (GASTROESOPHAGEAL REFLUX DISEASE) IN NON-INVASIVE DIAGNOSIS OF UPPER GI DISEASE: DATA BY A PRIMARY CARE POPULATION OF NORTHEAST ITALY**

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**Introduction:** The development of non-invasive methods to detect the presence of H. pylori, and to estimate the extent and severity of gastritis, has 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 [Pepinogen-I (PG-I) 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 manometric categories: healthy achalasia (H), GER, HP, CAG, and PPI therapy. Conclusion: The combination of data on the levels of PG-I, PG-II, G-17, and HP IgG allow to diagnose different pathological conditions such as HP- and non HP-related gastritis, the appropriateness of PPI administration, GERD and CAG, a precancerous condition.

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

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**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 1 pre (%)</th>
<th>159 (100%)</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<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/encyclopaedia theory that the different manometric patterns of achalasia could represent different evolutionary stages of the disease - where pattern III 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.

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**P1832 SUSTAINED TREATMENT EFFECTS OF MENTHACARIN ON SYMPTOMS AND QUALITY OF LIFE IN PATIENTS WITH FUNCTIONAL DYSPEPSIA: FEW WEEKS AFTER THE END OF A 4-WEEK PLACEBO-CONTROLLED TRIAL**

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**Introduction:** Functional dyspepsia (FD) is one of the most common functional gastrointestinal disorders characterised by chronic or relapsing symptoms with an unknown 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. Functional dyspepsia (FD) is one of the most common functional gastrointestinal disorders characterised by chronic or relapsing symptoms with an unknown 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.

**Methods:** One hundred and forty-four 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 original randomization. The results of these 54 patients are reported here.

**Results:** Fifty-four of them participated in the optional follow-up phase and received Menthacarin (34) or placebo (20) for further 8 weeks according to original randomization. The results of these 54 patients are reported here. Outcomes were assessed using 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’ and ‘discomfort in upper abdomen’) were.

**Abstract No: P1831**

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**H** | **GER** | **HP** | **CAG** | **PPI**
---|---|---|---|---
Patients | 548 (21.2%) | 784 (30.4%) | 353 (13.7%) | 138 (5.3%) | 760 (29.4%) |
Sex (M:F) | 162/386 | 311/473 | 111/242 | 43/95 | 294/466 |
Age (yrs) | 39.6 | 40.3 | 30.4 | 24.8 | 25.8 |
PG1 (ug/L) | 79.1 ± 28.5 | 72.3 ± 23.9 | 92.2 ± 40.8 | 12.3 ± 9.7 | 167.4 ± 10.3 |
PG2 (ug/L) | 6.5 ± 3.1 | 6.3 ± 2.5 | 11.8 ± 6.9 | 6.9 ± 10.2 | 15.1 ± 11.0 |
G17 (pmol/L) | 2.8 ± 2.4 | 0.4 ± 0.3 | 4.8 ± 8.4 | 86.6 ± 99.7 | 12.2 ± 16.0 |
HP IgG (EU) | 8.9 ± 6.5 | 9.8 ± 6.8 | 85.2 ± 34.7 | 22.5 ± 23.7 | 24.5 ± 34.3 |

H vs GER p = 0.0001
H vs PPI p = 0.0001
H vs PPI p = 0.0001
abdomen, ‘discomfort in upper abdomen’, ‘cramps in upper abdomen’ and ‘burning 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 during placebo treatment. 1 Menthacarin 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 Menhacarin 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.

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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); urea breath test and bacterial overgrowth were performed. All authors have declared no conflicts of interest.

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

Abstract No: P1833

PI834 IMPROVEMENT OF APPROPRIATENESS OF PROTON PUMP INHIBITOR (PPI)-THERAPY PRESCRIPTION WITH USE OF SEROLOGICAL MARKERS (GASTRO PANEL) IN A PRIMARY CARE POPULATION

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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); urea breath test and bacterial overgrowth were performed. All authors have declared no conflicts of interest.

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

Abstract No: P1833

PI835 APPROPRIATE USE OF PPI IN THE ELDERLY: EVALUATION OF ACID SECRETION AND ATROPHIC GASTRITIS ON DUODENAL BIOPSY SPECIMENS OF A NON-SELECTIVE POPULATION

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Introduction: Gastric acid secretion is believed to decrease in the aging stomach, but the number of elderly patients on proton pump inhibitor (PPI) therapy is

Table: Gastric Function status

<table>
<thead>
<tr>
<th>Gastric Function status</th>
<th>G-17</th>
<th>PGI-1</th>
<th>PGI-2</th>
<th>PGI-3</th>
<th>PGI-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG-I (μg/L) mean±SD</td>
<td>137.0±98–84.7</td>
<td>11.7±8–21.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG-II (μg/L) mean±SD</td>
<td>194.5±35–121.1</td>
<td>22.1±7–17.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG-III (μg/L) mean±SD</td>
<td>127.1±31–8.3</td>
<td>3.1±7–1.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG-IV (μg/L) mean±SD</td>
<td>91.7±39–40.9</td>
<td>0.38±0–0.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG-V (μg/L) mean±SD</td>
<td>16.6±14–18</td>
<td>70.3±55–52.2</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
increasing. Pepsinogen I (PGI) <30 μg/L, PGI/PGII <3 and gastrin-17 (G17) >10 μmol/L are non-invasive serological markers to surrogate 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 progressively 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), 97 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 ± 1 μmol/L; IgG: < 30 EU).

Results: In the first group (age 70-79), 18.2% of the subjects showed H. pylori infection (PGI >30 μg/L, G17 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. In 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 helpful 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 REFUX HYPERSENSITIVITY-A PILOT STUDY BASED ON SCL-90 QUESTIONNAIRE AND 24 HOUR PH-IMPEDANCE MONITORING

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Introduction: Reflux hyper sensitivity (RHV) was lately defined as a functional esophageal disorder by the 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 RHV. 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 manometry was evaluated in 12/15 volunteers. The patients with normal esophageal mucosal and normal reflux but positive symptom index (SI) or symptom association probability (SAP) were diagnosed as RHV. 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, RHV and FH.

Results: Total 231 patients were enrolled. 107 were NERD (48.25 ± 8.0, M:F = 55:52), 92 were FH (48.30 ± 8.7, M:F = 90:4), 28 HVs (47.21 ± 9.0, M:F = 10:18) 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 with normal esophageal mucosal and normal reflux but positive symptom index (SI) or symptom association probability (SAP) were diagnosed as RHV. 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, RHV and FH.

Conclusion: Reflux hyper sensitivity (RHV) is a distinct functional esophageal disorder. The role of psychological factors in the pathogenesis of RHV needs to be studied furtherly.

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

P1837 HIGH-RESOLUTION ESOPHAGEAL MANOMETRY: EVALUATION OF NEW SYSTEMS FOR THE ACQUISITION AND ANALYSIS

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Introduction: High-Resolution Manometry (HRM) has recently become 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 Medtronic 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.: DCl and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new motility disorders 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.
ESOPHAGEAL PERISTALSIS IN PATIENTS WITH PROTON PUMP INHIBITOR RESPONSE EOSINOPHILIC ESOSINOPHILIA

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9Dipartimento Di Scienze Mediche, Università degli Studi di Milano Diplo. di Gastroenterologia, Milan/Italy
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Introduction: Proton pump inhibition-response esophageal eosinophilia (PPI-REE) is a condition characterised by symptoms of esophageal dysfunction 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 esophagegastic junction (EGJ). Data on the effect of PPIs in improving these motor abnormalities are lacking.

Aims & Methods: The aim of this study was to assess the diagnostic and therapeutic management of patients diagnosed with eosinophilic esophagitis (EoE). In this study we measured systemic eosinophilia and, then, 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 median diagnostic delay of 6.5 years (IQR, 2-14 years). The incidence of patients newly diagnosed with EoE increased steadily over a period of 11 years. Criteria for the microscopic diagnosis of EoE varied between pathologists in each hospital. Initial treatment included topical corticosteroids (30.3%), proton pump inhibitors (PPIs) (29.4%) or a combination of both (10.1%). A follow-up endoscopy was performed in 40.3% of patients. Remarkably, the diagnostic entity PPI-responsive EoE was only used in one center, follow-up endoscopy was performed in less than half of patients and all pathologists used different criteria for the microscopic diagnosis of EoE. Moreover, varying therapeutic strategies were utilized in the participating centers.

Conclusions: In most PPI-REE patients, PPI therapy restores the impairment of esophageal peristalsis, thus favouring the return to a normal motility pattern. This finding, paralleled with the presence of at least 15 eos/hpf on oesophageal biopsies at mid/proximal esophagus, which is presented by esophageal dysfunction und histologically characterized by a predominant eosinophilic inflammation. EoE is mainly found in children and adults: a systematic review and consensus recommendations for diagnosis and treatment. Gastroenterology 2007;133: 1342-63.


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

References

P1838 PROTON PUMP INHIBITOR THERAPY IMPROVES ESOPHAGEAL SYMPTOMS BY RESTORING A NORMAL EOSINOPHILIC ESOPHAGITIS IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE EOSINOPHILIC ESOPHINPHILIA

were collected. Standard statistical analyses were performed to summarize the patient characteristics.

Initial treatment after diagnosis EoE

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total, n (%)</th>
<th>AC 1, n (%)</th>
<th>AC 2, n (%)</th>
<th>Non AC 1, n (%)</th>
<th>Non AC 2, n (%)</th>
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<tbody>
<tr>
<td>TCS</td>
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<td>5 (18.5)</td>
<td>11 (44.0)</td>
<td>3 (16.7)</td>
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<tr>
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<td>1 (1.7)</td>
<td>1 (3.7)</td>
<td>1 (4.0)</td>
<td></td>
</tr>
<tr>
<td>TCS þ dilation</td>
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<td>0</td>
<td>1 (2.0)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Diet</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>24 (20.2)</td>
<td>9 (18.4)</td>
<td>8 (29.6)</td>
<td>4 (16.0)</td>
<td>3 (16.7)</td>
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<td>6 (5.0)</td>
<td>1 (2.0)</td>
<td>2 (7.4)</td>
<td>1 (4.0)</td>
<td>2 (11.1)</td>
</tr>
</tbody>
</table>

Results: In total, 119 patients were diagnosed with EoE and included in this study. The median age at onset of symptoms was 29 years (IQR, 15-42) and the median age at diagnosis was 38 years (IQR, 23-51 years), leading to a median diagnostic delay of 6.5 years (IQR, 2-14 years). The incidence of patients newly diagnosed with EoE increased steadily over a period of 11 years. Criteria for the microscopic diagnosis of EoE varied between pathologists in each hospital. Initial treatment included topical corticosteroids (30.3%), proton pump inhibitors (PPIs) (29.4%) or a combination of both (10.1%). A follow-up endoscopy was performed in 40.3% of patients. Remarkably, the diagnostic entity PPI-responsive EoE was only used in one center, follow-up endoscopy was performed in less than half of patients and all pathologists used different criteria for the microscopic diagnosis of EoE. Moreover, varying therapeutic strategies were utilized in the participating centers.

Conclusions: Diagnostic and therapeutic discrepancies between daily clinical practice and recommendations for diagnosis and treatment include a need for prospective studies to further improve the diagnostic and therapeutic management of EoE.

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

References

P1840 IGG4 EXPRESSION IS ELEVATED IN PATIENTS WITH EOSINOPHILIC ESOPHAGITIS COMPARED TO PATIENTS WITH GASTROESOPHAGEAL REFUX DISEASE

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Introduction: Eosinophilic Esophagitis (EoE) is a chronic immune disease of the esophageal mucosa with histologically characterized by a predominant eosinophilic inflammation. EoE is mainly found in patients with atopic conditions. However, recently an association with IgG4 but not with IgE has been reported. Gastroesophageal reflux disease (GERD) is the most important differential diagnosis of EoE. In this study we measured systemic serum IgG4 and IgE levels of EoE patients before and after a topic steroid therapy, correlated them to esophageal IgG4-positive plasma cells and compared them to GERD patients.

Cases and Methods: The aim of this study was to compare the diagnostic and therapeutic management of patients diagnosed with eosinophilic esophagitis (EoE) in daily clinical practice and whether this was according to guidelines and recommendations. A population-based, retrospective cohort study was conducted using data from the Dutch national pathology registry (PALGA), medical records, and telephone interviews of patients diagnosed with EoE in two academic and two non-academic hospitals in the period 2004–2014. Data regarding demographics, clinical manifestations, endoscopic results, histologic samples and therapeutic strategies were collected. Standard statistical analyses were performed to summarize the patient characteristics.

Initial treatment after diagnosis EoE

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total, n (%)</th>
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<tr>
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<td>2 (7.4)</td>
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<td>TCS þ dilation</td>
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<td>Diet</td>
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<tr>
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P1841 SYSTEMATIC REVIEW: HEALTH-RELATED QUALITY OF LIFE IN CHILDREN AND ADULTS WITH EOSINOPHILIC ESOPHAGITIS: MEASURE INSTRUMENTS AND DETERMINANT FACTORS
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Introduction: Measurement of Health-related quality of life (HRQoL) with generic or specific instruments has been increasingly used in patients suffering from Esophagus to support both research and clinical care. Generic instruments aim at measuring the overall HRQoL of patients across several conditions, being useful for comparisons across different countries and evaluating health economics outcomes. Disease-specific instruments assess domains specific to a given disease and are considered more sensitive to changes in the patient’s health state. An up-to-date systematic review will provide a useful resource for researchers and HRQoL specialists to ensure they can select an appropriate HRQoL measure for patients in their practice in order to identify correctable factors determining an impaired perception and to improve treatment outcomes.

Aims & Methods: We aim to systematically review the current HRQoL measures for patients with Esophagus and to appraise their measurement properties using a robust evaluation methodology checklist. We also sought to identify disease-specific determinant factors for HRQoL in children and adults with Esophagus, and the effect of interventions and treatments on HRQoL. A search strategy was used to identify and retrieve relevant studies on the relationship between HRQoL and Esophagus in children and adults. This systematic literature search was performed in 5 major databases (PubMed, EMBASE, Scopus, PsycINFO and Web of Science) for the period up to March 2017. The measurement properties of each specific Esophagus instrument identified and their performance properties were assessed using the quality properties checklist proposed by Terwee et al. Levels of the HRQoL measure establishment or use in literature: we used Cohen’s criteria. Cohort studies, case series and case reports were evaluated for the risk of bias with the aid of the Joanna Briggs Institute critical appraisal checklist. A descriptive summary with data tables was produced to summarize the literature. Quantitative pooling of data was not meaningful so a narrative synthesis was used.

Results: Of the 596 references identified, data was collected from 34 studies including 1,182 individual patients. Three disease-specific HRQoL measures in Esophagus covering different aspects of patients’ lives and developed in English were scored positive regarding measurement properties. Respectively, the PedsQL inventory (including parent and child report forms) and the Peds-QoL Esophagus module were the generic and specific instruments respectively used in children, while the SF-36 and EuroQoL-5D were the most used questionnaires in adults. Esophagus affect children and adolescents, which manifests in the normal development of their daily activities, their physical health and their mental status, with parents generally underestimating 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. Esophagus impact on a number of domains including frustration levels did not show a significant difference in the overall PedsQL score were found in adult patients managed with dietary or pharmaceutical therapy, with specific treatment modalities having a negligible influence on overall Esophagus specific QoL. Symptoms scores determined exercised an increased impact on swallowing anxiety and emotional impact subscales. Female gender negatively influenced QoL scores. Disease activity, as expressed by endoscopic findings, were also significant determinants of QoL. A higher educational level was also found to be a strong determinant for a worse QoL.

Aims & Methods: Serum levels of IgG4 and IgE of 19 Esophagus patients were measured before and after therapy, showing a trend towards a decrease. Biopsies were taken from the esophagus before and after therapy for histological and immunohistochemical evaluation. 14 patients with Esophagus without histological proof of eosinophilic granulocyte infiltration were taken as a control group. Serum levels of IgG4 of Esophagus patients were measured before and after 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 Esophagus without histological proof of eosinophilic granulocyte infiltration were taken as control group. Results: Serum IgG4 levels of Esophagus patients were significantly higher than in GERD patients (mean: 121.0 mg/dL vs. 71.2 mg/dL, p = 0.034). In contrast, no significant difference of IgG4 levels in Esophagus and GERD patients was observed. In Esophagus patients with eosinophilic granulocyte infiltration in histology was decreased at a significant level after topic steroid therapy (mean: 51.9 eosinophils/high power field (hpf) vs. 6.4 eosinophils/hpf < 0.001). After therapy lower levels of IgG4 serum levels could be measured (mean: 121.0 mg/dL vs. 104.2 mg/dL). PPI therapy did not show a significant difference. The eosinophi- geal biopsies of Esophagus patients showed a high number of IgG4-positive plasma cells (mean expression of 27.4 IgG4-positive plasma cells of 46.4 stomal plasma cells hpf).

Conclusion: Esophagus patients show higher systemic IgG4- but not IgE serum levels compared to GERD patients. These elevated levels normalize under effective topic steroid therapy. Additionally high local expression of IgG4-positive plasma cells can be seen in Esophagus patients. These findings might be further evidence for a possible IgG4-association of Esophagus.

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

P1842 TREATMENT SATISFACTION OF ADULT EOSINOPHILIC ESOPHAGITIS PATIENTS
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Introduction: Available treatment options for adult Esophagus patients include drugs (proton-pump inhibitors [PPI], swallowed topical corticosteroids [STC]), food elimination diets, and esophageal dilation. Knowledge about patients’ view regarding the different therapeutic options is very limited.

Aims & Methods: We aimed to systematically assess adult Esophagus patients’ satisfaction with different Esophagus-specific treatment modalities. We first created a questionnaire that included items that queried general demographic characteristics (7 items), Esophagus-specific patient history and presence of atopic disease (8 items), past and present Esophagus-specific therapy (9 items), concomitant medication use (7 items), important considerations for choice of therapy (2 items), as well as treatment satisfaction with various therapies recalled over a period of 12 months (assessed using the validated “Treatment Satisfaction Questionnaire for Medication” [TSQM], 52 items). The TSQM consists of 14 items falling into 4 scales: effectiveness (3 items), side effects (5 items), convenience (3 items), and overall satisfaction (3 items). The score for each TSQM scale ranges from 0 (dissatisfied) to 100 (satisfied). In analogy with other conditions, a score above 66.8 and 83.3 identifies patients that are ‘satisfied’ and ‘very satisfied’ with therapy, respectiv- 1

Results: Patient response rate was 73.5% (108/147). Mean patient age at inclu- sion was 54±15.9 years, 85/108 (78.8%) of patients were male, and mean disease duration (from the time of diagnosis to the time of enrollment) was 6.8±5.1 years. In the last 12 months, 11.1%, 48.1%, 10.2%, and 28.7% of patients reported to have suffered from symptoms of asthma, rhinoconjunctivitis, eczema, and food allergy, respectively. In the last 12 months, 25.0%, 3.7%, 77.8%, 1.9%, 19.4%, and 13.0% were treated with PPI, STC in the form of a syrup, STC in the form of a powder, STC in a form of a spray, diet, and esophageal dilation, respectively (37.0% patients received more than one treat- ment). EoE patients appear to be ‘satisfied’ with PPI, STC, and dietary therapy and are considered more sensitive to changes in the patient’s health state. The TSQM scales scores as well average TSQM values for patients on PPI, STC, and diet are shown in Table 1.

Conclusion: Adult Esophagus patients consider both effect of medication on symptoms as well as inflammation as most important criteria, when choosing EoE therapy. Esophagus patients appear to be ‘satisfied’ with PPI, STC, and dietary therapy and are considered more sensitive to changes in the patient’s health state. The TSQM scales scores as well average TSQM values for patients on PPI, STC, and diet are shown in Table 1.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: For technical reasons, the histologic 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, endemic features, and symptoms, and evaluate the diagnostic impact of subepithelial eosinophilic 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 0.75%, 5%, 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 eosinophilic 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.

P1844 GASTROESOPHAGEAL REFUX DISEASE PATIENTS REFUXATE TYPE INFLUENCE ON MACROPHAGE PHENOTYPE

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2Pathological Anatomy Department, First Moscow State Sechenov Medical University (Sechenov University)/Moscow/Russian Federation
3Department Of Gastroenterology, director Of The Clinic, Sechenov University, Moscow/Russian Federation
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Introduction: The modern understanding of gastroesophageal reflux disease (GERD) pathogenesis includes identification in the subepithelial layer of eosinophilic infiltration (median peak count of 20 eosinophils/hpf [IQR 10–51]), eosinophil degranulation (43%), fibrosis (82%), and lymphoid follicles (56%). The peak intraepithelial eosinophil counts were higher, identical, and lower when compared to 0.75%, 5%, 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 eosinophilic 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 EOSPHAGEAL MUCOSAL AFFERENT NERVES ARE MORE SUPERFICIAL IN PATIENTS WITH NERD THAN IN HEALTHY VOLUNTEERS AND PATIENTS WITH BARRETT’S EOSPHAGEUS

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2Centre For Tumour Biology, Barcs Cancer Institute, Barths and the London School of Medicine, Queen Mary University, London/United Kingdom
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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 hypersensitivity are inadequate to explain this discordance.

Aims & Methods: To test the hypothesis that differences in epithelial nasal nerve fiber densities 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 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 21.5 [16.1–27.5] respectively, p = 0.015). Mucosal innervation is significantly more superficial in NERD both distally (9.5 cell layers [1.5–13.3], p < 0.0001 vs both BE and HV) and proximally (5.0 [2.5–9.3], p = 0.0008 vs HV).

Conclusion: The acid hypersensitivity seen in NERD may be partially explained by the increased proximity of mucosal afferents to the esophageal lumen, and therefore greater exposure to noxious substances in reflux. Conversely, the relative acid hypo-sensitiveness in BE may be attributed to the deeper location of mucosal sensory receptors.
Belching is a commonly occurring symptom in patients with gastroesophageal reflux disease (GERD). Belching may reflect reflux. It is unknown whether GERD patients with isolated pathological upright reflux (UP) have belching patterns that are different from GERD patients with pathological bisphosphonate reflux.

**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 examined. 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-association analysis was performed to assess a relationship between reported symptoms and reflux episodes.

**Results:** BIP patients showed higher acid reflux time (17% ± 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 ± 6 vs. 12.4 ± 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 reported 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 bisphosphonate 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.

**References**


Introduction: Menthol is widely used as a food flavourant. In general, it is considered safe, but some reports indicate a possible pro-inflammatory effect on the upper respiratory tract.

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 contractile components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry, with a thin silicon tube attached, was 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: 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 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. Paired t-test 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). Averages of 5 ml (swallows 5 [1.8-0.3], respectively, p = NS, or for the pharyngeal acid exposure time (45 ± 14 s vs. 88 ± 42 s, respectively, p = NS). We speculate that more acidic LPR events (pH drop to < 5.5) might be of greater relevance. However, no significant difference was found between the benign positive and negative patients either in the number of LPR events (10–2 vs. 1–1, respectively, p = NS), or the pharyngeal acid exposure time (16 ± 6 s vs. 42 ± 36 s, 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 using during 24 h 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.

Reference

P1850 ANALYSIS OF THE RELATIONSHIP BETWEEN GLOBUS PERCEPTION AND ACIDIC LARYNGOPHARYNGEAL REFLUX BY DUAL PHARYNGEAL AND ESOPHAGEAL 24-HOUR PH/IMPEDANCE MONITORING
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Introduction: Globus is considered to be related to the gastroesophageal reflux disease/laryngopharyngeal reflux (LPR). However, a substantial part of subjectiveness and self-perception of globus sensation which is impossible to measure objectively makes this symptom difficult to study. Visceral hypersensitivity 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 pH/impedance monitoring 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 > 13) 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 level of pH on the pH drop to < 5.5 and < 5.0. For these pH levels we determined pharyngeal acid exposure time calculated as cumulative time of pharyngeal reflux below that 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 (tick 4–5 in the RSI) or globus negative (tick 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 question about globus in the RSI there was a 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 (11.1%, respectively, p = NS). Therefore, we 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 the LPR events (92±6–5.5 vs. 88±4.2, respectively, p = NS) or for the pharyngeal acid exposure time (45±14 s vs. 88±42 s, respectively, p = NS). We speculated that more acidic LPR events (pH drop to < 5) might be of greater relevance. However, no significant difference was found between the globus positive and negative patients either in the number of these LPR events (10–2 vs. 1–1, respectively, p = NS), or the pharyngeal acid exposure time (16 ± 6 s vs. 42 ± 36 s, 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 using during 24 h 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.

P1851 GASTRIN-17 AS A NON-INVASIVE MARKER FOR GERD: A PROSPECTIVE STUDY ON SAMPLE OF 777 CONSECUTIVE PATIENTS
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Introduction: Due to a negative feed-back mechanism, gastrin-17 (G17) can be considered a marker of acid secretion: the lower G17 values, the higher gastric acid secretion. Some studies suggest serum G17 low levels as a marker of acid-related conditions, like Gastroesophageal Reflux Disease (GERD). Aim of the study was to evaluate the property of low levels of G17 in GERD diagnosis, compared in clinical and instrumental GERD gold-standards (typical symptoms, esophagitis at endoscopy, a positive Demeester score at pH-metry).

Aims & Methods: We enrolled 777 consecutive patients (M 369; mean age 55.3 ± 11.2 years) affected by upper gastrointestinal (GI) troubles, showing low levels of serum G17 (BioHit Oyj, Finland; mean values: 1–9 pmol/l). Exclusion criteria included: current Proton Pump Inhibitors, previous history of surgery, neoplasms, current Helicobacter Pylori infection. Both typical, atypical and extra esophageal GERD symptoms, according with Montreal Classification were collected. All patients underwent upper GI endoscopy and esophagitis was classified according with Los Angeles criteria. In a subgroup of 221 patients (M 103; mean age = 55.2 ± 11.2 years) with Non Erosive Reflux Disease (NERD) a 24 h hours pH-metry was performed using the Demeester score of 14 to establish a condition of acid reflux.

Results: Typical symptoms (heartburn and/or regurgitation) have been detected in 243 patients, being in 479 one heartburn the prevalent symptom and in 68 ones regurgitation. Extra-esophageal symptoms (mainly chronic cough) were present in 303 patients. At the endoscopic evaluation, 349 subjects showed a picture of esophagitis with different degrees of severity of Los Angeles score. One hundred and seventy out 221 patients which underwent 24 h pH-metry showed a positive Demeester score for acid gastroesophageal reflux. Summarizing, 700 out of the 777 subjects included in the study showed at least one of the criteria (clinical, endoscopical or functional) accepted to support the diagnosis of GERD.

Conclusion: By using low levels of G17 as a non-invasive marker of GERD, in more than 90% (700 out of 777 pts) the diagnosis of reflux disease was confirmed, according with the current clinical or instrumental gold standard criteria, suggesting the use of this simple method to identify subjects with suspected GERD almost when typical symptoms are lacking or a NERD picture is find.

Disclosure of Interest: All authors have declared no conflicts of interest.
Hiatal hernia (HRM) 33 (97.1%) 34 (70.8%) 16 (37.2%) 0
5
Hiatal hernia (X-ray) 34 (100%) 36 (75%) 17 (39.5%) 1 (3.8%)
5
Reflux number 77.8
/C6
/C6
/C6
5

Table 1:
are reported in Table I.

The mean length of HH during endoscopy (5.4
/p value

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.

P1853 HIGH RESOLUTION MANOMETRY CAN BE PREDICTIVE OF GERD AS CONFIRMED BY IMPEDANCE-PH MONITORING: DEVELOPMENT AND INTERNAL VALIDATION OF A PREDICTIVE MODEL

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Introduction: Sliding hiatal hernia (HH) is a frequent diagnosis during upper endoscopy (UE) in patients with GERD-related symptoms. Recently, high resolution manometry (HRM) allowed an accurate evaluation of the esophago-gastric junction (EGJ) and its sub-types (Chicago Classification V3.0; CCv3). Few data are available comparing the diagnostic accuracy of HRM and UE to detect HH.

Aims & Methods: 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 MII-pH to investigate GERD. All tests were performed previous a 20-day wash-out from pH (MII-pH) monitoring. We enrolled consecutive patients with heartburn and HH.

Methodology: 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 MII-pH to investigate GERD. All tests were performed previous a 20-day wash-out from pH (MII-pH) monitoring. We enrolled consecutive patients with heartburn and HH.

Results: We evaluated 151 patients (94 females) with mean age of 56.2 yrs. EE was diagnosed in 34 patients (22.5%). MII-pH allowed to subgroup patients in: 48 (31.8%) NERD, 43 (28.3%) HE, and 26 (17.2%) HH. As expected, MII-pH showed a higher AET in HRM and NERD group (p < 0.001). HH was normal in 131/151 (86.6%) and 20/151 (13.2%) had ineffective motility. HH was confirmed in 95% (HRM 55%, p < 0.05) with HRM and in 88/151 patients (barium 58.3% vs UE 100%; p < 0.05) with barium X-ray. The mean length of HH during endoscopy (5.4 cm) was reported greater than that during HRM (3.9 cm) and Barium X-ray (4 cm) (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>HRM variable</th>
<th>GERD group</th>
<th>No GERD group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRM</td>
<td>n ( = 47)</td>
<td>n ( = 21)</td>
<td></td>
</tr>
<tr>
<td>EGG pressure (mean)</td>
<td>25.86±11.8</td>
<td>30.3±12.6</td>
<td>33.1±13.7</td>
</tr>
<tr>
<td>DCI</td>
<td>1001±683</td>
<td>1431±1652</td>
<td>757±1765</td>
</tr>
<tr>
<td>IRP</td>
<td>11.8±5.1</td>
<td>12.6±7.2</td>
<td>11.8±7.4</td>
</tr>
<tr>
<td>DL</td>
<td>6.4±6.1</td>
<td>6.46±1.4</td>
<td>6.46±1.4</td>
</tr>
<tr>
<td>AET (%)</td>
<td>7.7±2.9</td>
<td>5.1±2.3</td>
<td>2.7±1.4</td>
</tr>
<tr>
<td>Reflex number</td>
<td>77.8±23.7</td>
<td>66.9±31.4</td>
<td>24.6±9.1</td>
</tr>
<tr>
<td>Hiatal hernia (HRM)</td>
<td>33 (97.1%)</td>
<td>34 (70.8%)</td>
<td>17 (37.2%)</td>
</tr>
<tr>
<td>Hiatal hernia (X-ray)</td>
<td>34 (100%)</td>
<td>36 (75%)</td>
<td>17 (39.5%)</td>
</tr>
</tbody>
</table>

Conclusion: Our data indicate that HRM can be useful in detecting GERD, with our predictive model allowing a high level of suspicion for reflux disease. In particular the role of the EGJ-CI in GERD pathophysiology has been...
P1854 GORD PATIENTS ARE FREQUENTLY DISSATISFIED ON LONG-TERM PPI RECOMMENDATION (REVEALING THE REASONS) AND MANAGEMENT IN ROUTINE CLINICAL CARE (LOPA II STUDY)

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Introduction: Randomized controlled trials report about 30% of GORD patients complain of bothersome remaining symptoms (heartburn, regurgitation) despite PPI. The LOPA (Lost Patients) 1 Study of 333 GORD patients seen in general practice revealed 46% of patients experienced heartburn or regurgitation symp- toms at least twice per week despite PPI. A total of 20% were dissatisfied with their treatment. Few patients had received specific GORD diagnostics or recom- mended 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 symp- toms 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 cur- rent medication treatment. “Lost Patients” were defined as those with a satisfac- tion score of 1 or 2 on a 5-point Likert scale (1: very dissatisfied; 2: dissatisfied), GerdQ score at least 8, and have not previously received specialized GORD diagnostics.

Results: 510 consecutive patient responses were collected within one year. Patients suffered from GORD an average of 9.6 years and prescribed PPI therapy for an average duration of 7.9 years. 70% were dissatisfied or very dissatisfied on their current medication (GerdQ score of 1 or 2). 83% reported heartburn or regurgita- tion 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 for dissatisfaction. In addition, 31% cited concerns about long-term use of drugs and 27% the need for daily medication. 92% of patients had received an upper endoscopy, 12% had a prior pH-metry, 7% manometry, and 9% received prior surgical consult for GORD. Of patients who never received a surgical consult, 48% were not aware of any surgical anti-reflux meth- ods, 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 alter- natives. 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.

P1856 DIET IS MORE EFFECTIVE THAN ANTACIDS IN RELIEVING REFUX SYMPTOMS IN MILD GERD

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Introduction: Gastroesophageal reflux disease (GERD) is a common disorder commonly regarded as a gut disorder and a result of overactivity of the lower esophageal sphincter (LES), whose symptoms are related to food intake. Awareness of health care costs and potential side effects of long-term acid suppression has increased the attention in non-pharmacologic treatment for alleviating reflux symptoms.

Aims & Methods: The aim of our prospective study was to evaluate the non- inferiority of a controlled diet compared to antacid compounds in relieving reflux symptoms in patients suffering from mild GERD. We considered 500 consecutive patients referred to the Division of Allergy and Clinical Immunology of Azienda-ISTITUZIONE IRCCS San Martino di Genova for gastrointestinal symptoms associated to food intake. Patients with a clinical and instrumental diagnosis of food allergy, food intolerance, Irritable Bowel Syndrome (IBS) and Small intestinal Bacterial Overgrowth (SIBO) were excluded. Patients with a diagnosis of GERD based on clinical history represented our study population. Basal metabolic rate and cal- ories needs of patients was assessed by means of Harry-Benedict equation cor- rected for their physical activity. Patients were asked to take antacids for one month. Subsequently patients discontinued medication consumption and fol- lowed an elimination diet of food commonly associated to eliciting reflux symp- toms, based on their calories need. Efficacy of the two treatments was evaluated by means of a validated symptomatic questionnaire (RDQ administered at base- line, 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 (140), 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; 132/F:107M; no erosive reflux disease) and were included in our interventional prospective study. Among them, 10 patients (4.2%) were excluded for protocol violation. Basal metabolic rate and calories needs of patients was assessed by means of Harry-Benedict equation corrected for their physical activity. Patients were asked to take antacids for one month. Subsequently patients discontinued medication consumption and fol- lowed an elimination diet of food commonly associated to eliciting reflux symp- toms, based on their calories need. Efficacy of the two treatments was evaluated by means of a validated symptomatic questionnaire (RDQ administered at base- line, 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.

Conclusion: A structured diet regimen, tailored on the metabolic need of the patients, appears more effective than antacids alone in relieving reflux symptoms in patients with mild GERD. Further controlled studies are mandatory to con- firm these preliminary data.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Safety and efficacy of electrical stimulation of the lower oesophageal sphincter (LOS) using the EndoStim® LOS Stimulation System (Nijmegen, The Netherlands) has been demonstrated in clinical trials up to >5 years. Data on outcomes in routine clinical practice is growing.

Aims & Methods: An ongoing, prospective international multicenter web-based registry is collecting data in patients with disruptive GORD symptoms, treated with ES-LOS in clinical practice. Data is collected at baseline and at routine follow-ups for 5 years. Demographics, adverse events, GORD symptoms, GORD health related quality of life (GORD-HRQL) scores, use of proton pump inhibitors (PPIs) and physiological data (oesophageal pH/manometry) are collected when available.

Results: 180 patients at 13 sites in Europe and Latin America have been enrolled. Follow-up data up to 2 years is available. Median (IQR) age at the time of implant was 51 (41–60), 57% were male. All patients were taking prescription PPI at baseline. At their last follow-up between 6 and 24 months post op, 70% (84/121) were completely off PPI (p < 0.001). Median (IQR) composite GORD-HRQL score improved from 23 (17–29) preoperatively to 8 (4–15) at 6 months, 7 (2–12) at 12 months, and 5 (4–15) at 24 months (p < 0.001 at all time points, n = 154, 121, 66, 33 at baseline, M6, M12, M24, respectively). Oesophageal pH testing post-op was performed by a few sites either as standard of care or in in patient populations. Median (IQR) 24% hour oesophageal acid exposure improved from 8.2% (4.6–18.4) at baseline to 4.7% (1.4–14.5) at 6 months (p = 0.26) and 3.6% (1.0–5.8) at 12 months (p = 0.04) (n = 120, 39, 10 at baseline, M6, M12, respectively). The proportion of patients with moderate to severe regurgitation decreased from 64% at baseline to 22.5% after 6 and 13.4% after 12 months. Extra-oesophageal symptoms (recurrent cough, pneumonia, shortness of breath) and sleep disturbances also decreased substantially. Overall, dysphagia and gas were less common at 12 months than preoperatively. Four severe adverse events were reported in one patient. One myocardial infarction related sudden death at 11-month post-op, not related to the device or procedure; 1 event of asymptomatic electro erosion into the oesophagus detected during routine endoscopy and the device safely removed during laparoscopic fundoplication; and 2 events of gas intolerance in 1 patient requiring hospitalization, possibly related to the device, were reported.

Conclusion: ES-LOS is safe and effective in treating patients with disruptive GORD symptoms despite PPI in routine clinical practice. ES-LOS should be considered as a potential treatment option for this patient group.

Disclosure of Interest: J. Labenz: Consulting fees - EndoStim BV All other authors have declared no conflicts of interest.

P1858 ANTI-REFLUX MUCOSECTOMY (ARMS) FOR REFRAC TORY GERD-INITIAL CLINICAL EXPERIENCE

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Introduction: ARMS remains the mainstay for treatment of gastroesophageal reflux disease (GERD), however laparoscopic fundoplication is recommended in refractory patients. Various endoscopic methods have been attempted with variable success. Anti-reflux mucosectomy (ARMS) is a recently introduced option for refractory GERD patients.

Aims & Methods: The current study describes initial clinical experience of ARMS. Data from a prospectively maintained database of consecutive patients undergoing ARMS for refractory GERD was abstracted. Inclusion criteria- GERD symptoms persisting under a PPI for >6 months; absence of hiatus hernia >3cm on EGD and normal esophageal body motility on high-resolution manometry (HRM). Exclusions-hiatus hernia >3cm, poor or absent esophageal body motility, poor-risk candidates for anesthesia or invasive procedure. Pre-ARMS evaluation—EGD to assess Hill’s grade of flap valve, esophageal manometry, 24-hour ambulatory esophageal pH studies, PPI requirement and GERD-HRQL questionnaire. ARMS performed using cap EMR technique. Follow up protocol—EGD at 2-4 weeks, GERD-HRQL questionnaire, pH studies and HRM at 4-6 weeks. Parameters for data analysis—pre and post-ARMS GERD-HRQL questionnaire and Deemster scores, Hill’s grading of gastroesophageal valve on EGD, PPI requirement and procedure-related adverse events (AE).

Results: N = 15, duration—12 months. Mean age 40.8 years (Range 22–69); M: F = 11: 4. HRM-normal esophageal body motility in all. Mean GERD-HRQL score improved significantly from pre-ARMS 40.4 to post-ARMS 7.6 (p < 0.05). Mean Deemster score decreased from 85.8 pre-ARMS to 5.9 post-ARMS (p < 0.001). Mean Hill’s valve grade decreased post-ARMS = 2.8: post-ARMS = 1.6 (p < 0.05). Three AE’s—muscle injury—2 (treated by endoclip), grade I dysphagia—1. At 4 weeks follow up, 11/15 patients (73.3%) had discontinued PPI. 4/11 (36.3%) had > 50% reduction in PPI dosage.

Conclusion: Current study shows impressive short-term results for ARMS. Significant symptom resolution and acid exposure reduction occurred in all patients. 100% patients could discontinue or reduce PPI usage. AE’s were minor. Larger randomized studies with longer term follow up are recommended.

Disclosure of Interest: A. Bapaye: Speaker- Boston scientific corporation, Cook medical, Taewoong medical, Cook Medical/Germany. All other authors have declared no conflicts of interest.

P1859 EFFECTIVENESS OF SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN PATIENTS WITH NON-EROSIVE REFLUX DISEASE: A RANDOMIZED TRIAL

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Introduction: To date a large quantity of 5-HT3 receptors were found in esophageal mucosa that indicates on an important role of this neuromediator in pathogenesis of non-erosive reflux disease (NERD) and gastroesophageal reflux disease (GERD). Antidepressants with 5-HT3 receptor antagonist and analgesic effect, reduce chemical and mechanical sensitivity and have local effect on gastrointestinal tract.

Aims & Methods: Our aim was to assess the superiority of combined treatment using proton pump inhibitor (PPI) plus antidepressant by comparison with PPI for patients with NERD. Methods: In this randomized superiority study adult patients (18-65 years) with confirmed diagnosis of NERD were eligible to participate. Exclusion criteria: the presence of any other neuromediatory, psychological or cardiac conditions. Patients were assessed in clinically and psychologically. Psychological testing was done using validated short-form version of the depression anxiety stress scales (DASS-21) and Toronto alexithymia scale (TAS). All the patients used were randomly divided into two arms: patients of the first arm received PPI (pantoprazole) 40 mg once a day plus escitalopram as follows: initial dose - 5 mg/day for the first two weeks of treatment; depending on individual response the dose was increased to 10 mg/day. The second arm received only PPI 40 mg once a day. Patients were assessed on the 4th and 8th week of treatment. The superiority was shown if there was more last decreasing in heartburn severity, reduced anxiety (A), depression (D) and alexithymia levels.

Results: Of 75 randomized patients 39 were allocated to the first arm and 36 to the second one. The groups were statistically comparable in age and sex. Treatment results showed reduction of heartburn severity in both groups on the 8th week, however more significant in the first group (1group-89.7%, 2group-61.1%, P < 0.001). Also both A and D levels were much lower in the first group compared to the second one (P < 0.001). Comparing the levels alexithymia between two arms on the 8th week after the initiation of treatment we found that alexithymia type of personality prevailed in patients that received PPI only (P < 0.001).

Conclusion: The combination of PPI plus antidepressant demonstrates superiority to PPI therapy alone, showing more lasting symptoms regression and improved psychological and emotional condition of patients.

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

P1860 QUALITY OF ESOPHAGEAL MUCOSAL HEALING IN EROSI VE REFLUX DISEASE: A RANDOMIZED COMPARATIVE TRIAL WITH LANSOPRAZOLE ALONE OR COMBINED WITH REBAMIPIDE

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Introduction: The quality of histologic healing or inflammatory cytokine-related change in erosive reflux disease (ERD) had been verified in few studies. However, it is not clear if combined therapy is better than monotherapy in ERD.

Aims & Methods: We conducted double-blinded comparative study to assess endoscopic, histologic quality of mucosal healing in ERD, following 4-week medical treatment with lansoprazole combined with rebamipide or not. The patients with ERD in modified LA classification grade A-D were enrolled via four referral institutes, regardless of GERD related symptoms. The enrolled subjects were randomly allocated to ingest 30 mg lansoprazole alone or ingest lansoprazole 30 mg with rebamipide 100 mg three times in a day for 4 weeks. Biopsies were performed to assess endoscopic healing (regressed into minimal change or normal), and to obtain esophageal biopsy specimens (at 3 o’clock direction, 3 cm proximal area from squamocolumnar junction). Additional tissue samples were obtained to measure tissue inflammatory cytokines (IL-8, PAF, at 9 o’clock direction, 3 cm proximal area from squamocolumnar junction).

Results: Overall 109 patients were enrolled and randomly allocated to lansoprazole group (N = 54) or combination group (N = 55). Demographic data, smoking or drinking habits were not significantly different between both groups. The endoscopic healing rate at 4-week was not different significantly (75.0% vs 78.9%; P = 0.686. Difference 3.95%, 95%CI [-15.24, 23.13]). The histologic changes of basal layer thickness, intraepithelial infiltration of inflammatory cells (eosinophils, neutrophils) were normalized in subsets of patients regardless of the fate of endoscopic healing, and were not different in both groups. In contrast, papillary length, intraepithelial infiltration of T lymphocyte and the dilated intercellular space (DIS) was normalized significantly in endoscopically
healed combination group. When both group were pooled in a group (proton pump inhibitor administration), the papillary length and DIS was significantly improved in endoscopically healed patients. Tissue level of IL-8, but not Lyso-PAF, was significantly decreased in lansoprazole alone group.

**Conclusion:** Adjuvant therapy of rehampibide to lansoprazole failed to reveal additional esophageal healing effect by endoscopic or histologic evaluation. Papillary length and DIS was more evident parameter of quality of mucosal healing in patient of erosive reflux disease treated with proton pump inhibitor. Long term follow-up data are needed on whether these histologic parameters of mucosal healing can help predict the prognosis of gastroesophageal reflux disease.

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

**References**

Gastroesophageal Reflux Might Cause Esphagitis Through a Cytokine-Mediated Mechanism Rather Than Caustic Acid Injury, Souza RF et al. [10].

**Disclosure of Interest:**


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**P1861 LONG-TERM RESULTS OF RADIOFREQUENCY ABLATION (RFA) IN PATIENTS WITH BARRETT’S ESOPHAGUS RELATED NEOPLASIA**

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**Introduction:** Radiofrequency ablation (RFA) with or without endoscopic resection (ER) is an established endoscopic treatment of early Barrett’s esophagus (BE) related neoplasia (BORN). After successful treatment, follow-up is still required as recurrences may occur. The aim of this prospective single-center case series was to assess the long-term efficacy of endoscopic treatment (RFA with or without ER) for BORN. Main outcomes were complete remission of neoplasia (CR-N) and intestinal metaplasia (CR-IM) and recurrence of IM (R-IM) and neoplasia (R-N).

**Aims & Methods:** A total of 99 consecutive patients with BORN have been treated with endoscopic ablation. Nineteen patients were referred for RFA alone, 75 patients (75 cm, mean age 64, range 22-91) completed the treatment and were included into this analysis. The patients had been followed up during 296 patient-years (mean 3.4 years, range 0.5-6). Thirty-three patients were diagnosed with adenocarcinoma (58%), 24 patients with high-grade dysplasia (28%) and 30 patients with low-grade dysplasia (34%). Prior to RFA, ER for visible lesions was performed in 57 patients (66%). Mean length of the Barrett’s esophagus (BE) was 4.6 cm (range 1-13 cm). After treatment, the patients have undergone regular endoscopic surveillance with multiple biopsies. Recurrence: Complete remission of IM (CR-IM) and complete remission of neoplasia (CR-N) were achieved in 54 patients (54/31 pts, 65.1%; 95% CI 54.3-74.5) and 82 patients (98.8%; 95% CI 92.8-99.9), respectively. All patients who did not achieve CR-IM had macroscopically normal neo-Z-line without visible abnormality. For one patient where macroscopic eradication of BE was not achieved due to giant hiatal hernia and who was referred for anti-reflux surgery. During the follow-up, 18 patients (13.3%, 18/134 pts) experienced a recurrence of IM and 3 patients (2.4%) had a recurrence of neoplasia (LGD 2x, HGD 1x). We did not encounter any patient with a submucous neoplasia. All recurrences occurred at the level of neo-Z-line and 6 patients with recurrent IM had also macroscopic recurrence of BE. A total of 13 patients underwent endoscopic retreatment: 7x probe-based re-RFA, 5x esophageal argon plasma coagulation (APC) and 1x ER. After retreatment, we achieved 100% CR-N and 54% (713 pts) CR-IM. Treatment-related adverse events occurred in 22 patients (25%); 12x chest pain and 10x stricture. Two patients with a stricture had to undergo surgical resection - first patient due to perforation during balloon dilatation of a post-RFA stricture, the second because of refractory post-RFA stricture after 20 sessions of dilatation.

**Conclusion:** RFA combined with ER for patients with BORN achieves a high success rate of CR-N with durable results. Recurrence of IM occurs in approxi- mately one-third of patients and supports continuous endoscopic surveillance even after complete eradication. Nonetheless, the majority of recurrent IM occurs within a normally appearing neo-Z-line with questionable clinical relevance.

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

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**P1862 METHODS OF MEASURING BARRETT’S MUCOSAL THICKNESS WITH VOLUMETRIC LASER ENDOMICROSCOPY (VLE), AS A BIOMARKER TO GUIDE TO TREATMENT CHOICE**

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**Introduction:** Barrett’s Esophagus (BE) is a premalignant condition, in which prolonged gastroesophageal reflux results in intestinal metaplasia, leading to an annual risk of adenocarcinoma 0.12%/year1. The current standard of treatment is Endoscopic Resection (ER) of visible nodular lesions and Radiofrequency Ablation (RFA) at Barrett’s, which has a success rate of 92%2. 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.

**Aims & Methods:** We performed a nested cohort study from the U.S. VLE Registry (which comprises 1000 patients) of patients with BE who had a baseline VLE scan, followed by RFA ablation and had at least one follow up exam. We excluded patients who had any ablative therapy prior to baseline VLE. The primary outcome was the percentage reduction of Prague length after the first treatment. Secondary outcomes were: 1. complete remission of intestinal metaplasia (CRIM) during 12 months after baseline procedure, 2. complete remission of dysplasia (CRD) during 12 months after baseline procedure, 3. number of RFA treatments necessary for complete response of intestinal metaplasia. We estimated the thickness of BE mucosal layers, by measuring the distance between the esophageal surface to the deepest edge of the lamina propria. In order to do so, we developed an algorithm (ImageJ software; imagej.nih.gov/ij/) that automatically adjusts every clockwise image into a high-resolution vertical scan with enhanced contrast. We used two measurement protocols: subjective, by drawing a line from the surface to the edge of the lamina propria (LP) and by plotting a grayscale density plot at the same location, using the sharp drop off in density to infer the thickness. The measurements were done by Levink, I. 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 themselves were done by Iris Levink. 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 Levink, I. All other authors have declared no conflicts of interest.

**References**


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**Table 1:** The measurements of Barrett’s thickness in one patient, using the two different measurement protocols.

<table>
<thead>
<tr>
<th>Pt.</th>
<th>Age (years)</th>
<th>SEX</th>
<th>BMI</th>
<th>Highest grade</th>
<th>Prior biopsy</th>
<th>Prior Treatment</th>
<th>Prague Length, circumferential and maximum extend in cm</th>
<th>Thickness subjective measured, pixels [SEM, number of measurements]</th>
<th>Thickness objective measured, pixels [SEM, number of measurements]</th>
</tr>
</thead>
</table>
Barrett’s esophagus (BE), with or without prior endoscopic resection (ER) of focal lesions, results in complete eradication of intestinal metaplasia (CE-IM) and complete eradication of neoplastic mucosa (NE-SCJ) in 93–100% of patients. The aims of our study were to evaluate recurrence of endoscopically visible Barrett’s mucosa. Secondary outcomes: Buried Barrett’s glands; IM in biopsies obtained distal to a normal appearance neo squamous columnar junction (neo-SCJ); need for retreatment; sustained CE-IM and NE-SCJ at last FU.

**Results:** 68 patients were included (55 men, median 64 yrs, median BE C5M6). In 53/68 patients ER was performed (worst pathology: low-grade dysplasia (LGD) n = 32, high-grade dysplasia (HGD) n = 27). Worst pathology pre-RFA (after ER): non-dysplastic IM (n = 9), LGD (n = 27), HGD (n = 32). Median FU was 85 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of endoscopically visible Barrett’s mucosa was seen in 32% of patients, however it was not reproduced in 84%. In 3 patients LGD without IM was found in the neo-SCJ. Eleven patients required retreatment: APC for small areas of visible BE was found in 32% of patients, however it was confined to small islands or tongues ≤1 cm in the vast majority of patients.

**Conclusion:** With 7-years of follow-up, this study presents the longest published follow-up data on RFA for BE with HGD/EC to date. Our long-term outcomes show that after successful RFA recurrence of HGD/EC is rare (3%). Recurrence of endoscopically visible BE was found in 32% of patients, however it was confined to small islands or tongues ≤1 cm in the vast majority of patients.

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

**P1864 ACTION IS REQUIRED TO IMPROVE UNDERSTANDING AND REDUCE ANXIETY LEVELS AMONGST PATIENTS IN THE BARRETT’S SURVEILLANCE PROGRAMME**

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**Introduction:** Barrett’s oesophagus (BE) is the only identifiable pre-cursor condition for oesophageal adenocarcinoma. Endoscopic surveillance is performed in BE to detect dysplasia as it likely to be amenable to curative therapy. There is data suggesting that a diagnosis of BE has a negative impact on the quality of life of patients. To our knowledge, no guidance exists on the counselling of patients with BE. To our knowledge, no guidance exists on the counselling of patients with BE to detect dysplasia as it likely to be amenable to curative therapy. There is data suggesting that a diagnosis of BE has a negative impact on the quality of life of patients.

**Aims and Methods:** The aim of this study was to assess if the excellent results after successful RFA for BE with high-grade dysplasia (HGD) or early cancer (EC) are sustained on the long term. We screened all patients treated with RFA, and ER, for recurrence of visible HGD/EC, which were previously enrolled in 5 consecutive cohort studies in a tertiary referral center in the Netherlands. All patients who had reached endoscopic and histologically confirmed CE-NEO and CE-IM after RFA were included for evaluation of long-term follow-up (FU). Primary outcome: recurrence of HGD/EC; recurrence of endoscopically visible Barrett’s mucosa. Secondary outcomes: Buried Barrett’s glands; IM in biopsies obtained distal to a normal appearance neo squamous columnar junction (neo-SCJ); need for retreatment; sustained CE-IM and NE-SCJ at last FU.

**Results:** 68 patients were included (55 men, median 64 yrs, median BE C5M6). In 53/68 patients ER was performed (worst pathology: low-grade dysplasia (LGD) n = 32, high-grade dysplasia (HGD) n = 27). Worst pathology pre-RFA (after ER): non-dysplastic IM (n = 9), LGD (n = 27), HGD (n = 32). Median FU was 85 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of endoscopically visible Barrett’s mucosa was seen in 32% of patients, however it was not reproduced in 84%. In 3 patients LGD without IM was found in the neo-SCJ. Eleven patients required retreatment: APC for small areas of visible BE was found in 32% of patients, however it was confined to small islands or tongues ≤1 cm in the vast majority of patients.

**Conclusion:** With 7-years of follow-up, this study presents the longest published follow-up data on RFA for BE with HGD/EC to date. Our long-term outcomes show that after successful RFA recurrence of HGD/EC is rare (3%). Recurrence of endoscopically visible BE was found in 32% of patients, however it was confined to small islands or tongues ≤1 cm in the vast majority of patients.

**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 BIOMARKERS**

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**Introduction:** Data on the association between inflammatory and metabolic biomarkers and Barrett’s oesophagus (BE) are scant and conflicting.

**Aims and Methods:** We aimed to study the association between circulating inflammatory biomarkers (interleukin-6 [IL-6], high-resolution C-reactive protein [hsCRP], intra-cellular adhesion molecule [ICAM], tumor 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 enrolled 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 with controls in a 1:1 ratio. Controls underwent upper endoscopy during the same time period and did not have BE (361 females and 265 males) on year of birth, year of blood collection, month of blood collection, fasting status and “am or pm” blood draw. We used multivariable conditional logistic regression models, adjusted 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.

**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.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>A 14-point based questionnaire which was used to check the understanding amongst patients with Barrett’s Oesophagus (BE)</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>
<td></td>
</tr>
<tr>
<td>2. If yes, did you understand this?</td>
<td>15 (47)</td>
<td>17 (53)</td>
<td></td>
</tr>
<tr>
<td>3. Briefly speaking, do you understand what BE is?</td>
<td>43 (41)</td>
<td>61 (59)</td>
<td></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>
<td></td>
</tr>
<tr>
<td>5. Are you on a regular PPI?</td>
<td>96 (92)</td>
<td>8 (8)</td>
<td></td>
</tr>
<tr>
<td>6. Do you know what the overall risk of progression to cancer is?</td>
<td>11 (11)</td>
<td>93 (89)</td>
<td></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>46 (44)</td>
<td>58 (56)</td>
<td></td>
</tr>
<tr>
<td>8. Do you understand what the rationale for endoscopic surveillance in BE is?</td>
<td>4 (6)</td>
<td>99 (98)</td>
<td></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>4 (6)</td>
<td>99 (98)</td>
<td></td>
</tr>
<tr>
<td>10. Are you aware of any treatment options for BE?</td>
<td>7 (7)</td>
<td>97 (93)</td>
<td></td>
</tr>
<tr>
<td>11. If yes, do you know when this indicated?</td>
<td>4 (57)</td>
<td>3 (43)</td>
<td></td>
</tr>
<tr>
<td>12. Do you or has anyone in your family suffered with BE or OAC?</td>
<td>36 (35)</td>
<td>68 (65)</td>
<td></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>
<td></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>
<td></td>
</tr>
</tbody>
</table>
LET NOT LEPTIN AFFECT DIFFERENT SUBGROUPS DEFINED BY BMI (N=196). AN ASPIN ASK (P=0.82). ASK (P=0.82).

We observed an OR of 0.41; 95% CI 0.17, 0.99 comparing extreme quintiles of IGF-BP-3 (p-trend = 0.11). Among both women and men, we did not observe any other significant associations between inflammatory biomarkers and metabolic biomarkers were associated with a decreased risk of BE in women but not in men. These findings may serve to guide 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 INCIPIENT SUBMUCOSAL INVASION, RETROSPECTIVE ANALYSIS OF 19 CASES FROM A TERTIARY REFERRAL CENTER IN THE UK

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Introduction: Endoscopic mucosal resection (EMR) is an established diagnostic and treatment tool in the management of Barrett’s oesophagus (BO) with early neoplasia and not enough data and research on the outcomes in the patients, in whom the EMR’s histologic assessment identifies early-stage adenocarcinoma of the esophagus 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 3 pieces and 4 (16%) patients 4 pieces 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 bleeding and 1 (4%) of them required transfusion. Stricture was endoscopically detectable but not causing any symptoms in 1 (4%) patient and another patient (4%) had slight dysphagia post EMR, but did not need dilation. Histology showed lymphovascular invasion in 6 (28%) patients and vascular invasion in 1 (4%) patient. Of all 25 early adenocarcinomas 7 (28%) were reported as poorly differentiated, 11 (44%) as moderately differentiated and 3 (12%) as well differentiated. In 4 (16%) cases differentiation was not reported. All resection margins were reported as being clear from dysplasia or cancer. There were 9 (36%) patients with clear margins on the radial and/or deep margin of the EMR specimen, of these patients 9 (60%) cases showed residual cancer in 3 (33.3%) of the surgical specimens and also the outcomes with the mortality.

Conclusion: The median survival of all 21 (84%) patients currently alive is 25 months (range: 0.5–180). 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 operation and in 9 (69%) patients the surgery was performed for clinical reasons. There were 10 (40%) patients without cancer 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 NEOPLASM

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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 endocystoscopy and magnifying NBI, the McNemar test was performed. The McNemar chi-squared statistic is NaN, and the McNemar chi-squared statistics with continuity correction 0.5 is infinity, meaning that the two tests have the same diagnostic accuracy.

Conclusion: Endocystoscopy 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.

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

Reference

P1868 CLINICAL OUTCOMES OF ENDOSCOPIC RESECTION FOR ACHALASIA-ASSOCIATED SUPERFICIAL ESOPHAGEAL CANCER

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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 aerodigestive diseases. In the present study, we report the clinical outcomes of endoscopic resection (ESD/EMR) for superficial esophageal cancer 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 with narrow band imaging and endocystoscopy were performed in these patients. During the procedure, the esophageal mucosa was stained with 0.5% methylene blue and then with crystal violet. The endoscopic 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 (IPLC) pattern classification. These findings were compared against the gold standard of histopathological examination which was based on the Vienna classification.

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

Reference
was followed up without additional therapy, and free from LNM for one year. 5. 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 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 inflammation. 5. 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 inflammation.

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 injection of TA 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 was 65 (30–83) and 61 (42–82) years old. The length of circumferential resection was 75 (50–10) and 76 (55–11) mm, respectively. There was no significant difference in the background of both groups. Fifty mg TA was injected into submucosal layer just after ESD, and TA injection was repeated in two-week intervals by the ESD ulcer. When the length of circumferential ESD was 50 mm or longer, 100 mg Triamcinolone was injected just after TA injection was repeated in two-week intervals. Fifteen mm endoscopic balloon dilation (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 (1–23), respectively (p = 0.01). Duration from ESD to ulcer healing were 10 (3–23) and 7 (4–12) months, respectively. Complications (p = 0.47) and postoperative bleeding rate due to EBD was 6.3% (1/16) and 3.6% (1/28). Both patients were treated by conservative therapy. 4. Difference between EAC and SCC: There were four EAC and 24 SCC patients in TA group. The number of EBD were 5.3 (1–11) and 26.8 (5–65) mm, respectively. Duration of ulcer healing were 10 (4–14) and 6.5 (1–24), respectively. There was no significant difference between two groups.

Conclusion: Triamcinolone injection is safe and effective treatment to prevent stricture after circumferential ESD, not only for SCC but also for EAC.

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

P1870 OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL PHARYNGEAL SQUAMOUS CELL CARCINOMA

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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.

Aim of this study is to clarify the outcome and prognosis of pharyngeal SCC 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 an IT knife with a Histoacule under general anesthesia with tracheal intubation. Clip with line or forceps was used for 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 75:25 and 25:75 years), sex, body mass index (BMI), treatment for synchronous multiple ESCNs, previous radiation therapy, antithrombotic agents, lesion location (upper or middle or lower), lesion size (≤2 cm or >2 cm), lesion circumferential lesion size (≤120 sec or >120 sec), lesion depth (d2 cm or >2 cm), lesion circumference (≤25 or >25), treatment for synchronous multiple ESCNs, previous radiation therapy, antithrombotic agents, lesion location (upper or middle or lower), lesion size (≤2 cm or >2 cm), lesion circumferential lesion size (≤120 sec or >120 sec), and the endoscopist’s experience of esophageal ESD (>40 or ≥40 procedures).

Results: Twenty-nine ESCNs (6%) were treated by ESD without discontinuation of antithrombotic agents. Hemostatic forces were used for 116 lesions (25%), median forceps use time was 73 secs (range: 8–1200 secs), and the median number of antithrombotic agents may therefore not be necessary prior to esophageal ESD. Continuous use of antithrombotic agents may therefore not be necessary prior to esophageal ESD.

Conclusion: Our results suggest that continuous use of antithrombotic agents does not increase the risk of bleeding during esophageal ESD, and that postoperative bleeding was a rare occurrence. Discontinuation of antithrombotic agents may therefore not be necessary prior to esophageal ESD.

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

Reference

P1871 SHOULD ANTITHROMBOTIC AGENTS BE DISCONTINUED PRIOR TO ESOPHAGEAL SUBMUCOSAL DISSECTION?


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Introduction: Endoscopic submucosal dissection (ESD) has been widely performed as a minimally invasive treatment for superficial esophageal neoplasms (ESCsNs) in Japan and Asian countries. According to the current guideline[1], ESD is classified as a high bleeding risk procedure. However, these guidelines have not been fully validated.

Aims & Methods: The aim of this study was to identify the risk factors of bleeding associated with esophageal ESD, and to clarify whether antithrombotic agents must be discontinued prior to esophageal ESD. A forward stepwise multivariate logistic regression analysis was performed using an IT knife nano (Olympus, Tokyo, Japan). Hemostatic forces (Coagrasper, Olympus, Tokyo, Japan) were used when hemostasis during ESD proved difficult with the IT knife nano. Longer hemostatic time during ESD was defined as more than 120 seconds for hemostasis with hemostatic forceps. We analyzed the relationship between risk factors for longer hemostatic time during ESD and the following factors using univariate and multivariate analyses: age (<75 or ≥75 years), sex, body mass index (<25 or ≥25), treatment for synchronous multiple ESCNs, previous radiation therapy, antithrombotic agents, lesion location (upper or middle or lower), lesion size (≤2 cm or >2 cm), lesion circumferential lesion size (≤120 sec or >120 sec), and the endoscopist’s experience of esophageal ESD (>40 or ≥40 procedures).

Results: Twenty-nine ESCNs (6%) were treated by ESD without discontinuation of antithrombotic agents. Hemostatic forces were used for 116 lesions (25%), median forceps use time was 73 secs (range: 8–1200 secs), and the median number of antithrombotic agents may therefore not be necessary prior to esophageal ESD.

Conclusion: Our results suggest that continuous use of antithrombotic agents does not increase the risk of bleeding during esophageal ESD, and that postoperative bleeding was a rare occurrence. Discontinuation of antithrombotic agents may therefore not be necessary prior to esophageal ESD.

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

Reference
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 for various malignant tumors who 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 purpose 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 2009 at our institution, cohorts were selected based on 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 no statistical variables for OS in differences between CRT 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 strong 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, for 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: 57%/74%). As for patients with strong CD24 expression, there was no significant difference between CRT group (P=0.445), however there was significant difference between CRT and OPE group in patients with weak CD24 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 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 in ESCC patients when 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

4. P1874 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASONOGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND DUCT INVOLVEMENT ACCOMPANIED BY EARLY ESOPHAGEAL CANCER

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Introduction: Normally, resided within the submucosal layer of esophagus, each esophageal submucosal gland duct (ESMGDs) have respective glandular tissue and muscularis mucosa, and deliver the acinar secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMGDI) and its precursor lesion have not been comprehensively evaluated so far, and the series study focusing on endoscopic features of this lesions has not been reported widely. During the last 1990s, the esophageal lesions presumed to originate from ESMGDs had been described constantly in various case reports. Currently, in addition to the gold standard of histology, almost no useful modalities could be applied to this lesion. In our study, we considered that the ESMGD had a correlation with early esophageal cancer, and we noted that the ESMGD had special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnose ESMGD.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing ESMGD accompanied by early esophageal cancer, which were suggested by combined esophagitis or endoscopy or histology, we undertook a retrospective analysis on 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 all of them had already undergone EUS combined with Endoscopic Submucosal Dissection (ESD). 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 ESMGD by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGD, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGD were diagnosed exactly by EUS. Another six cases were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intranepithelial neoplasia. One case was diagnosed as ESMGD by endoscopy, however confirmed not by pathology. Consequently, the EUS values for sensitivity and specificity for the diagnosis of ESMGD 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% (478/478).

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 ESMGD as well as the clinicopathological features and sensitivity and specificity.

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

P1873 ENDOSCOPIC TREATMENT OF PATIENTS WITH HIGH-RISK EARLY ESOPHAGEAL CANCER

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Introduction: Endoscopic treatment is a standard therapeutic approach for patients with T1a early esophageal cancer (EEC). In patients with ‘high-risk’ T1a (T1a grade 3b or 4b grading or invasion of blood/lymphatic vessels) and in patients with any submucosal (sm) invasion (T1b), 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 the following: poor differentiation (G3/G4), invasion to blood (A+) or lymphatic vessels (L+)) and high tumor cell dissociation (TC3D). 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 were referred for ER or ESD. All 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 T1a cancer with ‘high-risk’ features and 35 patients (59%) had T1b cancer with sm invasion (sm: 15; sm: 2; 9, sm: 3; 11); 45 patients had adenocarcinoma (EAC), 11 patients had squamous carcinoma (SCC); 19 (40%) were referred for ER, 37 patients (66%) referred for ESD. All patients were referred for surgery. A total of 37 patients (66%) continued in 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 endoscopic 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 residua 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. Broadening of indications for radical endoscopic treatment of early EEC should be reconsidered.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1875 PRETREATMENT NEUTROPHIL TO LYMPHOCYTE RATIO IS NOT A PREDICTOR OF RESPONSE TO NEOADJUVANT THERAPY IN ESOPHAGEAL CANCER

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Introduction: Preoperative Neutrophil to Lymphocyte Ratio (NLR) has been proposed as a prognostic marker in several solid tumors (Templeton et al. 2014). A retrospective prospective study of 60 patients showed the prognostic relevance of NLR as a predictor of response in esophageal cancer patients treated with chemoradiotherapy. The aim of this study is to assess the NLR prognostic strength in a retrospective series of two high-volume centers.

Aims & Methods: A retrospective review of two prospective esophageal cancer database was conducted. Neutrophil to lymphocyte ratio was defined as the prechemoradiotherapy serum neutrophil count divided by lymphocyte count. We dichotomized the NLR data using as cut-off values 2.5 and 3 respectively. Univariable logistic regressions were performed to determine the effect of NLR on response after neoadjuvant treatment. Survival curves were constructed with Kaplan Meier method and compared with the long rank test.

Results: We included 280 patients. The analysis of NLR as predictor of pathologic 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, \(p = 0.617\)) 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).

Conclusion: 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 stratification risk marker. The heterogeneity of treatments, the complexity of the disease, the absence of a validated and pre-defined NLR cut-off value in the available literature are the main limits to our analysis. Further studies are needed to assess the clinical relevance of NLR as a predictive marker of response to neoadjuvant treatment.

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

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P1876 CAN THE USE OF A COMPUTER DECISION SUPPORT SYSTEM PREVENT COMPLICATED ULCER AMONG PATIENTS TREATED WITH NSAID OR ASPIRING A RANDOMISED CONTROLLED CLUSTER TRIAL IN GENERAL PRACTICE

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Introduction: Background consumption of non-steroidal-anti-inflammatory-drugs (NSAID) and Aspirin is high in Denmark and the majority of these drugs are prescribed in General Practice. Risk factors for complicated ulcer are well established and include NSAID, Aspirin, age, prior ulcer, Helicobacter pylori, anticoagulants, selective-serotonin-reuptake-inhibitors (SSRIs), Adenosine-Diphosphate (ADP)inhibitors and glucocorticoids. Proton Pump Inhibitors (PPIs) reduce the risk of complication but preventative treatment with PPI is only given to a third of the people at risk. The mortality from an ulcer complication is 10% and above.

Aims & Methods: The aim was first in a randomised cluster design to test if a Computer Decision Support System (CDDS) - based on a risk profile for the individual patient - reduced the frequency of ulcer complications. Second to investigate if the use of the CDDS changed the prescription pattern in general practice with regard to prescriptions of NSAID, Aspirin and PPI.

Results: Ninety-six GP’s responsible for the treatment of 52,649 patients were randomised to the CDDS-group and 90 GP’s responsible for the treatment of 43,861 patients to the control group. No significant differences were found between the two groups with regard to prescriptions of NSAID, Aspirin and PPI. In addition a significantly higher co-prescription of NSAID and PPI was found in the CDDS group particularly in high-risk patients. No significant difference was found in co-prescription of Aspirin and PPI when comparing CDDS-group to the control group.

Conclusion: Conclusion: A CDDS based on a risk profile for the individual patient had no impact on the main outcomes ulcer complications, uncomplicated ulcer, reflux or endoscopies. Usage of CDDS increased the amount of co-prescription of anti-inflammatory drugs in medium and high-risk patients. A CDDS was not found for Aspirin. Triggering and the timing of the CDDS and its implementation in the Electronic Health Record should be optimized.

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

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P1877 ACCELERATION OF HEALING OF PREEXISTING GASTRIC ULCERS BY CARBON MONOXIDE RELEASING MOLECULE -2 (CORM-2), INVOLVEMENT OF HEME OXYGENASE, OXIDATIVE STRESS AND PROINFLAMMATORY MARKERS

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Introduction: Carbon monoxide (CO) is produced endogenously in the body as a by-product of heme degradation via activity of the enzyme heme oxygenase (HO-1). This gaseous mediator with multidirectional biological activity exerts anti-inflammatory, anti-fibrotic, and immunomodulatory properties; notably new discovered class of compounds, named CO-releasing molecules (CORMs), is capable of liberating CO gaseous molecule that can be useful as pharmacological tool to assess the physiological role of CO under experimental conditions. CORM-2 was implicated in gastroprotection 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 (ulcer 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. Groups of seventy rats with gastric ulcers (A-D) received daily treatment with A) vehicle (saline), B) CORM-2 in doses from 1 to 10 mg/kg i.p. or C) the HO-1 inducer, hemin (5 mg/kg i.p.), D) the HO-1 activity inhibitor, zinoporfin IX (ZnP(IX) (5 mg/kg i.p.). After 9 days of treatment, the ulcer area was measured by planimetry, the gastric blood flow (GBF) at ulcer margin was determined by Laser Doppler technique, plasma TNF-α and IL-1β levels were measured by ELISA and TNF-α, HO-1, COX-1, COX-2, iNOS, eNOS mRNAs were analyzed by RT-PCR and Western blot. Gastric mucosal samples were collected for the assessment of MPO activity, level of reduced glutathione (GSH) and lipid peroxidation products (MDA + 4HENE) by spectrophotometric methods.

Results: Treatment with CORM-2 significantly reduced the area of gastric ulcers and significantly raised GBF at ulcer margin. The dose accelerating ulcer healing was 5% (D50) and significantly raising GBF was 10 mg/kg as compared with vehicle and NSAID. The HO-1 inducer, hemin, found in the CORM group, significantly reduced the area of gastric ulcers and raised GBF at ulcer margin but the treatment with ZnP(IX) significantly increased the area of gastric ulcers and significantly decreased the GBF at ulcer margin. The decrease in gastric ulcer healing by
The theoretical risk of FGP seems to be very low for clinical consequence in the development of fundic gland polyps (FGP). The trend of change in the upper gastrointestinal endoscopy between years 2015–2016 was performed. The mucosal content of MDA increased by treatment with CORM-2. The gastric mucosal MPO activity and the increased mucosal expression of mRNA for HO-1 were attenuated in CORM-treated animals. The increased mucosal expression of markers IL-1ß, TNF-alpha, COX-2 and iNOS as well as by antioxidative properties of CORM-2 releasing CO limiting lipid peroxidation.

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

P1879 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

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Introduction: There is evidence of proton pump inhibitors (PPIs) misuse in the community and in the hospitals causing significant direct and indirect costs burden for the health care system.

Aims & Methods: We aimed to evaluate the frequency of inappropriate PPIs administration in hospitalized patients, to measure the direct in-hosptial costs of PPIs misuse 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, pediatrics 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 direct 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 perioperative 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. Adenocarcinogenic and orthotopic carcinogenic risks was assessed and found to be 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 (80% 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 our hospital in a year, the cost of each PPI iv dose is 3.455 and 0.235 euros for iv and per os preparations and assuming a similar to that of our sample case distribution for the next 12 months, 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 PPIs at discharge.

Conclusion: Hospitalization does not represent an opportunity for optimization of PPIs utilization. On the contrary, the frequency of PPIs inappropriate use during hospital stay is higher than that during in-hospital admission, causing significant direct costs for the hospital and exposing patients to the risks of UGI complications.

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

P1880 ENDOSCOPIC RESECTION OF ADVANCED AMPULLARY ADENOMAS: A SINGLE-CENTER 14-YEAR RETROSPECTIVE COHORT STUDY

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Introduction: Adenomas of the ampulla of Vater are rare. Endoscopic ampullectomy has been recognized as a safe and reliable treatment of selective tumors of the ampulla of Vater and is associated with lower morbidity and mortality rates than surgical resection. However, the success rates for endoscopic ampullectomy range from 61 to 92 percent, with recurrence described in up to 33 percent of patients. Despite the increasing number of studies concerning endoscopic resection of ampullary tumors, data evaluating endoscopic resection of the more advanced ampullary adenomas are limited.

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 (IAE), and patients with lateral spreading adenomas (LSA). Between January 2002 and November 2016, all patients referred to the Erasmus University Medical Center, Rotterdam, for endoscopic resection of an ampullary lesion were retrospectively identified. Cases were selected by using ENDOWEB 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, 56 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 extension. 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 IAE (P = 0.039). 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 0–137) 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. Furthermore, an intraductal extended adenoma endoscopic success rates are significantly lower.

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

Reference
Lesion larger than 3 cm without finding of ulcer, U of stomach, and age

Disclosure of Interest:

/C20

5

p

C20

5

p

3 cm, respectively. Multivariable showed UL negative and 

3 cm, and 48.6% (54/111) in UL negative

size was 27 mm (range 12–60 mm). Twenty-two-gauge needles were used in 14 lesions as were the other 263 as assessed as UL negative. And, 152 of 263 UL negative lesions were 3 cm or less in size, and 207 lesions were judged as UL positive whereas the other 263 were assessed as

7

2 cm is periodical surveillance by

5

2 cm (vs. UL negative, p = 0.0001) was the most significant factor associated with technical difficulty, and U of stomach, and age ≤60 were also associated with difficulty.

Reference


P1883 A COMPARISON OF SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION AND ENDOSCOPIC FULL-THICKNESS RESECTION FOR GASTRIC FUNDUS SUBMUCOSAL TUMORS

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Introduction: Endoscopic submucosal tumors (SMT) refer to protuberant lesion covered with intact mucosa, and those from small and asymptomatic. While a half of these gastric SMTs are considered to be gastrointestinal stromal tumors (GIST) with malignant potential, especially for those with large diameter. One of the strategies for SMTs < 2 cm is surveillance by endoscopic ultrasonography (EUS) and endoscopic ultrasound guided fine needle aspiration (EUSFNA), but it involves issues related to the patient’s compliance and stress, cost-effectiveness, and the risk associated with repeated endoscopic procedures and accurate diagnosis of malignancy. Therefore, it is necessary to remove these SMTs and endoscopic resection could be considered as an alternative method. Endoscopic full-thickness resection (EFR) is a safe and effective endoscopic method for gastric fundus SMT originating from the muscularis propria (MP) layer with a high rate of complete resection. Submucosal tunneling endoscopic resection (STER) is a novel endoscopic technique and has been demonstrated to be safe and effective for the treatment of gastric SMTs. However, little is known about the comparison between STER and EFR for treating SMTs in gastric fundus. In this retrospective study, we aimed to compare both endoscopic techniques for treating gastric fundus SMTs.

Aims & Methods: Both submucosal tunneling endoscopic resection (STER) and endoscopic full-thickness resection (EFR) are effective methods for gastric fundus submucosal tumors (SMTs), however, little is known about the comparison between these two resections. The aim of this study was to compare the safety and efficacy of STER and EFR for treating SMTs in gastric fundus. We retrospectively collected the clinical data about patients with gastric fundus submucosal tumors who received submucosal tunneling endoscopic resection or endoscopic full-thickness resection at our hospital from April 2011 to May 2016. Epidemiological data (gender, age), tumor size, procedure-related parameters, complications, length of stay, cost and follow-up data were compared.

Results: A total of 43 patients were enrolled, and 15 of them received submucosal tunneling endoscopic resection, while the other 28 cases received endoscopic full-thickness resection. There was no significant difference between the two groups in terms of gender, age, tumor size, en bloc resection rate, operation time, pathohistological results, hospital stay and cost (p > 0.05). However, patients who received endoscopic full-thickness resection had a longer suture time and needed more clips to close the gastric wall defect (p < 0.05). No recurrence was found in the submucosal tunneling endoscopic resection and endoscopic full-thickness resection groups during a mean follow-up of 12.1 and 22.8 months, respectively.

P1888 COMPARATIVE EFFECTIVENESS OF NOVEL FINE-NEEDLE BIOPSY DEVICE VS CONVENTIONAL FINE-NEEDLE ASPIRATION FOR ENDOSCOPIC ULTRASOUND DIAGNOSIS OF GASTRIC SUBMUCOSAL LESIONS

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Introduction: Endoscopic ultrasound with fine-needle aspiration (EUS-FNA) is commonly used for the diagnosis of various gastrointestinal lesions. Recently, a novel fine-needle biopsy (FNB) system (SharkCore, Medtronic) was developed to acquire cohesive units of tissue to increase the diagnostic yield of EUS. Aims & Methods: Our study objective was to compare the diagnostic yield of EUS-FNA using a conventional needle vs. EUS-FNB using the novel needle for gastric submucosal lesions. We conducted a prospective analysis of patients undergoing diagnostic EUS from November 2014 to October 2015. Each patient underwent 3 FNA passes followed by 3 FNB passes, without onsite cytologic evaluation. Data gathered included demographics, size and location of the lesion, needle size, and complications. Pathology and cytology were reviewed separately by two blinded, expert gastrointestinal pathologists. Diagnostic yield was defined as the ratio between the number of significant findings detected by EUS tissue acquisition and the total number of EUS examinations performed for a given indication.

Results: During the study period 1487 EUS procedures were performed in our clinic. Thirty patients with gastric submucosal lesions were enrolled to participate in the study. 66% were female, mean age was 62 years (range 31–88). Mean lesion size was 27 mm (range 12–60 mm). Twenty-two-gauge needles were used in 14 cases (55%) and twenty-five-gauge needles were used in 12 cases (45%). Overall diagnostic yield for 3 needle passes was higher for FNB vs. FNA for gastric submucosal lesions (78% [95% CI 66.2–88.4] vs. 44% [95% CI 12.1–75.9], P < 0.04). Among the different sites 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 median endoscopist tissue proportion between 5% and 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 effective and preferential for diagnostic submucosal lesions. 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.

Comparison of clinical characteristics and therapeutic outcomes between STER and EFR

STER (n = 15) EFR (n = 28) p

Sex, M/F

5/10

13/15

0.407

Age, year

48.4 ± 11.2

53.4 ± 9.7

0.136

Concomitant disease, %

20% (3/15)

21.4% (6/28)

1.000

Tumor size, mm

19.0 ± 8.3

15.3 ± 7.0

0.126

Operation time, min

76.7 ± 38.0

63.3 ± 24.4

0.200

Suture time, sec

296.7 ± 97.0

383.4 ± 104.0

0.011

(continued)
Comparison of clinical characteristics and therapeutic outcomes between STER and EFTR

<table>
<thead>
<tr>
<th>STER (n = 15)</th>
<th>EFTR (n = 28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of clips for suture</td>
<td>5.8 ± 1.4</td>
</tr>
<tr>
<td>Complications, %</td>
<td>6.7% (1/15)</td>
</tr>
<tr>
<td>En bloc resection, %</td>
<td>6.7% (1/15)</td>
</tr>
<tr>
<td>GIST/Leiomyoma/Schwannoma</td>
<td>11/4/0</td>
</tr>
<tr>
<td>Length of stay, d</td>
<td>6.1 ± 1.5</td>
</tr>
<tr>
<td>Cross USD</td>
<td>3260.9 ± 618.3</td>
</tr>
<tr>
<td>Follow-up time, mon</td>
<td>12.1 ± 12.2</td>
</tr>
</tbody>
</table>

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

P1885 SHORT-TERM OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER IN ELDERLY PATIENTS AND LONG-TERM OUTCOME AFTER NON-CURATIVE RESECTION

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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 unclear because of the high incidence of comorbidities and possible increased risk of complications related to ESD in this population.

Aims & 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.

Results: 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 (246 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 recurrence were compared and between the two groups.

Concerning the long-term outcome of non-curative ESD, cases performed between 2011 and 2013 were assessed.

Results: The median age was 83 years old (range: 80–92) in the elderly group and 69 years old (range: 36–78) in the non-elderly group. The rate of female patients was significantly higher in the elderly group (30.9% vs. 17.0%: p < 0.0001). Comorbidities were significantly higher in the elderly group including heart disease (24.8% vs. 10.5%: p < 0.0001), lung disease (13.6% vs. 7.4%: p = 0.002) and diabetes mellitus (3.5% vs. 1.0%: p = 0.049). Tumor location was not significantly different between the two groups. Median specimen and tumor size were the same in both groups with no significant difference: 43 mm and 15 mm, respectively. The en bloc resection rates (96.3% and 97.8%) and the curative resection rates (82.5% and 84.6%) were not significantly different. The perforation rate was not significantly different (2.44% and 3.21%). However, the postoperative bleeding rate (5.28% vs. 2.72%: p = 0.05), postoperative delirium (2.0% vs. 0.25%; p = 0.009) and pneumonia (2.0% vs. 0.25%; p = 0.009) were significantly higher in the elderly group.

Multivariate analysis, age over 80 was not an independent risk factor for postoperative bleeding, however it was the independent risk factor for postoperative delirium and postoperative pneumonia. Nineteen elderly patients and 54 non-elderly patients with non-curative resections were followed up for 3 years after ESD for the long-term outcome analysis. The percentage of patients who underwent additional surgery after ESD was 26.3% (5/19) and 51.8% (28/54) respectively (p = 0.05). Neither disease specific death nor progression to advanced gastric cancer was found in each age group. Overall survival rate 3 years after ESD was 84.6% and 82.7% respectively (p = 0.01).

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

P1886 GASTRIC INTESTINAL METAPLASIA OUTCOMES: RESULTS FROM A 17 YEAR TERTIARY CENTRE UPPER GI SURVEILLANCE PROGRAMME IN IRELAND

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Introduction: Adenocarcinoma of the stomach is the second leading cause of cancer related death in the world. Gastric intestinal metaplasia (GIM) is an important intermediate stage in the gastric cancer cascade through a series of well-defined precursor lesions including nonatrophic gastritis, multifocal atrophic gastritis, intestinal metaplasia, and dysplasia. The prevalence of GIM is unclear in many parts of the world and few studies have evaluated the rate of progression to gastric cancer in patients with GIM. There is a lack of clarity in

References
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Introduction: Adenocarcinoma of the stomach is the second leading cause of cancer related death in the world. Gastric intestinal metaplasia (GIM) is an important intermediate stage in the gastric cancer cascade through a series of well-defined precursor lesions including nonatrophic gastritis, multifocal atrophic gastritis, intestinal metaplasia, and dysplasia. The prevalence of GIM is unclear in many parts of the world and few studies have evaluated the rate of progression to gastric cancer in patients with GIM. There is a lack of clarity in
significant difference was found in GC patients without direct family history. Lauren classification and TGFβ1 genotype did not show any statistically significant results even in the group with direct family history.

Conclusion: Family history of GC affects the stage of GC and the genotype of TGFβ1-509 could be underlying mechanism in case of male. Survival analysis is undergoing.

Table: Differences of gastric cancer stage according to TGFβ1-509 polymorphism and family history (Hs) of gastric cancer

<table>
<thead>
<tr>
<th>TGFβ1-509</th>
<th>Stage I</th>
<th>Stage 2</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Hs. (+)</td>
<td>Female C/C</td>
<td>18 (78.3)</td>
<td>5 (21.7)</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Male T carrier</td>
<td>27 (64.3)</td>
<td>15 (35.7)</td>
<td>42</td>
</tr>
<tr>
<td>Male C/C</td>
<td>20 (52.6)</td>
<td>18 (47.4)</td>
<td>38</td>
<td>0.008</td>
</tr>
<tr>
<td>Male T carrier</td>
<td>76 (76.0)</td>
<td>24 (24.0)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Family Hs. (−)</td>
<td>Female C/C</td>
<td>46 (61.3)</td>
<td>29 (38.7)</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Male T carrier</td>
<td>137 (63.1)</td>
<td>80 (36.9)</td>
<td>217</td>
</tr>
<tr>
<td>Male C/C</td>
<td>91 (61.9)</td>
<td>56 (38.1)</td>
<td>147</td>
<td>0.568</td>
</tr>
<tr>
<td>Male T carrier</td>
<td>289 (64.5)</td>
<td>159 (35.5)</td>
<td>448</td>
<td></td>
</tr>
<tr>
<td>Total C/C</td>
<td>137 (61.7)</td>
<td>85 (38.3)</td>
<td>222</td>
<td>0.529</td>
</tr>
<tr>
<td>Total T carrier</td>
<td>426 (64.1)</td>
<td>239 (35.9)</td>
<td>665</td>
<td></td>
</tr>
</tbody>
</table>

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

P1888 GASTRIC ADENOCARCINOMA AND PROXIMAL POLYPYSIS OF THE STOMACH. A GENETIC STUDY OF A NEWLY DIAGNOSED FAMILY

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Introduction: Gastric adenocarcinoma and proximal polyposis of the stomach (GAPPS) has been described recently only in a few families worldwide (only one in Europe so far). Three different point mutations in promoter IB of the APC gene were identified as causal (c.-191T>C, 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 anemia. 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 IB revealed a point mutation (c.-191T>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 polyposis, low-grade and focal high-grade dysplasia. The microcytic anemia improved rapidly after surgery. The rest of family is scheduled for gastroscopy. The fundic-gland polyposis of similar distribution (with significantly lower number of polypos, without any dysplastic changes) was recently diagnosed in a 23-year-old cousin.

Conclusion: The second European family with GAPPS is presented. The recently described mutations in promoter IB 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.
References

P1889 ENDOCOSCOPIC TREATMENT FOR LATERAL SPREADING SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA
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Introduction: ESD is the one of the options of treatment even for lateral spreading (LSE) of esophageal squamous cell carcinoma (ESCC). 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 treatment for 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 ESCC, 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 (50–85.0%). Accuracy of estimated depth of invasion by ESD for ESCC 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 sub-circumferential ESD and 77.8% for circumferential ESD instead of steroid injection. Average time and duration for control of esophageal stricture by Baloon Bougie is 13.5 times and 18 weeks. In 17 surgical cases, all cases are treated by thoracoschoposcopic esophagectomy. Average size of tumor treated by surgery is 76.6 mm (50–120 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 not affected any recurrence.
Conclusion: Accuracy of estimated depth of invasion by endoscopy for lateral spreading superficial ESCC is quite low compared to normal superficial ESCC. Most of strictures after sub-circumferential ESD could be prevented by steroid injection. However control of strictures after circumferential ESD 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 circumferential lesions of lateral spreading superficial ESCC by our treatment strategy.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1890 PEPSSINOGENS AND GASTRIN-17 FOR IDENTIFICATION OF GASTRIC CANCER PRECURSOR LESIONS: THE RESULTS FROM THE GISTAR PILOT STUDY
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2Riga East Clinical University Hospital, Riga/Latvia
3Institute Of Clinical And Preventive Medicine & Faculty Of Medicine, University Of Latvia, Riga/Latvia
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Introduction: Few major international guidelines consider pepsinogen 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 possible additional marker for antral atrophy, and different tests are used 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 recommendations from the European Commission expert group were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperational diagnosis were compared with the results of postoperative pathology from ESD. Results according to the pathological diagnosis were divided into three groups: patients with early esophageal cancer and four high-grade intraepithelial neoplasia. One case was regarded as ESMGD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGD were 85.0% (34/40) and 99.8% (478/479) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/478).
Conclusion: The esophageal submucosal gland duct involvement is a kind of histopathological sign, and the endoscopic ultrasonography shows the same finding. The EUS and pathology diagnosis are consistent. EUS can be helpful, especially when the pathology cannot be performed.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1891 ULTRASONOGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND DUCT INVOLVEMENT ACCOMPANIED BY EARLY ESOPHAGEAL CARCINOMA
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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 of esophageal squamous mucosa, and deliver the various secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMGD) and its precursor lesion have not been comprehensively evaluated so far, and the series study focusing on endoscopic features of this lesion has not been reported widely. While since the 1990s, the lesions presumed to originate from ESMGDs had been described constantly in various case reports. Currently, in addition to the gold standard of histopathology, almost no more useful modality could be applied to this lesion. In our study, we considered that the ESMGD had a correlation with early esophageal cancer, and we noted that the ESMGD had special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnose ESMGD.
Aims & Methods: In order to investigate the clinical value of EUS for diagnosing Gastro-oesophageal squamous cell carcinoma, which were suggested by conventional endoscopy or biopsy, this study retrospectively analyzed the consecutive patients with early esophageal cancer diagnosed in the Endoscopy Center at the Affiliated Drum Tower Hospital, Nanjing, China from September 2009 to November 2015. The clinical data of 519 patients were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD.
Results: According to the pathological evaluation, the endoscopic ultrasonography showed that the ESMGDs were found in 519 cases (73.7%) of 719 patients, and 318 cases (61.2%) of 519 patients were already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperative diagnosis were compared with the results of postoperative pathology from ESD. Results according to the pathological diagnosis were divided into three groups: patients with early esophageal cancer and four high-grade intraepithelial neoplasia. One case was regarded as ESMGD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGD were 85.0% (34/40) and 99.8% (478/479) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/478).
Conclusion: The endoscopic ultrasonography shows the same finding. The EUS and pathology diagnosis are consistent. EUS can be helpful, especially when the pathology cannot be performed.
The expression levels of miR-211-5p were significantly decreased in vitro. miR-211 in the development of gastric cancer. The expression level of miR-211-gene in non-small cell lung cancer by targeting SRCIN [5]. Therefore, the functional 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 cells in vitro. Bioinformatics and quantitative 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 believe that miR-211-5p acted as a tumor 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

P1893 CONGENITAL OR METAPLASTIC: EVALUATION OF GASTROESOPHAGEAL NEO-JUNCTIONS TO ASSESS CARDIAC TYPE EPITHELION
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Introduction: The dramatic rise in the incidence of gastroesophageal junction (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 to find in endoscopic biopsies in children and adults. Its congenital versus metaplastic 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 metaplastic CE in the gastroesophageal neo-junction. Prospective study of patients undergoing esophagectomy due to esophageal/GEJ neoplasia between November 2012 and November 2016. Upper gastrointestinal endoscopy (UGIE) (Olympus, GIF-HQ 190) was performed 3 months after surgery; the neo-junction was evaluated with white light and Narrow band imaging (NBI); protocolocated biopsies were made (suspected areas of CE, randomized in the anastomotic site or in the remnant esophagus after cardia resection, and 3 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. UGIE: 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 oxyntocarcina 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 metaplastic CE in neo-junctions is a very frequent and early event and its presence 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

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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 are rarely assessed in a large series.

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 were 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. Size, site of the lesion, pre- and post-EMR histology, adverse events, local recurrence and survival rates were retrospectively analysed. En-bloc resection was preferred, when possible, 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.

Results: EMR of 75 NASDA was performed in 68 patients (56% en-bloc resection, 44% 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%), intramucosal adeno- carcinoma (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 and were treated by surgical (n = 2) or percutaneous (n = 1) drainage; delayed bleeding was reported in 13/75 (17.3%) resections and was successfully managed by endoscopic hemostatis (n = 12) or radiological embolization (n = 1). There was no procedure-related mortality. Follow-up was available in 61/68 patients (89.7%) after a median time of 39 months (range 3–147) from resection. Residual and recurrent adenoma were diagnosed in 9 and 6 cases, respectively; all but one were successfully retrorectively endoscopically.

Conclusion: The present series reports the results of duodenal EMR for NASDA after more than 4-year median follow-up. When biopsies had been performed before duodenal EMR for NASDA, the lesion was recorded more than 40% cases in our series, suggesting that biopsies are not routinely necessary before EMR. EMR for NASDA is effective for favorable long-term outcomes. The main limitation of duodenal EMR is the high incidence of residual/recurrent adenoma which was 27.3% in our series. Piecemeal EMR was
associated, in our series, with a higher incidence of residual/recurrent adenoma, when compared to other hospitals; 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 these events after EMR for NASDA requires the availability of interventional radiologists and surgeons with experience in retroperitoneal 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 Taewoong Medical, Inc.; Speaker and teacher for Boston Scientific, Corp. and Given Imaging. All other authors have declared no conflicts of interest.

P1895 CROSSTALK BETWEEN THE G PROTEIN-COUPLED RECEPTOR 39 AND RECEPTOR TYROSINE KINASES IN HUMAN GASTRIC CANCER

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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 pepsinogen secretion in healthy individuals to the differentiation of the tumour.

Aims & Methods: The aim of the present study is to elucidate the detailed activation regulation mechanism of GPR39-RTK crosstalk triggered by obestatin.

Results: Obestatin triggers phosphorylation of RTKs that belong mainly to the family of EGFR (EGFR, 126.7±1.1%; insulin (InsulinR, 128.6±1.3%)), Trk (TrkA, 170.9±4.0%; VEGF (VEGF-R3, 114.9±3.1%)), and the ephrin receptors ( EphA1, 135.8±5.2%; EphB4, 138.4±4.5%)), both in AGS and KATO-III cell lines. Furthermore, we observed an augment in the expression of proteases in lysates and secretomes after obestatin treatment both in AGS and KATO-III cell lines. The most outstanding increments were located in the families of: ADAMs (ADAM9, 133.9±3.7%; ADAM17, 158.9±9.6%), CTSS (CTSS, 193.4±3.9%; CTSV, 189.2±4.9%), KLKS (KLK3, 358.4±12.6%; KLK13, 365.1±7.1%) and MMPs (MMP1, 690.6±10.0%; MMP3, 273.1±0.2%). In human tissues, the overexpression of KLKs is especially abundant. However, it was observed an overexpression for EphA1 and InsulinR in adenocarcinomas when compared to healthy stomach, which was observed a decrease for Axl. Regarding the proteases, ADAMTS13 and PSEN1 were found overexpressed in healthy tissue compared to gastric adenocarcinomas. Besides, CTSX/ZP expression augmented with the differentiation of the tumour.

Conclusion: These data corroborated obestatin involvement in proliferation, migration and apoptosis and in diverse oncopgenic processes. Besides, the GPR39-RTK crossstalk is not only limited to the EGFR, but instead depends on the existing RTKs present in the tissues, and regulated the expression of proteases involved in processes and pathways already described for obestatin.

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

References

P1897 HOXD10 METHYLATION IN PLASMA WAS POTENTIALLY SERVED AS BIOMARKER OF GASTRIC CANCER AND PRECANCEROUS LESIONS

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

Introduction: Gastric cancer (GC) is the fifth most common cancer and the third leading cause of cancer-related deaths worldwide. Our previous studies have demonstrated that HoxD10 functions as a candidate tumor suppressor in GC, which is silenced through promoter hypermethylation. The diagnostic value of HoxD10 methylation in the plasma of GC patients was not determined.

Aims & Methods: We aim to evaluate whether HoxD10 promoter methylation in plasma could serve as noninvasive biomarker of GC. Methylated specific PCR (MSP) assays were used to measure HoxD10 promoter methylation in plasma of 38 healthy volunteers, 55 patients with gastric intramucosal neoplasia (GIN), 123 GC patients and 17 GC after surgery patients.

Results: We demonstrated that the rate of HoxD10 methylation was 0% in healthy controls, 34.55% in GIN, 46.34% in GC and 17.65% in GC after surgery group, respectively. The methylation rate was significantly higher in GC in or GC than in the normal control group (p < 0.01). The methylation rate of the post-treatment group was significantly lower than that in the GC group (p < 0.05). In GC patients, HoxD10 promoter methylation was correlated to tumor invasion depth (p < 0.05), which was associated in found sex, age, tumor size, TNM stage, CEAS level and H. pylori infection (p < 0.05).

Conclusion: It demonstrated that the HoxD10 promoter methylation rate in plasma dissociated DNA was increased with the progression from precancerous lesion to GC. Combined testing of HoxD10 methylation and CEA may be a great significant method for the early diagnosis of GC in high-risk populations.

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

References
Disclosure of Interest:

Cells of diffuse type via activation of muscarinic and nicotinic pathways. It also shows that ACh induces CSC properties of gastric cancer and in particular its capacity to induce the stem cell phenotype, and to study the mechanisms involved. Adenocarcinoma gastric epithelial cells MKN-45 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 counting the number and size of T using the System snapshot file in INCell analyzer 2200/6000. The involvement of different cholinergic (muscarinic and nicotinic) receptors in ACh-induced responses was studied by pharmacological approach using selective agonists and antagonists. The experiment was carried out by SNP (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 fluorescence microscopy, RT-qPCR and flow cytometry. Statistical analysis was performed using one-way ANOVA test, Kruskal-Wallis test, or two-way non-parametric ANOVA test using SPSS16.0 software.

Results: ACh at concentrations of 0.1 and 1 μM significantly increased the number and size of T as compared to control conditions (p < 0.001). Bethanecol, a selective muscarinic receptor agonist, increased the number and size of T, while the stimulatory effect of ACh on T was significantly reduced by atropine, a selective muscarinic receptor antagonist, atropine. Similarly, DMPP, a selective nicotinic receptor agonist, increased the number and size of T, while hexamethonium, a selective nicotinic receptor antagonist, decreased it. Finally, ACh induced CSC properties of 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.

P1901 MACHINE-LEARNING-BASED AUTOMATIC DIAGNOSIS SYSTEM FOR HELICOBACTER PYLORI INFECTION USING LINKED COLOR IMAGING
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Introduction: Linked color imaging (LCI), a recently developed endoscopic tech-

Aims & Methods: The aims of this study are to determine objective indicators for

References:
spraying a γ-glutamyltranspeptidase-activated fluorescent probe. Sci Transl
head and neck squamous cell carcinoma using a γ-glutamyltranspeptidase-

P1903 SEROLOGICAL CHANGES AFTER EQUIVOCAL HELICOBACTER PYLORI- SEROLOGY TEST FINDINGS DEPEND ON THE GASTRIC SECRETING ABILITY
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Introduction: The serum anti-Helicobacter pylori (Hp) IgG and serum pep-
sinogen (PG) assays are widely used for gastric cancer screening. An equivocal
serology test finding indicates IgG titer between the positive and negative test
findings.

Aims & Methods: The study aim was to evaluate the long-term, follow-up result
after an equivocal test finding on the serum anti-H. pylori IgG assay. Koreans
above 18-years-old with an equivocal serum anti-H. pylori IgG assay finding were
included. Subjects were excluded if they did not undergo H. pylori serology test,
serum PG assay, and upper gastrointestinal (UGI) endoscopy on the same day at
our center. Annual test findings were followed up using the same methods.

Results: Of the 7,178 subjects who underwent the serum assays and UGI endo-
scopy on the same day, 274 (3.8%) subjects showed an equivocal Hp serology test
and Hp infection was diagnosed in 37 subjects. Of the 7,178 subjects who underwent the serum assay and Hp serology test, 7 (0.1%) subjects showed sero-
positive test finding at the mean follow-up period of 30.6±12.4 months. Subjects
with seroconversion showed a higher initial serum PG I (p=0.023) and PG II
(p=0.036) levels than the subjects without seroconversion.

Conclusion: The equivocal Hp pylori serology test finding is not rare (3.8%) in
Korean adults, and 60% of the equivocal subjects show seroconversion within 3
years. Higher seroconversion rates in the subjects with high PG I and PG II levels
suggest that intact gastric secreting ability play a role for the survival of Hp pylori.
Therefore, equivocal subjects with increased serum PG levels should be consid-
ered as a potential seropositive subjects.

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

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P1904 WE CAN JUDGE THE EXISTENCE OF PRESENT OR PAST H. PYLORI INFECTION WITH ONLY ONE ENDOSCOPIC CARDIAC IMAGES (WHALE SHARK SIGN: WSS)

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Introduction: Several H. pylori (HP) infection related gastric findings (mucosal atrophy, metaplastic change, diffuse redness, spotted 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 all atrophic eradicated stomach. On this time, we have found out a new other ultimate useful finding showing HP infection related gastritis at gastric cardia (EG junction) including present and post HP infection. The endoscopic image of gastric cardia 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. We have judged the presence of HP infection with serum HP antibody titers on each case. The 3,233 cases their serum HP antibody titer were measured were found from Jan. 2012 to Oct. 2016. A total of 2,810 patients (HP positive) were enrolled. Fisher’s exact test was used in all statistical analyses. The judgement of HP present or past infection was done more than serum HP antibody 3 U/ml to avoid false negative results.

Results: Mean age of patients was 52.4 years old. In case of WSS positive, all their serum HP antibody titer showed more than cut-off level (3 U/ml). This means that the presence of WSS closely related to HP related gastritis. The positive predictive value (PPV) of WSS was surprisingly high (95%). According to this high PPV, we can think WSS positive cases are high risk of gastric carcinoma. This WSS mean that the presence of irregular gastric mucosal surface pattern and the presence of lymphoid hyperplasia, that showing HP infection in stomach. Especially presence of lymphoid hyperplasia at gastric cardia is most important specific sign of HP related gastritis. This lymphoid hyperplasia at gastric cardia were recognized small round whitish nodules on white light endoscopy. And this was more emphasized with image-enhanced endoscopy (Narrow Band Imaging; NBI), it looks like Whale Shark Sign. This WSS sign is very simple and easy for every gastroenterologist. It is so useful to know gastric cancer risk at gastric entrance (cardia) with the presence of very easy simple sign.

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 by gastric cancer risk.

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

P1905 SERUM PEPSONIGENO II AS A NON-INVASIVE MARKER FOR DIAGNOSIS OF HELICOBACTER PYLORI INFECTION: A PROSPECTIVE STUDY IN A COHORT OF DYSPEPTIC PATIENTS

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7Division of Internal Medicine and Gastroenterology, “Cristo Re” Hospital, Rome, Italy
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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. The 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 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 (Biohit 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 (group 1) in comparison with 430 (F 261; 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 to 7.2±1.7 in group 2; p<0.0001. 415 out of 670 patients treated with antibiotics schedules showed 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.

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 10.6µg/l the best cut-off in singling out infected from non-infected subjects.

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 = 38)</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%)</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>Cigarette smoking History smoker Past smoker Non-smoker</td>
<td>12 (3.0%)</td>
<td>15 (2.3%)</td>
<td>0.101</td>
</tr>
<tr>
<td>Alcohol drinking Heavy drinker* Social drinker Non-drinker</td>
<td>5 (8.0%)</td>
<td>6 (14.3%)</td>
<td>0.451</td>
</tr>
<tr>
<td>Upper gastrointestinal symptom</td>
<td>18 (31.0%)</td>
<td>10 (25.0%)</td>
<td>0.516</td>
</tr>
<tr>
<td>Recent intake of drugs</td>
<td>14 (24.1%)</td>
<td>8 (20.0%)</td>
<td>0.629</td>
</tr>
<tr>
<td>Comorbidity Hypertension Diabetes mellitus Others</td>
<td>17 (29.3%)</td>
<td>13 (32.5%)</td>
<td>0.736</td>
</tr>
<tr>
<td></td>
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<tr>
<td>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.</td>
<td></td>
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</table>
P1906 CAN THE UREA BREATH TEST PREDICT HELICOBACTER PYLOРИ ERADICATION?
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Introduction: The Urea 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 naïve adult patients undergoing UBT were included. Patients were deemed to be H. pylori positive if a Delta Over Baseline (DOB) value of > 2.0 % 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 6 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 43.1 ± 15.2 years, 39% male), 24% were positive (mean age 43.1 ± 14.9 years, 41.9% male). Of 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 these groups (p = 0.06 for age 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 (29.1 ± 28.1 %) compared to eradication failure (29.8 ± 29.8 %). When eradication was unsuccessful (p = 0.03, 95% CI 0.69 to 17.5), 46 (50.5%) patients were given clarithromycin-based triple therapy for 7 days. When this subset of patients was categorised into low, intermediate and high UBT groups, eradication rates were 75.0%, 46.2% 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 32.9% (p = 0.06). 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 % vs 29.8%, 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 REGIMES OF HELICOBACTER PYLOРИ ERADICATION
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Introduction: Bismuth is a heavy metal which has antimicrobial activity through inhibition of bacterial protein synthesis. Bismuth is also highly susceptible to bismuth. So the Korean guideline preferably recommends the regimen contains bismuth for the patients who failed on H. pylori eradication with the primary regimen consists of proton pump inhibitors, amoxicillin, and clarithromycin therapy. Rifaximin is one of derivatives of rifamycin with antimicrobial activity against H. pylori. It can achieve high concentrations within the gastrointestinal tract and remains active in acidic condition. So rifaximin has been studied as a treatment for persistent H. pylori infection. Rifaximin has been prescribed for replacing the bismuth of the regimen concurrently uses PPI, metronidazole, and tetracycline in Soonchunhyang University Hospital, Seoul for a while. So we reviewed the clinical outcomes of the 2 different regimens.

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 who had clarified pre-ant eradication result, which can be assured by the rapid urease test performed within the first 2 to 5 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 group patients were consecutively 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 rates. 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 show 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 PYLOРИ ERADICATION: RANDOMIZED CONTROLLED TRIAL
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Introduction: Standard triple therapy (STT) has been widely used in Helicobacter pylori infection, 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 STT group and LBT group for Koreans. Between April 2014 and April 2016, 49 patients in the STT 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, AMX (1,500 mg/day) b.i.d., AMX (1,500 mg/day) b.i.d. for 7 days. Regimen of RAC (400 or 800) was RPZ (20 mg/day) b.i.d., AMX (1,500 mg/day) b.i.d. plus CAM (400 or 800mg/day) b.i.d. for 7 days. The judgement of success or failure on eradication was done with UBT breath test on 3 months later after eradication therapy to avoid false negative results.

Results: Success rate of VAC 400 showed significantly high (416/428 = 97.2%, PPS) rather than VAC 400 (373/423 = 88.2%, PPS) (p < 0.001). The average success rate of VAC regimen was 91.7% (789/851, PPS). On the other hand, success rate of RAC 400 (190/245 = 77.6%, PPS) rather than RAC 400 (140/198 = 70.7%, PPS) (p = 0.125). The average success rate of RAC regimen was 74.5% (330/443, PPS). The average success rate of VAC regimens were 92.7% (789/851, PPS). On the other hand, average success rate of RAC regimens (330/443 = 74.5%) (p < 0.001). These results suggest that using high dose CAM with VPZ (P-CAB) plus AMX regimen might be the strongest H. pylori eradication triple therapy regimen to overcome CAM resistance.

Conclusion: High-dose CAM with Vonoprazan (P-CAB) plus AMX triple therapy regimen is the strongest H. pylori eradication therapy even if CAM resistance. We will be able to expect significantly high success rate (more than 97%) with low dose VPZ for HP 1st eradication therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.
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 groups (82.0% vs 75%, P = 0.927). 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? 

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**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.

Aims & Methods: 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 (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-naive. 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% (75/81) of resistant strains.

The eradication rate of our study, LBT was 81% (30/37) for standard therapy (p<0.05) versus 70% (25/36) for standard therapy (p<0.05). In those who are sensitive to clarithromycin, standard clarithromycin-based triple therapy achieved an acceptable eradication rate of approximately 81%. However, a high primary clarithromycin resistance 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 (75%, 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?


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**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 failure is 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.

Aims & Methods: 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. Comparison was done between sequential therapy (10-day treatment of 5 days of pantoprazole + amoxicillin followed by further 5 days of pantoprazole + clarithromycin + metronidazole) and HpET (Hp-positive patients) with an additional supplement of Lactobacillus reuteri (2 tablets/day in previous HpET treatment).

**Results:** Of 265/229 (92.5%) patients who participated 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 (75%, p = 0.09).

**Disclosure of Interest:** All authors have declared no conflicts of interest.
0.0% (p = 0.106). However, significantly higher rates of diarrhea were noted in treatment with bismuth quadruple therapy (51.3% vs 35.6%; p = 0.031; 96.9% CI). Of G2 patients, 19.24% (55.5%) performed sequential therapy first, with eradication rate improvement of 78.9% (15.1%). The remaining cases that did not respond were submitted to 14-day of quadruple therapy with PPI + amoxicillin + metronidazole + levofloxacin with success.

Conclusion: Concomitant sequential therapy with probiotic Lactobacillus reuteri protectis, within previous two weeks to final of treatment, is associated with higher HpET rate, initially or after sequential therapy failure, and lower rate of diarrhoeal side effects.

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

P1913 THE IMPACT OF CLOSTRIDIUM BUTYRICUM MIYAIRI-588 ON HELICOBACTER PYLORI ERADICATION THERAPY


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Introduction: As a country with high incidence of gastric cancer, the elimination of Helicobacter pylori (HP) is useful strategy for the prevention of gastric cancer in Japan. And the eradication therapy for HP-infected gastritis was approved as an insurance indication since 2013, and virtually all HP-infected patients were submitted to eradication therapy using proton pump inhibitor (PPI)/amoxicillin (AMPC)/clarithromycin (CAM) has been used as a regimen for the primary eradication therapy. Since HP has rapidly acquired the resistant character against CAM, the eradication rate has gradually been decreasing. Recently, vonoprazan (VPZ), a novel potassium competitive acid blocker, has been approved for HP eradication therapy. Recently, higher HP-eradication rate by VPZ+AMPC+CAM than PPI based triple therapy has been reported. However, there might be some concern for the use of VPZ, higher serum gastrin, decrease in the diversity of intestinal microbiota and increase in colitis. Therefore, PPI-based triple therapy is still used, and additive effect of probiotics has been reported in this therapy.

Aims & Methods: The aim of this study is to investigate the effect of probiotics, Clostridium butyricum Miyairi-588 (Miya-BM) on PPI-based triple therapy comparing the eradication rate and side effect with VPZ-based triple therapy. From January 2015 to December 2016, patients who received HP primary eradication therapy in our hospital were retrospectively evaluated. They were divided into three groups; 1) patients who received PPI+AMPC+CAM therapy (PPI group), and 2) patients who received VPZ+AMPC+CAM therapy (VPZ group), 3) patients who received PPI+AMPC+CAM+MBM therapy (PPI+MBM group), and the eradication rate and side effects were evaluated.

Results: The number of patients enrolled in this study were 468: 150 cases in the PPI group, 271 cases in the VPZ group and 47 cases in the PPI+MBM group. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 89.1% in the PPI+MBM group. The eradication rate in VPZ group was significantly higher than that of PPI+MBM group. The rate of side effect was 14.7% in the PPI group, 10.0% in the VPZ group and 19.1% in the PPI+MBM group, and there was no significant difference between 3 groups. Comparison shows that Clostridium butyricum Miyairi-588 can have additive effects in PPI-based triple therapy for HP.

Disclosure of Interest: O. Handa: Lecture fee from AstraZeneca K.K. and DAIICHI SANKYO COMPANY. Y. Naito: Lecture fee and scholarship donations from EA Pharma Co. Lecture fee from Takeda Pharmaceutical Company

All other authors have declared no conflicts of interest.

P1915 “CONCOMITANT” OR “SEQUENTIAL” THERAPY FOR THE ERADICATION OF HELICOBACTER PYLORI: WHICH REGIMEN COMES FIRST IN MOROCCO?

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Introduction: Morocco, an African country, the efficacy rates of the concomitant versus the sequential H. pylori eradication therapy. Our prospective randomized study included 164 patients with newly diagnosed H. pylori infection, randomized to receive a 14-day concomitant or 10-day sequential therapy. Treatment outcome was assessed by 13-cure breath test at 14 weeks after therapy. Intention to treat (ITT) and per protocol (PP) analysis of the eradication rates were performed.

Secondary end points included patient compliance and safety. Results: The concomitant therapy group achieved statistically significant higher eradication rates when compared with the sequential treatment group, both in the ITT and in the PP analysis (86.6% versus 79.9%, p<0.002, and 90.6% versus 72.1%, p<0.001, respectively), after adjusting for age, gender, smoking status, and the presence or not of concomitant eradication in whom showed played excellent compliance rates (99.5% for the concomitant therapy group and 96.2% for the sequential therapy group, p<0.007). Regarding treatment safety, major adverse events that led to the discontinuation of both regimens were few, with no statistical difference between the two groups (6.2% for the concomitant therapy group and 3.1% for the sequential therapy group).

Conclusion: Concomitant therapy led to statistically significant higher eradication rates over sequential therapy. Both therapies showed excellent compliance and an acceptable safety profile. The concomitant quadruple therapy scheme should be the adopted for first-line H. pylori eradication in Morocco.

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

P1916 PROSPECTIVE COMPARATIVE STUDY OF TWO FIRST-LINE REGIMENS FOR HELICOBACTER PYLORI ERADICATION: 14-DAYS NON-BISMUTH QUADRUPLE OPTIMIZED CONCOMITANT THERAPY VERSUS 10-DAYS BISMUTH-CONTAINING QUADRUPLE THERAPY USING A THREE-IN-ONE CAPSULE


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Introduction: The Maastricht V/Florence Consensus Report recommends bismuth quadruple or non-bismuth quadruple concomitant therapies as first-line treatments for H pylori infection, in areas where clarithromycin resistance is high (>15%). Head-to-head studies between both therapies are needed.

Aims & Methods: We aimed to compare compliance, efficacy and adverse effects of two first-line H pylori eradication therapies in a high clarithromycin resistance rate.
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 ± 19.89 years) were included. OCAM were prescribed in 103 and 3–1-OBMT in 113. No differences in sex, age 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 maintained in 95% with OCAM and in 93.53% with 3–1-OBMT (p=0.064). 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. Conclusion: In 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

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

Conclusion: Hp infection management at primary care level is inappropriate with low eradication rates. 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
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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 signalling pathway is highly conserved, to maintain intestinal stem cells and to differentiate to secretory cells such as goblet cell. Moreover, it has been reported that combination of VPA and CHIR 99021 (GSK3β inhibitor) has powerful proliferative effect for intestinal stem cells, such as Lgr 5+ cells. One of the major difficulties for RIGS studies is the fact that crypts are not easily accessed and cultured with traditional means. 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 C57BL6 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-differentiated goblet, Paneth cells, + stem cells (quiescence stem cells, BM1 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, and 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 differentiating goblet cells and stem cells.

Conclusion: VPA and CHIR 99021 may ameliorate RIGS in ex-vivo mouse enteroid, through +reservoir 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.

References
P1919 PREVALENCE OF CELIAC DISEASE AMONG RELATIVES OF ADULT CELIAC DISEASE PATIENTS DIAGNOSED IN CHILDHOOD

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Introduction: Celiac disease affects 1–2% of 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 654 adults with childhood diagnosis. 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 BMI (19.0 vs 20.8, p = 0.005). They also had a trend to have less symptoms (44% vs 85%, p = 0.001) than clinically detected patients (n = 186). They also had a trend to have less total vitrual alopecia (18% vs 32%, p = 0.075) and anemia (18% vs 32%, p = 0.072). The groups did not differ in gender, current age (median 26.5 vs 27.0 yr, p = 0.95) or education (41.5% vs 40.0%, p = 0.70). They had a trend to less from the diagnosis till current health or concern about health, clinical symptoms, strict GFD (74% vs 80%, p = 0.16), lifestyle restrictions caused by GFD, presence of celiac disease-related complications, physical activity, fertility or GSRS and PGWB scores. However, screen-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 disease 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.

Reference
NICE Quality Standards (QS134) for Coeliac Disease (October 2016) NICE guidelines NG20 (September 2015).
P1924 CIRCULATING EXTRACELLULAR VESICLES, A NOVEL MECHANISM OF ENDOCINE CELLULAR CROSS-TALK, ARE INCREASED IN NEWLY DIAGNOSED CELIAC DISEASE PATIENTS


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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 pathologic 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, triggered 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 whole 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 CD patients (mean age 42.4 ± 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 Corazzi-Villanacci classification. Mean anti-tTG levels at diagnosis were 6.9 ± ± 3 times ULN. Mean number of total circulating EVs was significantly higher in CD than in controls (59895 ± 72482 vs 14383 ± 1008 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 ± 1810 respectively, p = ns). On the contrary, CD45 + EVs, of leukocyte origin, showed a significantly higher number on the contrary patients vs. controls (460 ± 492 vs. 119 ± 150 p = 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.

<table>
<thead>
<tr>
<th></th>
<th>N-CD</th>
<th>NRCD</th>
<th>CD-GFD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROS production (µmol.min⁻¹)</td>
<td>0.21 ± 0.03*</td>
<td>0.22 ± 0.04*</td>
<td>0.17 ± 0.03*</td>
<td>*&lt; 0.05</td>
</tr>
<tr>
<td>TAC levels (mM)</td>
<td>1.07 ± 0.30</td>
<td>1.16 ± 0.47</td>
<td>1.68 ± 0.54*</td>
<td>&lt; 0.01, &lt; 0.05</td>
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<tr>
<td>GSH levels (µmol.L⁻¹)</td>
<td>554.40 ± 37.46*</td>
<td>507.80 ± 81.73*</td>
<td>634.00 ± 187.80*</td>
<td>&lt; 0.001, &lt; 0.0001</td>
</tr>
<tr>
<td>Peroxidized levels (µM)</td>
<td>3.59 ± 0.67*</td>
<td>3.46 ± 0.87*</td>
<td>2.82 ± 0.47*</td>
<td>&lt; 0.01, &lt; 0.05</td>
</tr>
<tr>
<td>Oxidized proteins levels (nmol.mg⁻¹ protein)</td>
<td>1.42 ± 0.83*</td>
<td>1.23 ± 0.53*</td>
<td>0.91 ± 0.20*</td>
<td>&lt; 0.001, &lt; 0.05</td>
</tr>
<tr>
<td>Plasma nitrites concentrations (µmol.L⁻¹)</td>
<td>97.74 ± 30.76*</td>
<td>54.61 ± 14.57*</td>
<td>22.21 ± 9.62*</td>
<td>&lt; 0.001, 0.1</td>
</tr>
</tbody>
</table>

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 CD8+ T cells, with a bias towards IFN-γ+ T cells, compared to the control group, which suggests that the presence of gluten induces a Th1 lymphocyte bias. Moreover, gluten-free diet can lead to a decrease in the number of IFN-γ+ T cells, which indicates the potential of gluten-free diet to modulate the immune response in celiac disease.

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

P1925 COELIAC DISEASE AND REPRODUCTIVE DISORDERS: IS THERE ANY CORRELATION

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Introduction: The coeliac disease is an autoimmune enteropathy induced by the ingestion of gliadin, which is a ubiquitous protein (Corn, barley, rye), that in genetically predisposed individuals, triggers the immune system leading to atrophic lesions of the small intestine, which can be accompanied by extraintestinal manifestations.

Aims & Methods: The aim of our study was to compare the two groups of patients with and without CD to evaluate the frequency of reproductive disorders in the two groups.

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 32.2±5.2 years ranging from 13 to 59 years old. The diagnosis of coeliac disease was based on: Histology (severe or partial villous atrophy with intraepithelial lymphocytosis exceeding 30%), the antidiomysial antibodies and/or antitransglutaminase antibodies positive. The reproductive disorders were never isolated but always associated with digestive or extradigestive signs at the time of the diagnosis of coeliac disease. These disorders were divided into two groups: 1/11 cases (19%), secondary amenorrhea and/or IUGR in 6 cases (10.3%), premature labour one case, and one case was delivered a baby in term after a repeated premature deliveries. 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

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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: The study group included 81 adult patients with a female: male ratio of 38yrs/ 47yrs, mean age 40.0±2.12 years. A total of 46.1% 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 ≥ 47yrs). Marb-Oberhuber 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±1.67.458 u/mL vs 162.02±10.167 u/mL, P = 0.001) and IgA anti-gliadin antibodies (IgA-AGA) levels (61.83±6.941 u/mL vs 77.15±71.02 u/mL, P = 0.001) correlated with intestinal villous atrophy (Marsh 3b-3c) in CD patients by Spearman rank correlation. Among symptomatic, 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 = 0.516, P = 0.004), IgA-AGA (r = -0.301, P = 0.006) and Marsh 3b-3c lesions (P = 0.0048). Among biological markers included in the statistical analysis, low iron levels (cut off 30 mg/dl), hypocholesterolemia and low protein levels were associated with Marsh 3b lesions (P = 0.008) and elevated IgT-AGA 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 titer >160 was nearly always associated with severe CD histopathology. GI and non-GI symptoms are not reliable predictors of CD.

Disclosure of Interest: All authors have declared no conflicts of interest.
recommendations. Paraffin embedded biopsy samples were assessed for villous height (VH), crypt depth (CD) and VH:CD ratio. The corre-
sponding frozen duodenal samples were assessed for duodenal IgA deposits tar-
getting transglutaminase 2 (TG2-IgA), density of CD3 (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 ± 50, CD 50 ± 26, and VH:CD ratio critically low). As expected 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 diagnosis was 12 weeks (SD 37 days), with up to 59 patients (80%) 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. Haematomics (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 (7%) 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 RRT 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
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Introduction: We previously reported that small-bowel capsule endoscopy (CE) is effective in diagnosing small-bowel lesions with occult obscure gastrointestinal bleeding (OGIB) (Gastroenterol Rex Pract. 2013). However, there is no consensus regarding the management of occult OGIB patients without bleeding source revealed by CE.

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

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
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Introduction: Quality standards in coeliac disease management were recently published by the National Institute for Health and Care Excellence2. 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) pathway1. 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 deficiency1).

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 information. Data 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 diagnosis was 12 weeks (SD 37 days), with up to 59 patients (80%) 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. Haematomics (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 (7%) 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 RRT 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
bleeding rate with or without treatment, the rate of anaemia exacerbation (hemo-
globin <10 g/dl), 5 year overall survival rate (OS), and 5 year disease specific survival rate (DSS). Occult OGIB was 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. Result: 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 recurrent bleeding source lesions (Group A) were as follows: angioectasia 61 patients (Yano-Yamamoto classification Type 1a 37 patients, Type Ib 24 patients), non-specific ulcers, gastrointestinal anti-inflammatory drugs-independent ulcer, 3 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 source lesions (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), this was 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 was 100%. One patient in Group A died of a primary small-bowel cancer.

Conclusion: Conclusion: Long-term outcomes with occult OGIB patients were good except malignant tumor, because overt bleeding and/or anaemia exacerbation did not occur within the follow-up period. Thus, occult OGIB patients without bleeding source lesions, including Type 1a angioectasia without oozing, and erythema, are unnecessary to follow-up with CE in occult OGIB patients.

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

P1932 A PILOT STUDY INVESTIGATING THE VALUE OF FAEecal IMMUNOCHEMICAL TEST (FIT) WHEN INVESTIGATION ANAEMIA OR OCCULT GASTROINTESTINAL BLEEDING WITH SMALL BOWEL CAPSule Endoscopy

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Introduction: Small bowel capsule endoscopy (SBCE) is a very useful method of investigating iron-deficient anaemia, or occult gastrointestinal (GI) bleeding. It can detect lesions 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 referred for SBCE with the indication of anaemia or occult GI bleeding. Baseline patient characteristics were obtained including age, gender, history of radiation therapy, disease, transfusion requirements and use of anti-coagulants/anti-platelets. 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 used in this 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 >50ng/ml. 46% of patients, had positive findings at SBCE. 9/12 (75%) of patients with a FIT level >50ng/ml had positive findings at capsule endoscopy compared to 5/28 (17.8%) for FIT <50 ng/ml, p value = 0.02, 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-HB enteritis, 1/12 (16.7%) small bowel tumour, 1/12 (16.7%) melanoma, with no clear source. In addition there was a good correlation between FIT and Haemoglobin levels. 60% of patients with FIT >90ng/ml were anaemic (Hb <11.5 g/dl), compared to 17% with FIT <90ng/ml, p value = 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 = 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 benefit from referral.

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

P1933 VIDEO CAPSULE ENDOSCOPY IN THE ASSESSMENT OF PORTAL HYPERTENSIVE ENTEROPATHY

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Introduction: The features of the portal hypertension enteropathy (PHE) vary from mucosal to submucosal ulceration. The prevalence and the correlation of factors that predict the development of PHE are not fully understood.

Aims & Methods: Our aim in this study is to examine the prevalence of the different manifestations portal hypertensive enteropathy and its 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)(table 1A. The average MELD score was 13.86(±6.66). VCE detected small bowel lesions in 71% of the patients while the features of portal hypertensive enteropathy were found in 5% from the total cohort. AVMs and Inflammatory changes were the most common findings, followed by bleeding. 13 patients found to have two or more lesions by VCE. More than 50% of the lesions were vascular in nature (table A1). The percentage of the CTP A, CTP B and CTP C was 46%, 42% and 12% respectively. The odds of finding portal hypertensive enteropathy in decompensated cirrhosis is twice that in compensated cirrhosis (odd ratio of 2.0) table 1B. 45 patients had negative EGD exam for any active bleeding, esophagael varices (EV), portal hypertensive gastropathy(PHG) or gastric varices(GV). 31 of them (69%) had features of portal hypertensive enteropathy in their VCE. table 1B.

Table 1A

<table>
<thead>
<tr>
<th>Number &amp; (%)</th>
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<tbody>
<tr>
<td>Total number of patients</td>
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<tr>
<td>Causes of cirrhosis:</td>
</tr>
<tr>
<td>Congestive Hepatitis</td>
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<tr>
<td>Cryptogenic</td>
</tr>
<tr>
<td>HCV</td>
</tr>
<tr>
<td>Alcohol</td>
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<tr>
<td>Hemochromatosis</td>
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<tr>
<td>NASH</td>
</tr>
<tr>
<td>PSC</td>
</tr>
<tr>
<td>PBC</td>
</tr>
<tr>
<td>AIH</td>
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<tr>
<td>Age</td>
</tr>
<tr>
<td>MELD score</td>
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<td>Demographic: Male</td>
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<tr>
<td>Female</td>
</tr>
<tr>
<td>Whites</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>African-American</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Small intestine lesions</td>
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<tr>
<td>Portal hypertensive enteropathy (PHE)</td>
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<tr>
<td>Vascular lesions: AVMs</td>
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<td>Varices</td>
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<td>Bleeding</td>
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<td>Red spot</td>
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Table 1B

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<th>P-value</th>
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<tr>
<td>CTP-A</td>
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<td>26</td>
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<tr>
<td>CTP-B + C</td>
<td>54</td>
<td>39</td>
<td>2.0</td>
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(continued)
Results: Data were collected from 1052 patients with obscure gastrointestinal bleeding associated with overt SBB using a case-crossover design. The Japanese Association for Capsule Endoscopy (JACE) has recommended examining patients with overt SBB who have previously undergone DBE using endoscopy including DBE (within less than 48 hours) and/or contrast-enhanced computed tomography (CECT) was performed in all patients. The bleeding source was identified in 17 of 19 patients (89.4%). The bleeding source were diverticula, and polyps. Loxoprofen-associated SBB was caused by mostly loxoprofen-induced injuries. The aim of this study is to evaluate long-term outcomes in patients with negative balloon assisted enteroscopy for suspected overt small bowel bleeding (obscure-overt gastrointestinal bleeding). The results were published among Western and Eastern studies.

Conclusion: VCE detected small bowel lesions in 71% in our cohort. There is a high prevalence of PHE in patients with decompensated cirrhosis. Vascular lesions are the most common finding in the small bowel of this population. Disclosure of Interest: All authors have declared no conflicts of interest.

References

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 OBSURE GASTROINTESTINAL BLEEDING?

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

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 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 developed 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 polyp were considered negative. The primary endpoint was the difference in the rate of positive CE findings between patients who continued and those who discontinued antithrombotic agents. Furthermore, a propensity score analysis was performed to reduce the effects of selection bias and potential confounding factors. The secondary endpoint was to assess the predictive factors for the positive CE findings by using multiple logistic regression.

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 findings did not differ between the two groups. Even after propensity score matching, discontinuation of antithrombotic agents did not affect the 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 1.04 (95% confidence interval, 0.97-1.08). 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.

References

P1938 EFFICACY OF REBAMIPIDE TO PREVENT LOW-DOSE ASPIRIN-INDUCED SMALL INTESTINAL INJURY

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Introduction: Long-term use of low-dose aspirin (LDA) is associated with development of peptic ulcers, gastrointestinal bleeding, enteropathy. For prevention of LDA-induced small intestinal mucosal injury, there is no established prophylactic agent (PPI) that are the first-line therapy according to several guidelines. However, gastric acid suppressants, like PPI, do not prevent small intestinal mucosal injury. The latest 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 enteric-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). Gastric endoscopy and capsule endoscopy were performed, and the fecal occult blood reaction and fecal 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 increased significantly in Group PPI, they did not increase in Group RBD. The mean number of small intestinal 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
Aims & Methods: Patients suspected of CMI referred were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography or MR-angiography, and a mucosal ischemia test (visible light spectroscopy or tonometry), all patients were discussed in a specialized CMI multidisciplinary meeting resulting in an expert based consensus diagnosis. All patients with a CMI consensus diagnosis were planned for treatment (revascularization or endovascular therapy). Treatment was performed if successful treatment resulted in durable symptom relief. The 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 in 9% of the patients with low risk, in 40% of the patients with intermediate risk and in 94% of the patients with high risk of CMI. Diagnosis of CMI was more frequent in patients with abdominal symptoms (70/92) compared to patients with only gastrointestinal symptoms (55/104). In 20% of the patients with abdominal symptoms no CMI consensus diagnosis was obtained. A definitive diagnosis of CMI after a positive response therapy was achieved in 108 (44%) patients, which resulted in 96 (39%) patients with a CMI consensus diagnosis were planned for treatment (revascularization or endovascular therapy).

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.

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

References:
BACKGROUND:

Endoscopists may need to perform repeat endoscopy with argon plasma coagulation (APC) in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodysplasias.

METHODS:

The study included 197 patients with proven angiodysplasia as cause for anaemia (mean age 43.6 years; 58% male). Median follow-up was 40 years old [13,79]. The following chart summarizes the digestive manifestations (%):

<table>
<thead>
<tr>
<th>Manifestation</th>
<th>Number of cases</th>
<th>Digestive manifestations (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celiac disease</td>
<td>49</td>
<td>10.36%</td>
</tr>
<tr>
<td>Systemic lupus erythematous</td>
<td>27</td>
<td>8.33%</td>
</tr>
<tr>
<td>Systemic sclerosis</td>
<td>26</td>
<td>8.33%</td>
</tr>
<tr>
<td>Behcet’s disease</td>
<td>22</td>
<td>22.85%</td>
</tr>
<tr>
<td>Splenic syndrome</td>
<td>15</td>
<td>12.15%</td>
</tr>
<tr>
<td>Wegener’s granulomatosis</td>
<td>4</td>
<td>21.60%</td>
</tr>
<tr>
<td>Antiphospholipid Anti body Syndrome</td>
<td>18</td>
<td>12.15%</td>
</tr>
<tr>
<td>Amyloidosis</td>
<td>3</td>
<td>1.95%</td>
</tr>
<tr>
<td>Churg-Strauss syndrome</td>
<td>2</td>
<td>20.96%</td>
</tr>
<tr>
<td>Dermatomyositis</td>
<td>3</td>
<td>25.80%</td>
</tr>
<tr>
<td>Microscopic Polyangiitis</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Horton’s disease</td>
<td>2</td>
<td>20.96%</td>
</tr>
<tr>
<td>Takayasu arteritis</td>
<td>3</td>
<td>3.22%</td>
</tr>
<tr>
<td>Cryoglobulinaemic vasculitis</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Henoch-Schönlein purpura</td>
<td>5</td>
<td>3.010%</td>
</tr>
<tr>
<td>Leucocytoclastic vasculitis</td>
<td>2</td>
<td>12.9%</td>
</tr>
</tbody>
</table>

Patients symptoms and clinical findings were: Abdominal pain in 32 cases (22.9%), nausea and vomiting in 7 cases (5%), stool modification in 15 cases (10.7%), jaundice in 4 cases (2.9%), dysphagia in cases (7.1%), hematemegaly in 4 cases (2.9%), splenomegaly in 8 cases (5.7%), ascitis in 13 cases (9.3%), digestive bleeding in 17 cases (12.1%). Laboratory findings: elevated liver enzymes in 18 cases (15.9%), alkaline phosphatase elevation in 15 cases (19.2%). Radiological findings: 17 ascitis (14.4%), 12 digestive thickening (10.16%), 6 hematemegaly (5.08%), 14 splenomegaly (11.86%), 2 portal cavernoma (1.6%), 3 portal thrombosis (2.5%), 4 esophageal distension (3.4%), acalculous cholecystitis in 2 cases (1.6%), 2 portal hypertension (1.6%), steatosis in cases (2.5%), 3 hepatic angioma (2.5%), acute pancreatitis in 2 cases (1.6%), 2 mesenteric ischemia (1.6%), 1 Budd Chiari (0.8%), 1 hepatic carcinoma (1.8%). Upper gastrointestinal Endoscopy findings: hiatus hernia in 3 cases (8.6%), esophagitis in 11 cases (31.4%), esophageal varices in 2 cases (5.7%), Gastritis in 14 cases (37.8%), duodenitis in 14 cases (37.8%), ulcers in 3 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 polyp (8.3%), 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 representative systemic diseases, the main symptom is abdominal pain probably related to medication, 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.

NUTRITION III - HALL 7

P1944 CHANGES IN LEVELS OF VITAMIN D IN OBESE PATIENTS SUBMITTED TO BARIATRIC SURGERY

A. Vaz, R. Guerreiro, D. Sousa, P. Queiroz, T. Gago, J. Roseira, H. Guerreiro

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 submitted to RYGB for obesity. We measured anthropometric variables and the levels of 25-hydroxyvitamin 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±13.1 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 surgery, 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

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Introduction: Bariatric surgery is established as an excellent therapy for obesity. However, lower degrees of overweight 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 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 (%TWBL) 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).

Table 1: Excess weight treatment with an IGB in patients with overweight and grade I obesity

<table>
<thead>
<tr>
<th>Total group</th>
<th>Overweight</th>
<th>Grade I Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 717)</td>
<td>(n = 131)</td>
<td>(n = 586)</td>
</tr>
<tr>
<td>Body weight (kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>88.55 ± 10.14</td>
<td>78.90 ± 6.56</td>
</tr>
<tr>
<td>Final</td>
<td>73.20 ± 10.78</td>
<td>66.73 ± 8.13</td>
</tr>
<tr>
<td>Reduction</td>
<td>15.35 ± 6.49</td>
<td>12.16 ± 4.76</td>
</tr>
<tr>
<td>%TWBL</td>
<td>17.36 ± 7.08</td>
<td>15.51 ± 6.11</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>32.05 ± 2.04</td>
<td>28.73 ± 0.94</td>
</tr>
<tr>
<td>Final</td>
<td>26.46 ± 2.43</td>
<td>24.26 ± 1.85</td>
</tr>
<tr>
<td>Reduction</td>
<td>5.95 ± 2.36</td>
<td>4.46 ± 1.86</td>
</tr>
<tr>
<td>Excess weight (kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>19.77 ± 6.04</td>
<td>10.52 ± 2.7</td>
</tr>
<tr>
<td>Final</td>
<td>4.42 ± 7.44</td>
<td>−1.65 ± 5.09</td>
</tr>
<tr>
<td>% EWL</td>
<td>83.97 ± 41.89</td>
<td>122.77 ± 57.89</td>
</tr>
<tr>
<td>%TWBL &lt; 10%</td>
<td>106(14.78%)</td>
<td>22(15.27%)</td>
</tr>
<tr>
<td>&gt;10%</td>
<td>611(85.22%)</td>
<td>109(83.21%)</td>
</tr>
<tr>
<td>%EWL(m;%)</td>
<td>&lt;25%</td>
<td>324(4.46%)</td>
</tr>
<tr>
<td>≥25%</td>
<td>683(95.54%)</td>
<td>129(98.48%)</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>&lt;0.0001</td>
<td></td>
</tr>
<tr>
<td>&lt;25 kg/m²</td>
<td>213(29.71%)</td>
<td>90 (73.28%)</td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB = intragastric balloon; BMI = body mass index; TWBL = total body weight loss; EWL = excess weight loss. Success rates (criteria: ≥10% TWBL or ≥25% EWL).

Conclusion: Endoscopic treatment of obesity with an IGB shows to be an excellent therapeutic option to non elective patients for bariatric surgery according to BMI criterion.

Disclosure of Interest: M. Galvao Neto: I declare that I have received personal fees from FRACHTYL 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

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Introduction: Intragastric balloons (IGB) are already used worldwide in the treatment of overweight and obesity, with established success. The Spatz3® adjustable balloon brings the possibility of balloon volume control during all the treatment, possibly reducing the risk of early removal due to intolerance and greater weight loss compared to traditional IGBs.

Aims & Methods: We aimed to analyze the initial 25 months results regarding weight loss and complications with Spatz3® adjustable intragastric 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 (%TWBL) and percent excess weight loss (%EWL). Data were analyzed using descriptive statistic and the Student t test. The level of significance was set at p < 0.05.

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). 180 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 decreased from 107.67 to 90.16 kg (p < 0.0001) and excess weight diminished from 36.79 to 19.27 kg (p < 0.0001). Eighty-six patients underwent upward adjustment. The adjustment resulted in a further mean weight loss of 4.2 kg (p < 0.0001) and excess weight diminished from 107.67 to 90.16 kg (p = 0.079). 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: This study shows that Spatz3® IGB treatment is an effective procedure for weight reduction, without mortality but with higher morbidity rates when compared to traditional IGBs. Even more, the downward adjustment treatment seems to be 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 FRACHTYL 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**

T. F. Souza1, R.J.F. Fernandez2, E. Usuy3, T. F. Teixeira4, M. Galvao Neto5, A. F. Teixeira1, E. Grecco6

**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. Scaduto Sanches, 71.1% of patients experience nausea and 57.9% have vomiting requiring treatment. 65.61% of patients showed that nausea and vomiting are the fifth leading cause of early accessory expellation. The reported symptoms are more common in first 3 days post implant.

**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 overweight patients treated with intragastric balloon, between November 2013 to December 2016 in the Department of Digestive Endoscopy of the Hospital Mario Covas. The implant was performed by 3 endoscopists with experience in bariatric endoscopy, all procedures were performed under moderate sedation and anesthetist’s care.

All other authors have declared no conflicts of interest.

**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, 67.58% presents frequency of 0 to 5 times per day and 32.42% of the patients showed that nausea and vomiting 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.

**Conclusion:** Gastric balloon causes vomiting in the early days post implant in 74.41% of patients and cause dehydration requiring Intravenous fluid therapy in 74.41% of patients and cause dehydration requiring IVF therapy in 74.41%

**Aim & Methods:** To evaluate the efficacy and complications of excess weight treatment with an IGB has 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 was analyzed using descriptive statistical methods, the Student’s 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 0.006% (n=4); upper gastrointestinal bleeding was 0.05% (n=3); Wernicke Korsakov 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) (131.54% 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.

**Conclusion:** Endoscopic treatment of excess weight with an IGB has been established as an excellent therapeutic option.
Disclosure of Interest: M. Galvao Neto: I received personal fees from FRACTYL L.L.C. and grants 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

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Introduction: Main factors contributing to the development of irritable bowel syndrome (IBS) includes the altered visceral perception, intestinal low-grade inflammation and psychosocial factors. Recent research has revealed a relationship between intake of FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols) and abdominal complaints. A diet low in FODMAPs can reduce symptoms in patients with IBS but mechan- isms were poorly understood.

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 h/day for 10 days) or sham stress (basal condition; 1 h/day for 10 days) with an oral gavage of saline or saline solution containing FOS (8 g/kg) for 2 weeks. Then visceral sensitivity was measured by abdominal withdrawal reflex (AWR) in response to colorectal distension (CRD) and histological analyses were used to evaluate mucosal inflammation. Immunohistochemistry, reverse trans- scriptase, and gas chromatography were used to estimate mucosal mast cell, levels of cytokines (IL-6, IL-23, TNF-α, IL-10, IL-1β) and SCFA, respectively.

Results: Visceral hypersensitivity, mucosal mast cell (12.3 ± 2.61 vs. 8.33 ± 3.55, P < 0.01) were observed in WAS-administered mice compared with saline-administered mice. In WAS condition, cytokine expression were 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 ± 1.0, P < 0.01), propionic (0.48 ± 0.09 vs. 0.33 ± 0.0, P < 0.01) and butyric (0.50 ± 0.03 vs. 0.39 ± 0.03, P < 0.05) SCFA were 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 linked with the production of SCFA in the gut which involved in the regulation of sensitivity and intestinal immunity 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

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Introduction: Several formulations consisting of live lactic acid bacteria, including bifidobacteria, are marketed as probiotic products. However, these products are often poorly defined and insight into their mode of action is lacking. This hampers further application in treating diseases, limits comparative studies, and pre- vents predicting their efficacy. We have previously addressed this by providing genomic and functional characterization of single commercial strains (Kainkainen 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 (CDSL-SACCO System, Zelo Buon Persico - Lodi/ITALY).

Aims & Methods: The individual strains of multispecies product VSL#3 were extracted from their DNA samples by ethanol precipitation. The DNA was subjected to paired-end Illumina sequencing using a HiSeq2000 platform, assembled and annotated as previously described (Douillard et al 2013). The next generation sequencing provided high quality genomes of all 8 strains that are components of the multispecies product VSL#3. Detailed phylo- genetic and genomic analysis confirmed the species composition to be as indi- cated in the VSL#3 product specification and showed the 8 strains of this multispecies product to be highly related and in need for further official taxonomic resolution. The anno- tated genes of the assembled genomes were used to identify genes involved in potential probiotic functions. Full sets of genes for the production of tight adher- ence pili were observed in the Bifidobacterium spp. and are known to produce biofilms that we recently found to mediate mucosal adhesion and 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 surface-dependent pili 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). 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

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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) disorders, but despite the advancements, 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: multidiscipli- nary team, scientific rigor but simple words, people attraction, cuiding communciation, in Parma and neighbouring Cities. Specialists in Gastroenterology, Anatomic Pathology, Radiology, Surgery, Biochemistry, Nutrition, together with pre- and post-graduated Students, discussed various aspects of gastrointestinal diseases. Selected people were examined by ultrasound, Municipality and civil society were also involved to ensure organiza- tional efficiency. The most discussed topics regarded dyspepsia, gastritis, helicobacter pylor infection, gastrointestinal reflux disease, alcohol abuse, cir- rhosis, hepatitis, intestinal bowel disease and polyposis, GI cancer, food allergy and intolerance, optimal nutrition in health and disease. The event performed in the main square of Parma lasted two consecutive days and was attended by about 3,000 people, most of which also filled a ques- tionnaire. A total of 120 ultrasound examinations were performed. In neighbour- ing 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 the 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 CHILDREN AFTER ADMINISTRATION OF OLGOFRUCTOSE-ENRICHED INULIN INTO GLUTEN-FREE DIET—RESULTS OF RANDOMIZED, PLACEBO-CONTROLLED PILOT TRIAL

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Introduction: Amino acids are essential metabolites which play a role as protein constituents. Moreover, amino acids and their metabolites feature in regulation of anabolic 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 children strictly following GFD at least 1 year. We randomized 34 children diagnosed with CD into a group receiving 10g of OEI daily and a placebo (maltodextrin) group during a 12-week nutritional intervention. Amino acid profiles in urine and plasma was analysed via EZ:Fast®1-2 derivatisation method followed by 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, arginine, lysine, histidine, leucine, aspartic acid, alanine, citrulline, 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 many 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 glutamic acid can stimulate growth of the intestinal mucosa by itself or by the involvement in the synthesis of citrulline 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.

Reference

P1955 LONG-TERM TRENDS IN HEMATOLOGICAL AND NUTRITIONAL STATUS AFTER GASTRECTOMY FOR GASTRIC CANCER

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Introduction: The quality of life and nutritional management after gastrectomy are major issues for gastric cancer patients, as is oncological surveillance. 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, malnutrition, rapid intestinal transit time, and bacterial overgrowth. Timely, appropriate nutritional intervention can minimize diet intolerance, weight loss, and micrometabolic 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 hematological and nutritional parameters evaluated included preoperative hemoglobin, ferritin, vitamin B12, total protein, albumin, total cholesterol, triglyceride, 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 intervention 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

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Introduction: Celiac disease is an autoimmune enteropathy induced by the ingestion of gluten. The classical form has become very common in the majority. Currently, the most frequent forms of presentation are extraintestinal 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 patients 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 followed in the departement of diseases of the digestive tract of the Ibn Sina Hospital in Rabat, over a period of 18 years.

In 173 patients with celiac disease, 58 patients had reproductive disorders. 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 amenorrhea in 6 cases 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 amenorrhoea 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 following 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 4 cases development of 6 cases development of secondary sex characteristics in 2 cases, fertility resumption in one case, initiation of cycles after primary amenorrhoea 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 miscarriage 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 amenorrhea in 6 cases 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 amenorrhoea in 2 cases and intrauterine fetal death in 1 case. All our patients have had a gluten-free diet.

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 and constituted in 90% of the case. These disorders are thus reversible under this diet.

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

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P1957 ROLE OF VAGAL AFFERENTS ON HIGH FAT DIET INDUCED ALTERATIONS IN RAT BEHAVIOUR AND GUT MOTILITY

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P1958 OPTIMAL NUTRITIONAL ROUTE FOLLOWING TOTAL GASTRECTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Total gastrectomy can profoundly influence patients’ nutritional status and dietary patterns. This review aims to summarize the various nutritional options available post-operatively, namely total parenteral nutrition (TPN), or enteral nutrition (EN) either via the nasojejunal (NJ) or feeding jejunostomy (JEJ) route. The aim of this review was to determine the optimal nutritional route after total gastrectomy for patients with or without a jejunal feeding jejunostomy.

Aims & Methods: PubMed, MEDLINE and the Cochrane Library (January 1985 to January 2017) were systematically searched for randomized controlled trials comparing various nutritional routes after total gastrectomy. The primary outcome measure was morbidity. The Cochrane risk of bias tool was used to assess methodological quality of included trials.

Results: Six studies involving 353 patients (median age 62 years, 217 males, 170 TPN, 96 NJ, 87 JEJ) who underwent total gastrectomy were analysed. Overall morbidity was significantly greater in patients who received TPN compared with EN or NJ (OR 4.59, 95%CI 1.74–12.10, p = 0.002). There was a trend towards greater mortality in patients who received TPN compared with EN (OR 1.90, 95%CI 0.64–5.70, p = 0.25). When EN was sub-analysed according to NJ or JEJ, morbidity was significantly greater in patients who received EN compared with TPN (OR 5.1, 95%CI 1.74–14.20, p = 0.01). There was no difference in mortality between the two groups. Exit-site infection was more common in patients who received EN compared with TPN (OR 3.9, 95%CI 1.02–16, p = 0.31). In general, patients who received EN had a lower incidence of exit-site infections compared with TPN.


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

P1959 TAUROLIDINE PREVENTS CATHETER-RELATED BLOODSTREAM INFECTIONS IN PATIENTS ON HOME PARENTERAL NUTRITION–A RANDOMIZED CONTROLLED TRIAL

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Introduction: Patients on home parenteral nutrition (HPN) are exposed to a lifelong risk of catheter-related bloodstream infections (CRBSI), which threaten catheter and patient survival. Both taurodiline 2% and saline 0.9% solution are used as catheter lock solutions (CLS) to prevent CRBSI. The optimal agent however, remains unclear. We hypothesized that taurodiline as CLS is superior to saline in preventing CRBSI in HPN patients.

Aims & Methods: We hypothesized that taurodiline 2% as CLS is superior to saline 0.9% in preventing CRBSI in HPN patients. This multicenter double blind trial randomly assigned HPN patients to use either the CLS taurodiline 2% or saline 0.9% solution after the catheter and patient survival. Both taurodiline 2% and saline 0.9% solution are used as catheter lock solutions (CLS) to prevent CRBSI. The optimal agent however, remains unclear. We hypothesized that taurodiline as CLS is superior to saline in preventing CRBSI in HPN patients.

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Conclusion: Taurolidine 2% decreased the risk for CRBSI by more than four fold in HPN patients compared to saline 0.9%. Given its favorable safety profile and lack of evidence for altering microbial susceptibility, taurolidine lock- ing therefore seems a key strategy to prevent CRBSI.

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Introduction: Patients with severe intestinal failure depend on lifelong home parenteral nutrition (HPN) 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 in the Radboud 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 (32%) were damaged at the distal end, near the screw thread of the catheter, 25 CVCs (50%) at the junction between the rigid and flexible part of the catheter, and 9 CVCs (18%) at the flexible part of the catheter. The mean time to catheter repair after failure was 2.2 years (95% CI = 1.55–2.89). 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 compromised vascular access. Catheter repair is a safe procedure.


All other authors have declared no conflicts of interest.

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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 aneffective agent for the prevention of catheter-related bloodstream infections (CRBSIs). Aim of the study was to evaluate the role of taurolidine in preventing 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) were included. The 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 261252 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 or CRO occurred, respectively. Median time to a first CRBSI or CRO was 246 (58–817) 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). Twenty patients reported adverse events (5 grade 1, 13 grade 2 and 2 grade 3) which were possibly related to the use of taurolidine.

Conclusion: This study describes the largest cohort of 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 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 long-term taurolidine 2% as CLS.
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>

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.

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